

PLANNING FOR LOW INCOME SETTLEMENTS in the Blaauwberg Administration Area



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DECLARATION OF PLAGIARISM

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I declare that in the attached paper/project report/project panels:

1. I have used the Harvard convention for citation and referencing. Each derivation of ideas or conclusions, summary, quotation, table, photograph, diagram/drawing or map belonging to someone else has been fully acknowledged.
2. This paper/project/report/panel is my own work
3. I will not knowingly allow anyone else to copy and pass it off as their own

Signed by candidate

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STUDENT NUMBER

I. ACRONYMS

CCT	City of Cape Town
CDW	Community Development Worker
CLO	Community Liaison Officer
CMC	Cape Metropolitan Council
CMIP	Consolidated Municipal Infrastructure Grant
DoH	Department of Housing
DWAF	Department of Water Affairs and Forestry
Du/du:	Dwelling units/ dwelling units
EBU	Electronic Bailiff Unit
EIA	Environmental Impact Assessment
eTM	eThwekini Municipality
EWS	eThwekini Water Services
GIS	Geographical Information System
GCTMA	Greater Cape Town Metropolitan Area
HSRC	Human Social Research Council
IDP	Integrated Development Plan
M&E	Monitoring and evaluation
MOSS	Metropolitan Open Space Systems
MSDF	Municipal Spatial Development Framework
NGO	Non-Governmental Organizations
NIMBY	Not In My Back Yard
O&M	Operation and maintenance
PAWC	Provincial Administration of the Western Cape
PHDB	<i>(see page 11 on my analysis edit 1)</i>
VIP	Ventilated Improved Pit
UDS	Urine Diversion System
SMME	Small Micro and Medium Enterprises

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III. INTRODUCTION

A topic that has increasingly come to the fore in urban planning is the accommodation of those people residing in informal settlements, characteristically the lowest income earners and unemployed. Internationally, nationally and locally, there is a general surge of interest in urban planning towards accommodating low-income settlements adequately, and in formalising informal settlements, based on increasing recognition of peoples' legitimate right to land and security of tenure.

Along with these trends, the challenges presented by the urbanisation of poverty that surfaces in informal settlements has become increasingly of interest to me as a researcher and student of planning, over the past few years. This mini-dissertation provides an opportunity to explore some of the social and technical issues that need to be resolved with regards to low-income settlements.

Largely related to the background of the ANC government's popular promises of "Housing for All" and "Jobs for All", informal dwellers in South Africa expect to receive formal housing and tend only to accept such services as are associated with subsidised housing. However, poverty in urban environments is a deeper issue that exists when an individual's or household's access to income, infrastructure or services is inadequate to meet their basic needs. More than a lack of income, poverty exists for that section of the population who are unable to pay for basic services or access development opportunities (Van Ryneveld, Muller & Parnell, 2003).

Increasing urbanisation of poverty presents a challenge to decentralized local government. Although informal settlements have finally become accepted as a local government responsibility, insitu upgrading is a politically driven and preferred response to informal settlements. Upgrading, wherever possible, appears to be a reactive approach by local authorities rather than a pro-active response to the reality of increasing informal settlement. There is little evidence that authorities are planning ahead for informal settlements.

Current policy and housing strategies consider those settlements where people earn less than R3500 per month as low-income settlements. In this document, reference to low-income settlements encompasses those who earn less than R3500 per month as well as the unemployed. Poverty alleviation has gradually become a primary political focus in Cape Town, manifesting in informal settlements eventually being allocated a substantial budget, as recently as 2003.

This project is based on an extensive literature review that includes internal reports of city officials engaged in current upgrading of informal settlements initiatives of the City of Cape Town, as well as the ongoing debates surfacing in newspaper articles. Access to data gathered from field visits and on-site

observations, attending public participation meetings and interactions with officials and their appointed consultants, has broadened insight with regards to low income settlement upgrading.

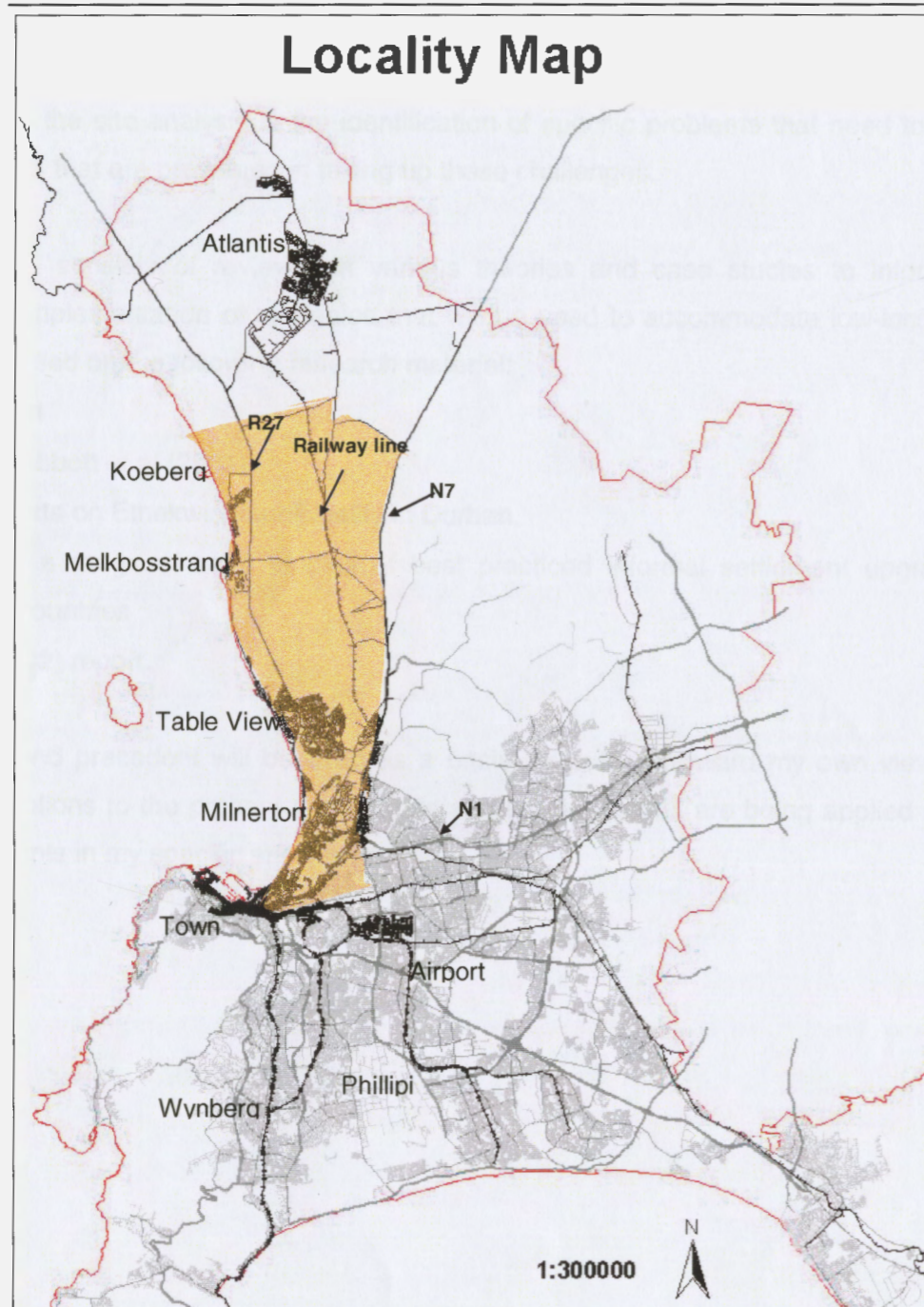
The first section of this document provides the contextual background to the existing situation of low-income settlements in South Africa, and more specifically Cape Town. An analysis of economic opportunities, institutional and servicing issues that are associated with low-income settlements informs this background. As approaches to low income settlements in South Africa are still largely based at the national and provincial levels of government, rather than at the local metropolitan level, this section illustrates the shaping of the initiatives that are in place at a site-specific level.

Section 2 comprises a site-specific analysis of the northern suburbs of Cape Town. The N1 and Salt River canal in the South, the N7 in the East, and the Atlantic Ocean in the West are the boundaries of the selected study area. To the North the study area extends to Philladelphia Road and Brakkefontein Road, including Koeberg. For details refer to the locality **map 1** below. The most recent 'Blaauwberg Spatial Development Plan', compiled by Planning Partners (2002) is used as a reference, along with various other Framework plans and proposals. Additional information is gathered from GIS and from current newspaper articles reporting on developments, debates and perspectives.

In order to construct proposals on how to intervene in the study area so as to accommodate low income settlements in a more sustainable and integrative way, theory and case studies that provide precedent on approaches to low income settlements allows for drawing on a number of lessons that can be applied to the site. This will be the focus of Section 4.

As the outcome of all the above sections, an improved approach and strategy for upgrading low-income settlements is suggested. The pre-empting of problems associated with foreseen increases in low-income settlements is put forward in the proposition that identifying and planning land most suitable for accommodating low-income settlements is an essential component of an effective strategy. As no proposal is complete without taking implementation into account, this will be dealt with in Section 5 through identifying a number of actions that would need to be carried out in order for such a proposal to be implemented.

Map 1: Locality Map



IV. METHODOLOGY

A research framework that has been applied to organising the production, collation and analysis of data for planning purposes is based on accepted key performance principles for the planning of well-functioning settlements in general. Adapting and applying this framework has guided the research process. The data has therefore been compiled and processed in a sequence that is aligned with these principles.

The Maps that are referred to throughout the document are mostly hand drawn and based on a combination of GIS (Geographical Information Systems) data from the Blaauwberg and City of Cape Town (CCT) GIS Departments, data obtained from planning documents, and the 1996 and 2001 Census data. These maps were shrunk to an A4 format and scanned into the document. Some of the maps are directly imported from GIS data.

An extensive review of literature during the first phase of research related to the broader context and background relevant to the subject, followed by reviewing current policies, guidelines and programmes that influence and inform local processes and approaches to informal settlements.

- Current international and local discourse relating to key informal settlement-related themes;
- An update on national government policies, Integrated Development Planning (IDP) guidelines relevant to local authority approaches to informal settlements;
- Programmes such as public works and local economic development imperatives and Reports on studies of South African public works programmes and directed procurement in poverty alleviation related programmes;
- Reports on studies and initiatives relating to informal settlements policy and approaches to delivery of basic services;

The contextual text is based on intensive research leading up to this report, focusing on tracking the City of Cape Town's (CoCT) progress and processes in implementing informal settlement upgrading, as conceptualised since the June 2003 allocation of budgets and strategy presentations. The research schedule and activities included:

- Desk-top study of the CoCT current audits, policies, strategy and tender documents;
- Site visits to prioritised informal settlements;
- Interviews with officials in relevant departments;
- Interviews with consultants and contractors employed by the city;
- Observation of public participation and community liaison meetings;
- Recording of inputs and discussion at CoCT and Department of Water and Forestry (DWAF) coordination meetings.

The second phase of research draws on planning documents that have been produced, and that include my specific study area. A particular useful document was latest Blaauwberg Spatial Development Plan produced by Planning Partners (2002), which is presently being used by the Blaauwberg Municipality. Other research material that informed the site-specific analysis include:

- An analysis of the Census 1996 and 2001;

- Various audits and reports on the specific informal settlements in my site;
- Newspaper articles;
- A variety of planning documents.

The outcome of the site analysis is the identification of specific problems that need to be addressed and opportunities that are presented in taking up these challenges.

The third phase consists of reviews on various theories and case studies to inform the proposed strategies and implementation of strategies that will be used to accommodate low-income settlements.

This phase is based on the following research material:

- Habitat report
- Reports by Abbott et al (2001)
- Various reports on Ethekewini municipality in Durban,
- A review of a range of case studies of best practiced informal settlement upgrade initiatives in developing countries
- Dewar's (2002) report.

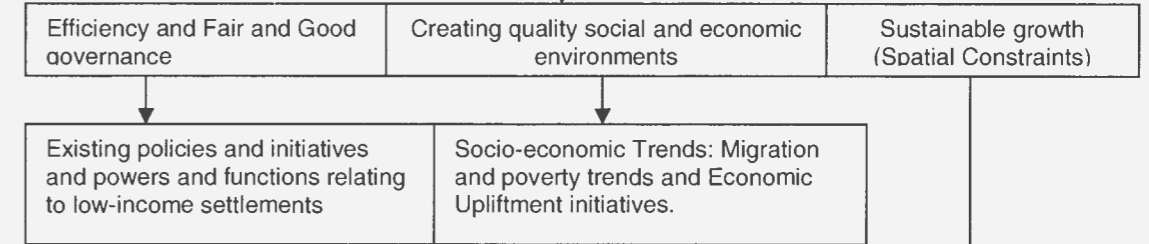
Finally, theory and precedent will be used as a basis for putting forward my own views to suggest or propose interventions to the present approaches and strategies that are being applied to deal with low-income settlements in my specific study area.

V. STRUCTURE (Figure 1)

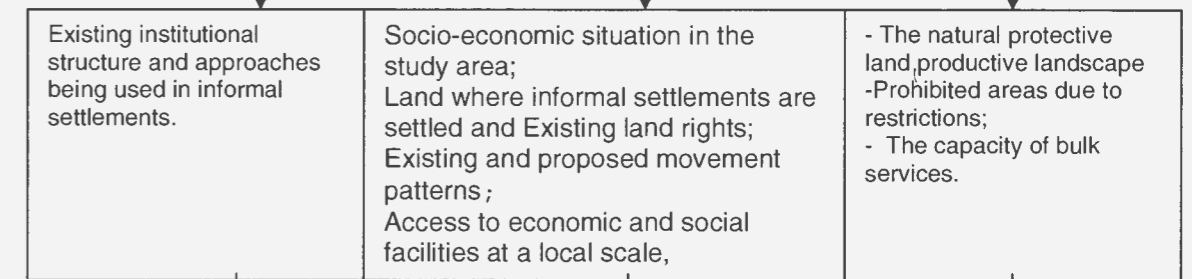
PERFORMANCE PRINCIPLES:

Equity of access for low income housing to: Land, services, opportunities, shelter and public spaces; while still maintaining environmental sustainability and bulk services capabilities

CONTEXTUAL ANALYSIS: *What is*



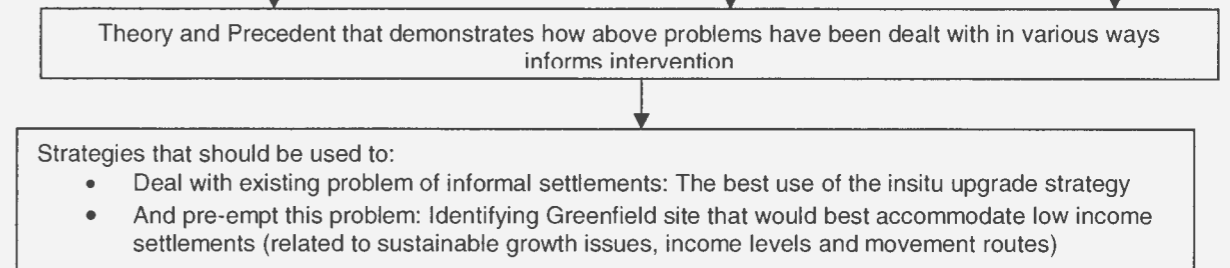
SITE ANALYSIS: *What is*



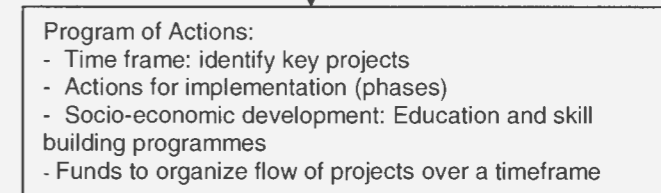
PROBLEM STATEMENT:



INTERVENTION: *What could be*



IMPLEMENTATION: *How it could be*



The above framework is a visual representation of how this document is structured, illustrating how the discussion and analysis is laid out and where it is heading.

VI. DIRECTIVE PRINCIPLES

The performance principles on which this project is based are a set of guidelines for informing interventions and priorities if planning is to be effective. These principles represent what the municipality as a whole and its different sectors should strive towards. The principles are those that regulate spatial land development and land use management in South Africa at all spheres of government, as set out in the Land Use Management Bill, 2002 (Ogle, 2003). Performance principles are as follows: Equity; Efficiency; Integration; Sustainability; Fair and Good governance.

The Land Use Planning Ordinance 15 of 1985 (LUPO) is to be replaced by the Western Cape Planning and Development Act (Act 7 of 1999) that is more focussed on issues revolving around low-income settlement developments. The principles alluded to in this Act have also significantly influenced this document and are as follows:

- Facilitating rural and urban planning and development of existing and new formal and informal settlements;
- Discouraging illegal occupation of land;
- Identifying sufficient land for permanent and temporary reception areas; and
- Promoting efficient and integrated planning.
- The Act emphasises environmental and holistic planning. This implies that planning at all levels will be undertaken in terms of the bioregional planning principles.

(Planning Partners, 2002: 8)

As the Metropolitan Spatial Development Framework's (MSDF) spatial principles have been accepted at a broader metropolitan scale, all lower order planning should adhere to its six (6) key spatial principles (1996), which are: Management for sustainability; Creation of Quality Urban Environments, Redressing imbalances, Containing sprawl, Residential intensification, Urban Integration.

All these principles are important to every planning proposal. However, since the focus of this document is on planning for low-income settlements specifically, the principles are aligned with rights of access to land for all citizens, as enshrined in both South Africa's Constitution and the principles from the Western Cape Planning and Development Act (Act 7 of 1999).

Taking account of existing and key legislative principles, the directive principles are applied to this research and the proposal arrived at in this document, as listed below:

1. **Efficiency and Fair and good governance:**

The objective of this principle is to identify the best approach that should be used when dealing with low-income settlements. The Local Authority's approach is formed by policies, but policies need to

deal more effectively with low-income settlements, including informal settlement. Government and civil society backup for the provision of low-income housing must be efficient. Responsibilities must be clear and funds at the local level must be able to be readably accessible when needed.

This is a crucial principle underlying and informing this project.

2. **Creating Quality Social and Economic Environments:**

The focus of this policy is to ensure social needs are met. The objective is to create positive social and economic development for low-income settlements through social and economic programmes and ensuring that facilities for these are accessible.

A lack of local economic opportunities results in the inability of low-income earners to afford the long term costs of upgrade projects. This is taken into account in this project.

3. **Sustainable growth:**

This is growth that does not destroy agricultural or environmentally significant land, stays outside of dangerous areas (flood lines, Koeberg 5km radius etc) and does not overload existing infrastructure capacities. These factors are major limitations to development in the majority of my study area and determine where development can go.

Many assumptions are made in present approaches to upgrading, including the overburdening of infrastructure capacities related to the levels of services provided in formalizing settlements.

4. **Integration low-income settlements into the urban fabric:**

An overall objective is to integrate low-income settlements into the existing urban fabric. This would include providing access to land that is well situated in terms of economic opportunities for low-income settlements.

Integration of the low-income settlements into the surrounding urban fabric and the area as a whole, including the Southern area, requires new linkages such as improving the transportation network (public transport) and supporting mixed use of land and activity streets.

Cognizance of these principles is consistently applied throughout the research, analysis and proposals emanating out of this project.

SECTION 1: CONTEXTUAL ANALYSIS

1.1. SOCIO-ECONOMIC TRENDS IN LOW INCOME SETTLEMENTS

1.1.1. POVERTY AND URBAN MIGRATION

According to the United Nations Settlements Programme, UN-Habitat, in South Africa only 10% of the people control 50% of the wealth (Minister of Housing Lindiwe Sisulu, 03/6/04). Recent local reporting reflects that increasing poverty is a newsworthy current affair of the broader public, as for example, "New research by the Human Sciences Research Council (HSRC) has shown that 57% of South Africans are living below the poverty line of R1290 a month for a family of four" (Robinson, 16/07/2004). According to recent reporting to the public the "poverty gap", which measures the required income transfer to all poor households to lift them from poverty, has grown from R56 billion in 1996 to R81 billion in 2001 (Robinson, V. 16/07/2004, "The poor and the poorest", Mail & Guardian).

Related to these estimates, the fact that people living in poverty are increasingly surfacing in the high growth of informal settlements is evident to all. Concern is intensifying at local government level. Widespread urbanisation of poverty, such as reflected in reported speculations above, have contributed to the realisation that the provision of land for low-income settlements and basic services needs to be associated with economic and social up-liftment.

Warren Smit reports that informal settlements have mushroomed in recent years. About a million households lived in informal settlements in 1996, rising to 1.4 million in 2001. Smit informs us that the 2001 census figures showed a housing backlog of about 2.4 million units, of which the majority were households in informal settlements. Further he claims that although the Housing White Paper of 1994 recommended that 5% of total government expenditure be allocated for housing, currently only 1.3 % (Roelf, 22/7/2004), has been used for this purpose. Such estimates are borne out by various sources from different perspectives.

Globally, projections are that informal settlements are set to double in the next 25 years (Robinson, 16/07/2004). In South Africa, the national housing department has been given until September this year (2004) to come up with a programme to "eradicate shacks" (Minister of Housing Lindiwe Sisulu, 03/6/04). Although 1.5 million low cost houses were provided and R 24 billion was spent since 1994 until the present date, informal settlements have doubled (Minister of Housing Lindiwe Sisulu, 03/6/04). In addition, rapid urbanisation has resulted in a thriving backyard rental market, which remains beyond official policy making today (Robinson, 16/07/2004).

Filling in this picture, a report by South African Cities Network (SACN) notes that while informal settlements have grown by 30% since 1996, this form of settlement currently provides shelter for 5.2 million South Africans, between 40% and 60% of the country's urban labour force. Within this national

context, the Human Sciences Research Council (HSRC) identified that 7 out of the 10 poorest municipalities are in the Eastern Cape. The Eastern Cape and Limpopo have the highest proportion of poor people with 77% and 72% of their population living below the poverty line, while "The Western Cape has the lowest proportion of people living in poverty (32%) followed by Gauteng (42%)" (Western Cape, 2003). However, in the Western Cape, there are about 156 informal settlements and about 100 000 informal households, of which 20% have no sanitation at all (Minister of Housing Lindiwe Sisulu, 03/6/04).

The Western Cape as a whole illustrates that poverty and urbanisation trends combine to challenge local governments beyond their housing strategy and budget capacity. One of the attractions for in-migration into the Western Cape is its perceived high employment rate, which compares favourably with that of the adjacent Northern and Eastern Cape Provinces. In 1999, 14.9% of the labour force was informally employed and 18.7% unemployed, which compares favourably with the 36.2% unemployment rate in South Africa as a whole (Informal Settlement Handbook, 2003). There is an overall estimate of 48 000 people moving into the Province per year (Informal Settlement Handbook, 2003). Of this the majority are black migrants from the Eastern Cape. Because these migrants are financially poor and have low-level of skill, they often have no option but to settle in an informal settlement.

In Cape Town, the total housing backlog was recently estimated at 240 000 units (CCT Framework, 16/03/04). There are at least 104 000 informal structures in informal settlements with approximately 55 000 of these structures not having access to full services. The CCT estimates that there are 171 informal settlements situated on either on municipal land (111), PAWC/State land (15) or private land (45). Since the annual growth of households has been set at 19 000p/a and the present housing delivery rate is estimated at 11 000p/a, the net annual growth in housing backlog can be estimated at 8 000p/a. The impact of AIDS on housing demand has not yet been established (CCT: 16/03/04 "Framework for Upgrading Informal Settlements in Cape Town: Corporate Approach").

Cape Town has recently been a focus of political debates when it comes to informal settlements and the provision of low-income housing. This is related to it having the highest number of informal settlements in comparison to the other major cities (Interview with the Minister of Housing-Lindiwe Sisulu, 03/6/04, SABC3). The focus on the need to provide for informal settlement has made such an impact that a special handbook was produced in 2003 by the Western Cape Department of Housing with the assistance of the City of Cape Town.

The population living in informal settlements is mostly in the SE and makes up 15% of the total population in Cape Town. According to Zolile Siswana of the CCT Economics Dept (interview, 01/07/04), the CCT is hoping to reduce this to less than 5% by 2020 as part of an Integrated Development Planning (IDP) innovation. The strip along the N2 (Jo Slovo, New Rest, Kanana, Barcelona, Vukunzenzela, Gxagxa and Europe) has been selected as a pilot project (prioritisation area) through a

set of strategic negotiations involving the City of Cape Town, Provincial and National government. These settlements are earmarked for upgrading on a phased incremental basis as elaborated in the City's Servicing of Informal Settlements Project (SISP), set to role out over 5 years (Napier, 2/6/2004).

Although my focus area is in the Northern Suburbs, mostly between the N7 and railway, the study on the socio-economic profile of this area will be referred back to in a general overview on the socio-economic situation in informal settlements. Certain settlements, such as Sweet Home and New Rest can also be used as examples of procedures in upgrading. Du Noon is a settlement that will serve as a basis for situations in informal settlements in my area, partly because it is the only informal settlement in the Northern Suburbs that was included in the census 2001. Focusing on the Northern suburbs in this project was partly influenced by the current lack of focus in this area.

1.1.2 ECONOMIC UPLIFTMENT INITIATIVES

A widely accepted view that, "Poverty reduction and growth are not competing routes to city development" and that failure to address needs of the poor may jeopardise growth (Van Ryneveld, Muller and Parnell, 2003) is promulgated, while the responsibility to find solutions has been decentralized to local government. More than a lack of income, poverty exists for that section of the population who are unable to gain access to development opportunities or to pay for basic services (Van Ryneveld, Muller and Parnell, 2003). Providing accommodation and essential services in such "abnormal circumstances" must take into account that alternatives to the ability to pay for services must be found. This suggests a much wider issue than the public sector capacity required in the "normal circumstances" of planning to provide sustainable services (Rossouw & Crous, 2001), or formal housing with higher, more expensive, levels of service.

As low-income settlements and provision of basic services clearly need to be accompanied by economic and social upliftment, the challenge for low income and informal settlements is to deal with the known high unemployment levels, low skills levels, no (or few) formal businesses and the fact that they occupy either public or private land. Increasing urbanisation of poverty has led to devising a number of economic upliftment programmes focused on job creation.

In South Africa, the national 2004/5 annual budget allocations reflected a pro-poor bias in the R26.3 billion increases of allocations to provinces and R3.9 billion for municipalities. Provinces were to get just over R180 billion from the overall budget and were expected to raise about R5.3 billion themselves. Funds were intended to be channelled into development of scarce skills, scaling up of HIV/Aids treatment, extension of social assistance through enhanced income support to poor and educational materials, as well as public works and comprehensive farmer support programmes (Makhudu Sefara, E. & Loxton, L. 19/02/2004 "It's a bloody good Budget", Cape Times).

The Department of Water Affairs and Forestry (DWAF), the lead national department responsible for addressing the water and sanitation backlog in the country, has also aligned its approach with local economic upliftment. Guidelines introduced in the recently revised Water Services strategy include enact poverty alleviation and local economic development, accessible as principles in the revised Planning Framework chapter that emphasizes the importance of, "Supporting sustainable livelihoods and local economic development". Meeting the basic services obligation offers local authorities significant potential for poverty alleviation through job creation, development of skills and providing "long-term livelihoods for many households" (DWAF, 2003:36).

An example of how national initiatives have translated into the Western Cape is demonstrated by the City of Cape Town's 2004/5 budget of a provisional R10 million made available for a new housing allocation (CCT: 16/03/04 "Framework for Upgrading Informal Settlements in Cape Town: Corporate Approach").

The City of Cape Town's Mayor, Nomaindia Mfeketo, subsequent presentation of the City of Cape Town's budget for 2004/5 as R12.8 billion, was related to projects and programmes from the Integrated Development Plan (IDP) and the 2020 Vision for Cape Town. Capital spending emphasis is on maintenance and repairs, vital infrastructure and moving urgently to upgrade and develop informal settlements and other disadvantaged areas. From the 1st of July 2004, the very poorest households received a 5% decrease as other higher income earning households got a 5% increase in their total bill for water and electricity (CCT, July 2004).

Another national initiative that has taken off in this country is the Expanded Public Works Programme (EPWP). This is a major national poverty alleviation initiative intended to create mass temporary jobs. Its target for the five-year term of the current government is at least 1 million temporary jobs in a range of sectors (Business Report, 1/9/04: www.busrep.co.za). Pinpointed as a strategy that will overcome poverty, February 2004 saw Trevor Manuel designating expenditure of an additional R3.5 billion on public works programmes over the next 3 years. The allocation is partially earmarked for labour-based projects that include housing, household services, schools and clinics, as well as new economic infrastructure. ("Additional R3.5 billion will be spent on public works" 19/02/04, This Day). The focus of the EPWP is to address underdevelopment in the 'Second Economy' by building infrastructure, which suggests that informal settlements may be a reasonable target.

The EPWP will utilize no less than R15 billion in its first five years of operation to create more than 1 million jobs. The second element of the programme is the up-skilling of people, so that they move from being unemployable to being employable through Learnerships and internships in selected infrastructure development and other labour-intensive government funded projects. The Economic Sector aims to provide unemployed people with Learnerships relevant to that sector, targeting 15000 employees over five years. Sector Learnerships, work-based experience and training that culminates in qualifications for

learners aims at significantly increasing the chances of entering the job market for the first time, and gaining re-employment after retrenchment or the end of short-term contracts. So far, three major financial institutions have made proposals to provide financial services to learner contractors. Some additional donor support for the programme is being mobilised.

In the infrastructure sector, a Labour-Intensive Contractor Learnership programme has been initiated. This programme is a joint initiative of Department of Public Works (DPW) and the Construction Education and Training Authority (CETA) and will be implemented with partnering provinces and municipalities. DPW will put in place NQF unit standards, qualifications and accredited training programmes for contractors and engineers for labour-intensive construction. The CETA together with the Department of Labour (DoL) have undertaken a crucial role in ensuring these standards are implemented, planning for at least 500 individuals across the country to enter into Learnerships for contractors and construction site supervisors in order to execute EPWP projects. Train the trainer programmes for 35 training providers are currently running to ensure these (Business Report, 1/9/04 www.busrep.co.za) training courses will be available across the country. In preparation for implementation, the objective of a programme to visit various provinces and municipalities that is under way is to explain the role of both the provinces and municipalities and to give comprehensive guidelines about the implementation of projects under the EPWP.

While it remains to be seen whether the EPWP will achieve its aims, training for up-skilling people through learner ships across all sectors of our economy is ultimately about bridging the gap in this country between what President Thabo Mbeki calls the mainstream 'First Economy' and the largely informal 'Second Economy'. Ensuring that the majority is absorbed, integrated and therefore able to benefit in the growing economy of South Africa (Ms S Sigacau – Minister of Public Works (03/03/2004), would be well-advised to engage those people living in poverty in informal settlements.

One of the government's less successful areas of intervention in the past, of relevance to the residents of informal settlements, has been small business development. A review of small business policy is to be published by September along with a review of the regulatory framework for small businesses. A key reform is the establishment of a single unified small business support agency by the end of 2004. The government is also currently committed to a Co-operatives Bill by the same deadline. Another initiative expected to spark small business development is the establishment of a new agricultural credit scheme with R1 billion in starting capital (Business Report, 1/9/04: www.busrep.co.za). The main objectives and programme themes that the South African government is promoting are explained in a recent Business Report (01/09/2004) as objectives for interventions to support growth of the 'second economy'.

Eliminating conditions of extreme poverty to create conditions for sustainable livelihoods and reducing the dependence on social grants hopes to open up paths for mobility to the first economy. It is on this premise that a social grant system is not being considered. The major themes of these national programmes are to create temporary work opportunities, skills development, flow of information and access to finance for poor households and micro enterprises. However, there are those who argue, "government can afford a Basic Income Grant for the poor", arguing that a small, stable income enables poor households to take the sort of risks inherent in job seeking and entrepreneurship (6/8/2004: <http://allafrica.com>).

Based on research commissioned by a coalition of civil society organisations, it is argued that the South African government can provide a Basic Income Grant (BIG) to the poor by raising taxes. They are lobbying for a grant of at least R100 to be paid to each poverty stricken person for several years. The government has publicly maintained that BIG would cost between R45 billion and R65 billion (\$7 billion to \$10 billion), However, research showed that if R120 is given out [per recipient] it would cost the fiscal between R10 [billion] and R22 billion a year. In response, government argues against creating a culture of dependency, preferring to create jobs through public works projects and strengthening income support by extending child support, pension and disability grants to more recipients.

1.2. INSTITUTIONAL CONTEXT

1.2.1 EXISTING POLICIES AND INITIATIVES

The South African Constitution enshrines the right of all citizens to adequate housing, health care services, sufficient water and adequate sanitation as well as children's rights to basic infrastructure and shelter, health care services and social services (IS handbook, 2003). Promoting a developmental approach to achieving these rights, guidance from the Constitution, Act 108 of 1996, section 152 requires local government to:

'provide democratic and accountable government, ensure provision of services in a sustainable manner, promote social and economic development within a safe and healthy environment and to encourage the involvement of communities and community organisations in matters of local government.'

Transformation of local government in South Africa began to take place in terms of the Local Government Transition Act, Act 209 of 1993. Developmental local government is guided by national policies and legislation. Since 1991, it is of note that these have increasingly enabled the acquisition and expropriation of land for low-income settlements. Legislation demonstrating this trend, and that directly affects informal settlements, is listed below.

- The Expropriation Act (63/1975);
- The Less Formal Township Establishment Act (113/1991) that is the shortened procedure for designation, provision, development of land for the establishment of townships;

- The Provision of Land and Assistance Act (126/1993);
- The Restitution of Land Rights Act (22/1994);
- National standards and building regulations (13/1997) requiring a plan to be submitted a certificate of occupation and minimum fire and safety requirements;
- The Prevention of Illegal Eviction from an unlawful Occupation of Land Act (19/1998);
- The Housing Act (107/1997) expropriation of land for housing.

In addition, the Western Cape Administration Act (6/1998) enables the acquisition and disposal of provincial land that was previously inaccessible to local government for development.

Local government is also guided by legislation that relates to people's living conditions and the environment of human settlements, including:

- The Health Act (63/1977), which requires structures to have adequate sewage, drainage, water for washing and sanitary conveniences, lighting, ventilation and refuse removal;
- The Environmental Conservation Act (73/1989) that requires an Impact Assessment;

The National Environmental Management Act (107/1998), stipulates that people should have access to an environment that is not harmful to their health or well-being. It also stipulates that the state is required to protect, promote and fulfil the social, economic and environmental rights of everyone, as well as producing an environmental plan.

However, despite all this legislation, there is still no policy direction for informal settlements that do not demonstrate immediate life threats, although they do continue to have insecure tenure and other discomforts that mitigate against the basic conditions enshrined in the Constitution. Illegal invasions of land have not diminished, but have rather been on the increase. Since the landmark Grootboom court case in December 1999, in which the Cape High Court ruled in favour of temporary shelter and services being provided to the affected community in the informal settlement of Wallacedene, informal urban land occupation has received national attention in South Africa. The ruling requested that the government's existing national housing programme be extended to cater for the immediate needs of those living in intolerable conditions (Huchzermeyer, 2003).

Nationally driven housing policy and subsidy strategies have fallen short of the expectations raised by the popular politics of 1994. Over the years, in efforts to increase delivery the national Department of Housing has established a number of Housing Institutions including:

- the National Housing Finance Corporation,
- the Social Housing Foundation,
- the National Home Builder Registration Council,
- the Peoples Housing Process Trust,

- the National Urban Reconstruction and Housing Agency,
- Servcon and Thubelisha Homes (National DoH, 2/9/04).

However, despite only about 42% of households in informal settlements qualifying for housing subsidies, individual ownership through the subsidy system is still encouraged by national policy (Watson, 2003).

In 2001 the then national Minister of Housing admitted that a lack of delivery and the increase of informal settlements meant "back to the drawing board" with regards to policy for informal land occupation (Huchzermeyer, 2003). The result was a policy extension that addressed emergency or disaster situations. However 'In the almost three years that have passed since the Grootboom judgement, increasing attention has been drawn to the fact that our land and housing policies at national level do not as yet include mechanisms with which to respond adequately to the reality of informal settlements' (Huchzermeyer, 2003:2,3).

Led by senior researchers and co-investigators Marie Huchzermeyer, Aly Karam and Mzwanele Mayekiso, a group of Masters students in the Planning department at the Witwatersrand University are conducting extensive background research for the Department of Housing (DoH) to contribute to an informal settlement upgrading policy (www.wits.ac.za/informalsettlements/researchers.html). This NRF funded project that focused on informal settlement policy is now being overtaken by the national DoH in going ahead with formulating a policy. 'This means the DoH is finally putting together a policy for upgrading informal settlements' (Huchzermeyer, 2004). Meanwhile, opinion reflected in news reporting indicates that the "government is shifting its policy on informal settlements away from relocating residents and towards upgrading and developing programmes that would make shack communities a permanent feature of the South African landscape" (Robinson, V: 16/07/2004 "Government shift on shack dwellers", Mail & Guardian).

The new plan that has recently been produced by the national Department of Housing (DoH, 3/9/2004) is still, however, focused on the provision of formal housing. The changes benefit the middle-income (R3500-R7000) population's access to houses and provide for funding of social housing through public and private partnerships for social housing institutions. The main change to the under R3 500 earners is that the subsidy bands will be collapsed into a uniform amount from 1 April 2005 (DoH, 2/09/2004). This does not mean that services will not be provided through the housing schemes, however it is a matter of which takes precedence: housing rather than the provision of services to existing settlements.

The alternatives are informal settlements upgrade projects and serviced sites in order to serve more households in need. In respect of informal settlements, some headway is being made in an approach to a major challenge, the reality of informal settlements that confronted government at a local level. The new informal settlement-upgrading instrument being adopted in line with international best practices is a

phased in-situ upgrading approach. Municipalities will implement 9 pilot projects, one in each province, to build up to a full program implementation status by 2007/8. One such project has already been initiated in the N2 upgrading project from the Airport to Cape Town, therefore a further 8 projects are still to be identified (National DoH, 2/9/04).

Regarding direct economic benefits from significant investments in development activities, the scope of opportunity for local economic development, through small contractors and local employment, must be kept in mind. Statutory Requirements for Procurement are referred to below:

- Section 217 of the Constitution of South Africa (Act 108 of 1996);
- the Preferential Procurement Policy Framework Act (Act 5 of 2000);
- the Preferential Procurement Regulations, 2001 (No. R.725 of 10 Aug 01);
- the National Small Business Act (Act 102 of 1996);
- Local Government Transition Act, 1993 (Act 209 of 1993) Regulations Regarding the Calling of Tenders;
- Local Government Transition Act Second Amendment (Act 97 of 1996); Regulation 29 of the Department of Planning, Local Government and Housing with regard to Auditing and Accounts of Local Authorities (notice 565 of 1996, as amended) (CCT, 2004).

The City of Cape Town (CCT) must follow the procedures set out in the Procurement Policy that was drafted in March 2000. This interim procurement policy states that, "The goal of the policy is to ensure that the city of Cape Town procures goods and services that meet their needs in a manner that is cost effective and at the same time pursue certain specific socio-economic objectives through a preference system that enables increased participation of the Small Business sector with particular reference to the PDI, women and the disabled" (www.capetown.go.za, 2003). Preferential Procurement is a procurement system that provides categories of preference in the municipal allocation of contracts, designed to activate the participation of previously disadvantaged groups. The extent to which this is carried out and the potential for local procurement will be discussed in later sections of this document.

To cater for municipal areas beyond urban centres but within the boundaries of their jurisdiction, there are also rural and agricultural policy initiatives related to agricultural holdings that can be utilised in job creation initiatives for low-income settlements. Policy initiatives relating to agricultural holdings at a provincial and National level (Planning Partners, 2002) are:

- The Policy for the Establishment of Agricultural Holdings in the Urban Fringe 2000, aims to create opportunities for aspirant farmers to access land and develop agricultural holdings within the urban fringes;
- The Agricultural Potential and Utilisation of the Atlantis Corridor (1999) report addresses economic potential and viability of commercial agricultural enterprises suitable for the study area; and

- A Rural Management Study, (2001) aims to introduce a consistent and sustainable basis for managing the City of Cape Town's unique rural areas.

The potential offered by existing programmes and opportunities for stimulating job creation will be further linked to the socio-economic realities associated with informal settlements presented throughout the research.

1.2.2. POWERS AND FUNCTIONS

1.2.2.1. Coordination across government levels

Cooperation between national, provincial and local government can be achieved through various mechanisms. There are three routes through which this can be carried out (CCT, 2004):

Plenary powers (under sole control of national government);

Concurrent powers (responsibility shared by local and national government);

Exclusive powers (provincial responsibility).

Of major concern in sharing of powers at this level is the need for a clear indication of who is responsible for what specific functions, in order to avoid duplication and improve accountability. Demands for more accountable and democratic local government that form the basis for decentralizing government responsibilities, cannot rely solely on policies and legislation. Improvement in local government needs to be accompanied by adequate financing and local capacity to meet the new challenges (UN_HABITAT, 2001:1).

Contained within the most recent plans for improving housing delivery¹, it is argued that capacity constraints have been experienced most acutely at local government level, relating this to an inability to align departmental funding streams, employ innovative planning principles, acquire affordable land and sustain a dedicated group of officials (DoH, 2/9/2004). Each Provincial department is also required to reserve 0.5-0.75% of the total budget for emergency housing. A municipality can thus also access emergency funds for housing in critical situations (Western Cape DoH, 2003). Both of the above funding resources are only available to those earning under R 3500 p/m (Western Cape DoH, 2003). It appears that funding that is made accessible on a national level is not being drawn on sufficiently by local government.

A number of mechanisms have been put in place to regulate access to, and expenditure of, national funds. The Municipal Systems Act (2000) makes provision for Integrated Development Plans (IDPs); a compulsory planning instrument with procedures intended to guide municipalities in undertaking development-orientated planning. The IDP process demands of municipalities that they formulate

¹ "Breaking New Ground: Comprehensive Plan for Housing Delivery – Part B" approved by Cabinet and presented to MINMMEC.

workable, sustainable planning frameworks on which amongst others, all decisions on land development should be based (CCT, 2004). This attempt to align and coordinate different levels of government is meant to make plans that work with, and not against each other.

New municipal boundaries have been created in a search for more “integrative governance”. (Göbler, 2004). Cape Town’s political structure was therefore changed once again in December 2000, with the intention of unifying local government. The previous seven Municipalities were merged to form a single municipality, or “Unicity”, called the City of Cape Town. Although the different municipal offices still operate as administrations for the previously demarcated areas, it is the City of Cape Town that now controls most land in wider Cape Town. This is true for the Blaauwberg Administration where the Planning Section for the northern suburbs is still based, whereas all informal settlement-related services are managed by administrative branches (staffed by civil engineers), and based at the central City of Cape Town Municipality.

One of the issues that require coordination across government levels is related to the processes by which Local Government receives funding for low-income settlement upgrades. Cape Town is a category ‘A’ municipality, whereby local authorities receive CMIP (Consolidate Municipal Infrastructure Program) funds from Provincial authorities of the Western Cape Housing Department. The procedure for acquiring funds requires the municipality to produce a business plan 3 years in advance, for improvement programs in specific financial years. This is part of the IDP requirements (Western Cape DoH, 2003). The National government, which provides funds, and provincial governments, which administer subsidies, have led housing development since 1994 (Robinson, 2004). Subsidized finance is allocated to local housing agencies in accordance with the National Housing Fund, which is a form of revolving fund supported by the Treasury from the general tax revenue (Western Cape DoH, 2003). Although a large portion of the housing subsidy goes into service provision, the Housing Departments standards are orientated towards the provision a formal top-structure and hence only traditional services are considered, such as flush toilets.

Previously, local government capacity issues were centred on accessing national and provincial funds to finance incremental upgrade programmes. In the context of socio-economic inequalities, participatory democracy is embedded at a national level. Local level execution is expected to ensure efficient delivery that fulfils the basic needs of all citizens, and enhances economic growth. While the IDP planning tool is meant to bend project cycles towards improving the quality and coverage of delivery (Pieterse, 2002), limited local government capacity often leads towards privatisation and wholesale appointment of professional consultants. As Pieterse points out, the promotion of civil society’s role, poverty alleviation and job creation hovers in contradiction (Pieterse, 2002).

1.2.2.2. Civil society’s potential role in informal settlements

Civil society roles vary from one country to the next, as does the ethical and political character of civil society actors. Indeed, there is great variation in the responses of civil society regarding concerns with issues of informal settlements or involuntary illegality. The role of civil society in Brazil and India, for example, has been to mobilise particular constituencies, be they slum and pavement dwellers in India or *favela* inhabitants in Brazil, to participate in politics and public affairs. Civil society ethics underlie the participatory spaces that were eventually opened for civil society in the Brazilian and Indian system of government, which has encouraged the development of alternative policies. Civil society’s direct involvement in policymaking contributes to reshaping of policies that affect people living in poverty (Huchzermeyer *et al*, 2004).

In South Africa there was strong concern by civil society in the late 1970s and throughout the 1980s, but other than the consistent efforts of the Homeless People’s Federation and People’s Dialogue Alliance, in the 1990s informal settlements have not dominated civil society activities. Only in the new millennium have informal settlements resurfaced on the civil society agenda. “New” issue-based social movements have emerged in response to growing dissatisfaction with evictions, involuntary relocations and the persistence of unequal distribution of land rights, (Huchzermeyer *et al*, 2004). These include the Landless Peoples Movement and the Anti-Privatisation Forum, both of which came under the spotlight during the World Summit for Sustainable Development held in Johannesburg in 2002.

There are a number of active non-government organisations (NGOs) that have developed innovative approaches to housing backlogs over the past decade. Examples include the Chiani funds for self-help housing process and the Development Action Group (DAG), based in Cape Town. NGOs have demonstrated that they have a significant role to play in upgrading informal settlements based on their experience in working with people on the ground, and in areas that government has historically avoided. Most NGOs rely on external donors and international networks for recognition of their work.

Private companies are mostly interested in higher income settlements, and although there are some showing short-term interest in social projects they cannot be relied upon in that they are ultimately profit-driven. While a macro-economic goal may be to encourage private investors to invest in the poorer sectors of society, many analysts maintain that this strategic element cannot be relied upon, and is likely only to occur after significant public investment in public interventions, if at all.

All levels of government and the basic services sector in general are embracing a more social approach to basic services for poverty alleviation and opportunity development. The principle that households and communities are central role-players (DWAF, 2002) is promoted in most such government programmes. While broad agreement that community-level actions are key to effective and sustainable development

continues to be promoted (DWAF 2003), insufficient implementation remains a frequently cited cause of failure. The Department of Water Affairs and Forestry (DWAF) encourages the use of NGO's to assist in developing capacity building programmes in informal settlements, regarding the use, operation and maintenance of water services, as part of addressing the basic services backlog.

The extent to which local government engages with civil society and non-government organisation has been negligible. Engaging with informal settlement leadership, through local Civic Associations, inevitably draws on the existing capacity of the neighbourhood Block Committees that make life possible on a daily basis, as a form of informal and very local government. Formalisation of linkages with individual residents through Councillors tends to discount the local organisational capacity that can be seen actively engaging in issues with local government in, for example, the Khayalitsha Development Forum.

Support for community based organisation within informal settlements requires a social rather than technical development experience and expertise. Civil society organisation that is specific to informal settlement cannot be adequately explored within the limitations of time and space in this project, but it is an important aspect that calls for focused attention beyond the broad one-way information sharing processes adopted by municipalities as a norm under the banner of Public Participation.

1.2.2.3. City of Cape Town Line Departments' involvement in Informal Settlement Upgrading

Recent research has singled out the City of Cape Town (CCT) as being furthest behind implementation of basic services provision to informal settlements, in comparison with other the other large cities in South Africa, such as Johannesburg and Durban (Lagardien & Cousins, 2002). Arguably, this is due to the CCT being stuck in a planning phase in facing the unstable and constantly changing informal settlement phenomenon in this city. Thousands of informal dwelling units have been known to spring up overnight. Repeated and constantly revised auditing exercises are at least partly due to trying to keep track of the increasing emergence and mobility of informal settlements. The current response of the CCT is that audits are to be updated as informal settlements are serviced (Interview: Fourie, 16/08/2004). Therefore, it appears that the CCT are doing fairly well in terms of planning as information on the growth and changes in informal settlements can be readily accessed from audits and GIS (Geographical Information Systems) data on informal settlements over the past few years. This can be very useful in terms of tracking informal settlement growth and changes.

An interview with Mr. Denzil Fourie, designated by the CCT Development Support Branch to focus on informal settlement upgrading, yielded the following view from the city's perspective. He explained that during 2003 a multidisciplinary task team that included all relevant parties was set up to address in informal settlement upgrading (Fourie, 16/08/2004). Having completed an initial audit, a ranking system

was established for prioritisation to inform a 5-year program (Fourie, 16/08/2004). The approach took account of categories of land ownership (public, state or private), densities (whether de-densification needs to occur first), and whether land that is settled on is unsuitable for in-situ upgrading (e.g. detention pond) and could therefore only be given a temporary level of service. The task team worked out that they would have to spend R10 million a month to service all the existing informal settlements within a 5-yr programme.

This year's budget is around R12 million for the eradication of backlogs (Fourie, 16/08/2004). Partly because difficulties are experienced in implementing basic service provision in informal settlements, and partly related to the upcoming elections, the Mayor of Cape Town announced a "state of emergency" in the City of Cape Town in mid-May 2004. The Mayor declared that all informal settlements would have basic services by the end of June 2004 (Fourie, 16/08/2004).

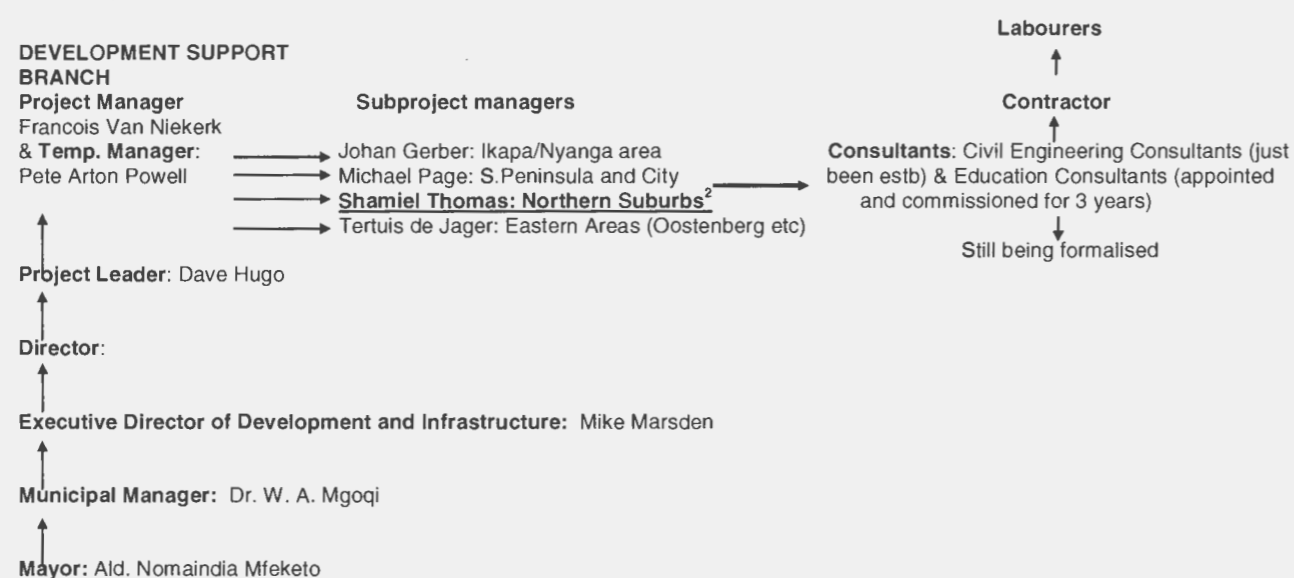
Internal documents confirm that prior to May 2004 there were two departments, the Development Support Department and the Sewage Branch, that were involved in informal settlement upgrading. Neither of these departments had the Mayor's directive as part of their job descriptions. In other words there was no structure in place to deal with extensive informal settlement upgrading as yet. Although a 3-5 year program was in place to supply sanitation to informal settlements and consultants were appointed to do the designs, according to Denzil Fourie (Fourie, 16/08/2004), the coming elections influenced the adoption of an "emergency" strategy, reducing the 5-year plan to a 3-year program, and temporary services to a 1-month directive.

Apparently procurement policy was suspended and the Mayor opened the doors to access any resources needed. Fourie reports that about R10million has been spent in this 1-month programme to service all council and state land. However private land can be only serviced once they get permission from the owners (Fourie, 16/08/2004).

Since the declared "state of emergency" in the middle of May 2004, a new structure has been set up to deal with informal settlements (refer to organogram below). The Development Support Branch is now the sole programme manager of informal settlement upgrading across the city. Civil engineers working on the emergency provision of services are drawn from various departments. The Sewage Branch has contracted a private consultant from Kwazulu Natal as a "temporary manager", employed to work until the end of September 2004. It is hoped that by then the Housing Department will be ready to assume responsibility as, unlike the Development Support Branch, this department has informal settlement upgrading in their job description. The positions are set up for the Housing Department but are not in place yet (Powell 8/7/04).

The current (September 2004) institutional structure for implementing this emergency level of service is shown in the flow diagram in Figure 2:

Figure 2: Institutional structure for emergency delivery in the Development Support Branch



Line departments were given immediate access to funds to enable the achievement of the goal. By July 2004, overall expenditure amounts to R9, 072 896million within the 2 ½ months of emergency provision of services. R6, 772 659 million was spent on the provision of 2 999 toilets and R2, 300 237 million on the provision of 1 035 standpipes. Of the money for toilet infrastructure, the highest amount was spent on container toilets (1413), then pour flush toilets (976) and flush toilets (543). There were only 67 VIP toilets provided in the Northern suburbs. The type of toilets considered does not include Urine Diversion Systems (an on-site dry system). The average capital cost per toilet is estimated at R2 258 (report 6/7/04 compiled by Powell). All infrastructures provided is shared by up to 10 households per unit, despite the city's Department of Health agreement that a maximum of 4 households can safely share one unit (CCT, draft Health Department Strategy, 2003).

The achievements over the 2 ½ months of emergency implementation program to “eradicate backlogs” were reported by the temporary program manager Pete Arton Powell (8/7/04):

- Water standpipes covered 95% of the informal settlements
- 91% of informal settlements were given access to (shared) toilets
- 98% of informal settlements have been given cleansing services (waste removal)

A positive result emanating from this experience is that the CCT has demonstrated that it is capable of delivering a form of sanitation to informal settlements within a very short period of time, even if these are

mostly shared container toilets and below the minimum health standard by the Health Department (CCT, draft Health Department Strategy, 2003).

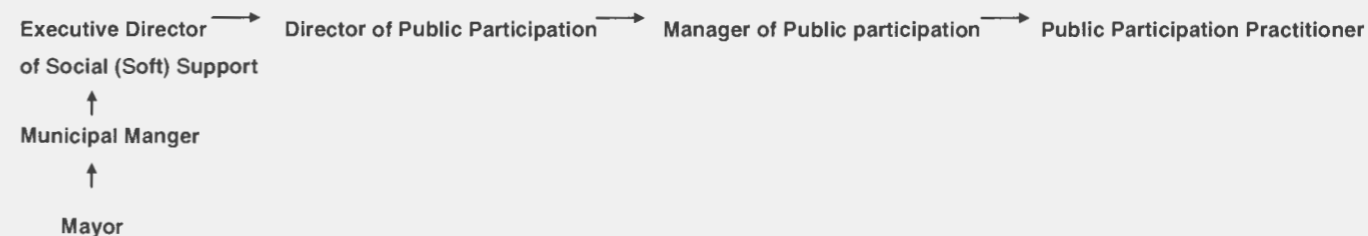
However, on the negative side this strategy could be considered wasteful of resources because container toilets have very high operation and maintenance costs and will have to be replaced anyway. The hasty politically driven strategy does not take into consideration other projects that are happening on the ground or build on previous experience of city officials drawn into the supply driven approach. One of the most frequent criticisms by the Development Support branch staff, who are in charge of upgrading informal settlements until the Housing Dept has enough capacity to take over the programme, is that the Mayor dictated which projects they had to do, interrupting progress on existing projects and programmes.

National policy alignment by city officials who were previously involved in addressing the backlog had drafted an informal settlements policy for internal circulation, which took pains to promote a demand driven, as opposed to supply driven approach. Recognition of policy principles, such as community involvement, are ignored and sidelined in this process.

The City of Cape Town (CCT) municipal offices are in charge of servicing all informal settlements regardless of the Administrative areas within which they are located. For instance, while the Planning Department based in Blaauwberg municipal offices is in charge of formal developments, such as Parklands 4th development, the Melkbosstrand development and Kensington development, which incorporate low-income settlements, the central city departments are running informal settlement servicing as a separate programme.

Apart from technical professionals involved in informal settlement upgrading, there are also social professional structures set up to deal with public participation and health and hygiene education and training. Since **public participation** in informal settlement insitu upgrade projects is a legal requirement, added to the technical structure in the Development Support Branch is a social structure in the CCT that also reports to the Mayor. This structure is set out below.

Fig 3: CCT social structure in informal settlement upgrade projects (Margarite Isaacs & Duke Gumede, Jan 2004)



² Shamiel Thomas is the city official designated to project management in the specific study area discussed later in the document

The Environmental Health Department is involved in education and training, however they are not being fully utilised as yet in upgrade projects in the City of Cape Town.

1.3. THE CITY OF CAPE TOWN'S UPGRADING STRATEGY

1.3.1 CITY OF CAPE TOWN INCREMENTAL APPROACH TO UPGRADING INFORMAL SETTLEMENTS

The table below illustrates the City of Cape Town's current incremental upgrade strategy and details the different levels of service to be provided to different categories of informal settlement.

Table 1: The CoCT Upgrade Strategy and levels of Service

Upgrade Approach	Level of Services and infrastructure
Emergency level of services	Sanitation: 1 container toilet to 10 households Water: standpipe every 200m radius. Maintain a 3m distance between dwellings and 150m distances between fire hydrants. Planning guidelines=Ensure public input in planning infrastructure and create awareness. Relies on volunteerism
Temporary level of services	Sanitation: 1 container toilet p/5 hh; standpipe every 200m radius Water: 50mm leadings where no fire hydrants installed otherwise similar to rudimentary water service levels. Unlined storm water channels Electricity: no electricity and area lighting except under exceptional circumstances Tracks: Where possible 8m wide reserve with a 5m wide stabilised track around perimeter of mega blocks. Internal tracks formed by vehicle usage. Refuse: No refuse removal. Planning guidelines= conventional underlying layout; mega blocks where possible. Env. Guidelines=No approval needed
Rudimentary services	Sanitation: 1 container/VIP toilet p/4 hh; Water: 6kilo litres/month free water from standpipes at 200m walking distance. Grey water disposal areas. Fire hydrants should generally be within 90m of any dwelling (not exceed 150m where possible). Lined storm water channels. Electricity supplied to all hh: Prepayment meters to each dwelling provided to remain for a min period of 3 yrs. Area lighting to suit site conditions. Tracks: 12m wide reserves with 5.5m wide single seal surface within 400m of any dwelling. Internal tracks are 8m wide reserve where possible with 5m stabilised track around perimeter of mega blocks Refuse removal: community base refuse removal in place Planning Guidelines= mega blocks of 60-150dwelling units surrounded by tracks; 50m ² to 70m ² plot sizes; minimal relocation, max density of 130 units p/ha. Env. Guidelines = checklist and scoping; where applicable EIA exemption approval can be obtained.
Full services	Standards set out in ISLP developments (flush toilets, top structure etc.)

(Sources: Interview, Duke Gumede, CCT, 8/7/04; "Framework for Upgrading Informal Settlements in Cape Town: Corporate Approach" CCT, 16/03/04)

1.3.2. THE PROCESS USED TO UPGRADE INFORMAL SETTLEMENTS

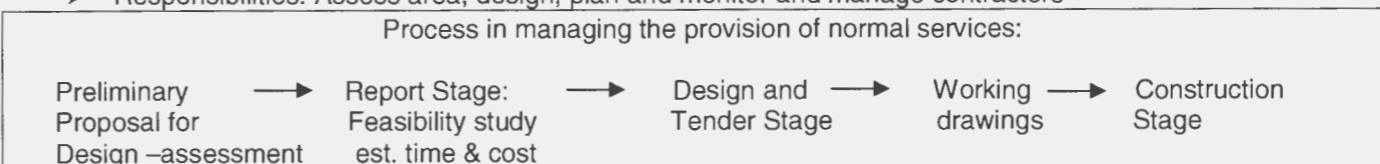
A summary of the protocol that is followed by CCT and details of roles of various stakeholders involved in implementation of upgrading is shown in the sequence and form of the information presented below. This format is reproduced and presented as it was compiled from research conducted earlier this year (Water Research Commission Progress Report number 2, Project no. K5/1438/3, 2004). The information includes data produced from interviews with City officials, appointed Consultants (e.g. Sannitech,

SIZISIZWE) and most importantly the Tender Document that was produced for the appointment of professionals and consultants during 2003.

- **Municipal authorities:**
 - Identify an informal settlement to upgrade. If they can't design in-house they call on consultants.



- **External Consultants:**
 - Municipal authorities hire professional consultants to carry out the management of the project.
 - Responsibilities: Assess area, design, plan and monitor and manage contractors



- Consultant's Brief: the city tells consultants what they want them to do and then the consultants write their own brief including how much the project will cost. Unlike last year, this year they have to write a report on the area before the city will allocate a project budget.
- How much the consultants get paid is based on a % of what the entire project will cost. Refer to appendix 1 for the government Gazette 2003 rating system used in 2003. The lower the whole project costs, the higher the % of the consultants fee: The consultant will get 12.5% if the project costs R800 000 whereas if the project costs R45 000 000, they get 5% of the fee. Rates are adjusted annually.
- Consultants tender by using a Tender Document (contains design specifications). They hire contractors to do the work according to the tender submitted and approved by the city. Consultants must supervise, monitor and ensure that contractors follow instructions and specifications.



- **Contractors**
 - Approval of Tenders takes place within the context of the framework of a Procurement Policy which is governed by legislation. The city may hire either external contractors or local contractors.
 - Tenders are required to provide security within 14 days of written notification of acceptance of the tender. This is in the form of the sum of R10 000, authorized by a recognized financial institution.
 - Contractors are paid on a monthly basis for work that has been completed in accordance with specifications.
 - TradeWorld Company is a consultant who compiles a database for the Western Cape: Tenderers need to register with them if they get selected. TradeWorld rates each company on PDI and ABE status and price.
- Conditions for Targeted Procurement: Based on a point rating system.
- The tender price can get a max. of 90 points and the status of enterprise in terms of ownership (adjudication points) can get a max. of 10 points.
 - Adjudication points are given to:
 - (a) ABE – Affirmable Business Enterprise (7.5 points): At least two thirds of company must be owned by one or more PDI's. The daily statutory business operations and management must be in control of one or more PDI's who own it.
 - (b) WEO – Women Equity Ownership – (2.5 points) companies: Over 25% of Executive directors within enterprise must be women.

(Tender Process: Document 2003)

- **Labourers**



- A Tender document (appendix 3) condition is that contractors employ local labour from the area to form teams of workers. The number of people employed p/area is up to the contractor and the min. pay to local labour should be no less than the minimum requirements of SAFCEC. At the end of temporary employment the labourer is supposed to get a certificate of service.
- According to a consultant (SIZISIZWE, 11/02/2004) the payment of labourers depends on their level of skills, but the minimum is R75 p/day. He added that because of the Procurement Policy in Cape Town they have to disperse employment to give more opportunities to the unemployed.
- Sannitech (Ellios Ganney 29//1/04) pay their labourers a minimum of R76 p/day and their drivers R108 p/day. This is higher than other companies as labourers have been with the company for 5 years and have received

annual increases. Labourers work in the field from 5am-12pm then come back to clean equipment (around 6hrs). They get paid a daily rate. Initially they trained labourers but now new labourers learn through experience of other labourers by working in teams.

As shown above, the protocol and sequence of steps that the City of Cape Town applies in their approach to informal settlement upgrading relies heavily on external professional consultants. The planning and designing phases are drawn out, whereas actual delivery time is relatively brief. The approach that designates management and monitoring externally opens up the potential for gaps to develop between the municipality and the recipients of development and services. This easily creates a situation where accountability and responsibility for delivery by the municipality is one step removed. It is also a costly and time-consuming approach. This may go some way towards explaining the slow and minimal delivery by the city since 1999, especially when compared with the speed and efficiency with which the city has delivered when counting on internal, designated staff in the "state of emergency", discussed further below.

2.5.1. THE STATE OF EMERGENCY

The structure set up for dealing with informal settlement upgrading, which is in place until the end of September 2004, is set out earlier in the document. This structure was formed when Cape Town was declared to be in a "State of Emergency" by the Mayor in May 2004, in which all informal settlements were to be supplied with emergency services by the end of June 2004. This new politically driven endeavour added a new emergency level of service to the City's incremental upgrade process (Powell, 8/7/04).

There are approximately 170 informal settlements of all sizes in the CCT according to 2003/2004 audits. Some may be grouped together to make up a number of 135 informal settlements (Powell, 8/7/04). Although the word is that the city has more or less achieved their goal to service all informal settlements by the end of June 2004 (excluding settlements on private land), they had to drop minimum health standards down to as little as, for example, 1 container toilet for 12 households to share. This defeats the very purpose of providing services such as sanitation as it is unlikely that the daily health hazards created by overburdening infrastructure will be overcome in this way.

While it has been a very expensive exercise in terms of capital outlay this may be justified by the urgency. However, even more expenditure is immediately necessary to operate and maintain the type of toilets provided which are inherently extremely costly. Waterborne systems become frequently blocked (by use of newspaper) and containers have to be collected more frequently the more households that are sharing them (twice a week for 4 households sharing). Only in the case of VIP toilets does the municipality not have to fully subsidize the non-tariff paying clients in undertaking relatively high operation and maintenance costs for as long as the toilets exist.

A ¼ of a million rand has been spent on consultants in this exercise. They went to the extent of drawing on other municipal (Kimberly) capacity to accelerate the supply of container toilets (Powell, 8/7/04). It is questionable whether the Mayor's directive has been beneficial, either to the city or to informal settlement resident clients as it may prove to have resulted in a great deal of wasted resources, of both human and financial capital. The resulting approach has been impelled to ignore both the health and social needs of residents and the imperatives of national sanitation policy and guidelines, and to set aside development local government principles. The major beneficiaries may yet prove to be the professional consultants who were employed during this exercise.

SECTION 2: SITE SPECIFIC ANALYSIS

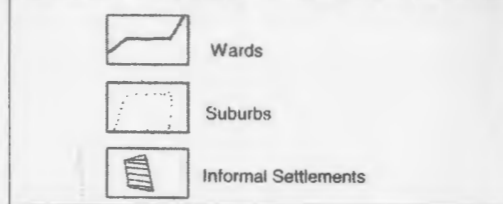
This section is based on the contextual analysis above but moves to a focus on the specific site in question. Largely based on the 1996 and 2001 Census data that was gathered, other information sources include various planning documents and recent audits done by the CCT and Consultants appointed to work on informal settlements in this area.

2.1. INSTITUTIONAL RESPONSIBILITIES AT SITE SPECIFIC LEVEL

In order to implement any project protocol requires that the Councillors, Sub-councillors, Ward Councillors, and the various community forums need to be involved in decision-making with regards to developments. In the CCT there are 20 Sub-councils, each with a number of Wards. The Councillors for each of the Wards in this specific area are all part of the DA party (www.demarcation.org.za). The study area covers wards 2, 3, 4 and 55 – Refer to the map 2 for details and boundaries of the study area.

As can be seen in the organogram of the current structure presented earlier in the document, Shamiel Thomas is the CCT subproject manager (*see footnote: 2*) designated by the Development Support Branch for the provision of basic services to Informal Settlements in the Northern Suburbs. By the 06/07/04, he had overseen the expenditure of a total of R1, 91m on emergency services (Powell, 8/7/04).

Maketha Development Consultants is the only consultant appointed for the provision of basic services for the emergency strategy in the study area. Wyndham Rodel is the area manager for this private company that hails from KwazuluNatal (KZN). The company was involved in supplying a design of an inexpensive top-structure (called Archloo) for a Ventilated Improved Pit-latrine (VIP) system in rural sanitation delivery projects in KZN, gaining experience in mass delivery during the cholera outbreak. The on-site dry system's top structure is built over a sturdy wooden frame with a rounded top for run-off, covered with hessian to complete the form that is then covered with a layer of cement. It was designed by Peter

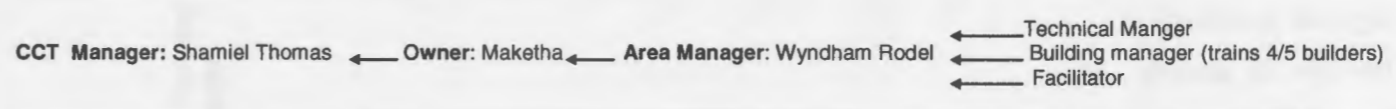


Glover, a professional engineer involved in rural sanitation in KZN, to reduce the costs of delivery in line with the DWAF subsidy (R600 at that time).

As with all VIPs, the structure keeps it dark inside, has a door that must be closed after use and a vent-pipe to extract odors that is covered with fly-screen, all in the interests of keeping flies out (Rodel, 19/07/04). The system is well tried and tested all over the world, approved by the World Health Organization (WHO) and promoted globally by United Nations-affiliated sanitation advocacy groups. The Archloo top-structure is inexpensive to construct and no external contractors are used as community labourers are trained to construct the toilets (*Makhetha Development Consultants Ltd, 2004*). The size of the pit may vary, and in this case is said to have a 10-year usage period for an average of 8 households. A community-based approach to implementation has an education component to allow full community participation (*Makhetha Development Consultants Ltd, 2004*).

This company is 100% PDI owned and have their own engineers, technical staff, social staff and administration staff. The flow diagram below shows the staff set up in the agency.

Structure of project implementation team for Northern Area (study site)



The timeframe for implementation of sanitation projects is about 9 months, as shown in a breakdown below, from a project they carried out earlier in the year (*Makhetha Development Consultants Ltd, 2004*).

- Community training: 2 weeks during mobilization
- Site establishment: during the 2 week mobilisation
- Builders training: 2-4 weeks
- VIP monthly rate construction: 1-month mobilisation period, 40 units in the 2nd month, thereafter 8 to 100 units a month expected.

In this study area the consultant is providing VIP toilets but also pour flush toilets due to the City's preference for them. In the Northern Suburbs, the emergency strategy from mid-May 2004 to the end of June 2004, supplied a total of 227 toilets provided at the cost of R434 704. There were also 21 community standpipes provided to the value of R600 087. This is the only area where VIP toilets were installed along with pour flush/flush toilets and container toilets (*Powell, 06/07/2004*). It is assumed that by the end of September the existing informal settlements will be provided with rudimentary services. After this, any further upgrading will be in the hands of the Housing Department that will hopefully be in place by then.

Greenfield projects in which some of the informal settlements (Kensington 6th Avenue, Melkbosstrand, Spookkamp) have been incorporated into are the responsibility of Martin Scott, the planner based at Blaauwberg Municipality.

2.2. EXISTING APPROACHES TO LOW INCOME SETTLEMENTS IN MY STUDY AREA

The informal settlements in the specific study area include: Skandaalkamp; Tafelzono; Morning Star, Doornbach; Wolwerivier; Melkbosstrand; Ogieskraal; Roodakkies; Tableview Tipsite; Du Noon holding sites and school site; 6th Avenue Kensington (refer to map 4).

Based on the types of upgrading approaches found in the Informal Settlements Handbook (WC DoH, 2003, section 4.2), the table below demonstrates the different approaches that are being used to upgrade informal settlements in this study area. The first two approaches in the table are planned for future upgrading implementation in the study area. All the informal settlements would fit into the basic services or the emergency services approach. The provision of rudimentary services would be the next step to upgrade these services once settlements are deemed more permanent.

Table 3: Upgrading approaches, ownership of land and levels of service to informal Dwelling units

Informal Settlements – grouped in upgrade approaches 1) – 4)	Dwelling units	Site size	Ownership	Approach	Infrastructure
1): Spookkamp	13	373m ²	Public (Vissershok Landfill site)	Rollover/Township (Future)	-
6 th Ave Kensington	62	1284m ²	PHDB	Township/rollover (Future)	5 chemical container toilets
Melkbosstrand	37	1246m ²	Private	Rollover (Future)	-
2): Doornbach	2 122	40435m ²	Private	Possible Insitu upgrade (negotiating)	-
3): Skandaalkamp	248	150m ²	CMC	Emergency services	248 VIP (Archloo)
Tafelozono	25	3217 m ²	Public (Vissershok Landfill site)	Emergency services	6 container toilets
6 th Avenue Kensington	62	1284m ²	PHDB	Emergency services	5 chemical container toilets
Wingfield	6	93m ²	PAWC	Emergency services	2 container toilets, 1 standpipe
4): Morningstar	25	1201m ²	Private	Basic services	5 VIP toilets
Wolwerivier	39	1162m ²	Private	Basic services	8 VIP toilets
Ogieskraal	33	860m ²	Private	Basic services	6 VIP toilets
Table View Tipsite	24	781m ²	Private	Basic services	-
De Noon Holding sites	137	844, 1081, 757m ²	Public/LA	Basic services	330 flush toilets
Du Noon School site	708	9063m ²	PAWC	Basic services	171 flush toilets
Roodakkies	11	671m ²	Public (Vissershok Landfill site)	Basic services	1 VIP toilet

(Sources: Maketha update no. 1350, 16/08/2004; CCT progress on emergency services. 20/7/2004; CCT Audit ,April 2004)

Each of these approaches is discussed in more detail below.

1. ROLL-OVER OR TOWNSHIP DEVELOPMENTS

The following Greenfield sites in my study area have been planned to accommodate low-income settlements: Kensington; Melkbosstrand and Parklands residential developments. Martin Scott at the Blaauwberg offices is working with property companies, and is in charge of planning these Greenfield sites as well as the provision of low cost housing.

The Kensington Greenfield site will provide low-income housing to accommodate 6th Avenue Kensington, Koekoe town and Wingfield informal settlements. Parklands 4th Development Framework are part of a Milnerton Estates Ltd and Aska Property Group (Pty) joint venture development (refer to Parklands Development plan diagram below). This joint venture will be providing low-income housing aimed at relocating the residents of Spookkamp and Rasta informal settlements. The Melkbosstrand informal settlement is to be incorporated in the Melkbosstrand Greenfield development (refer to Melkbostrand development plan below – Fig 4).

According to the Martin Scott, a planner based at the Blaauwberg Administration of CCT Municipality, rights to land have not been allocated due to the restrictions on development until additional sewage works are built (17/07/2004). However, the provision of emergency and basic services to informal settlements, which includes pour flush toilets, has continued. While the informal settlements await relocation, the city is required to provide them with basic services.

Fig 4: Melkbosstrand Development Plan (MLH architects & Planners *et al*, 2002)

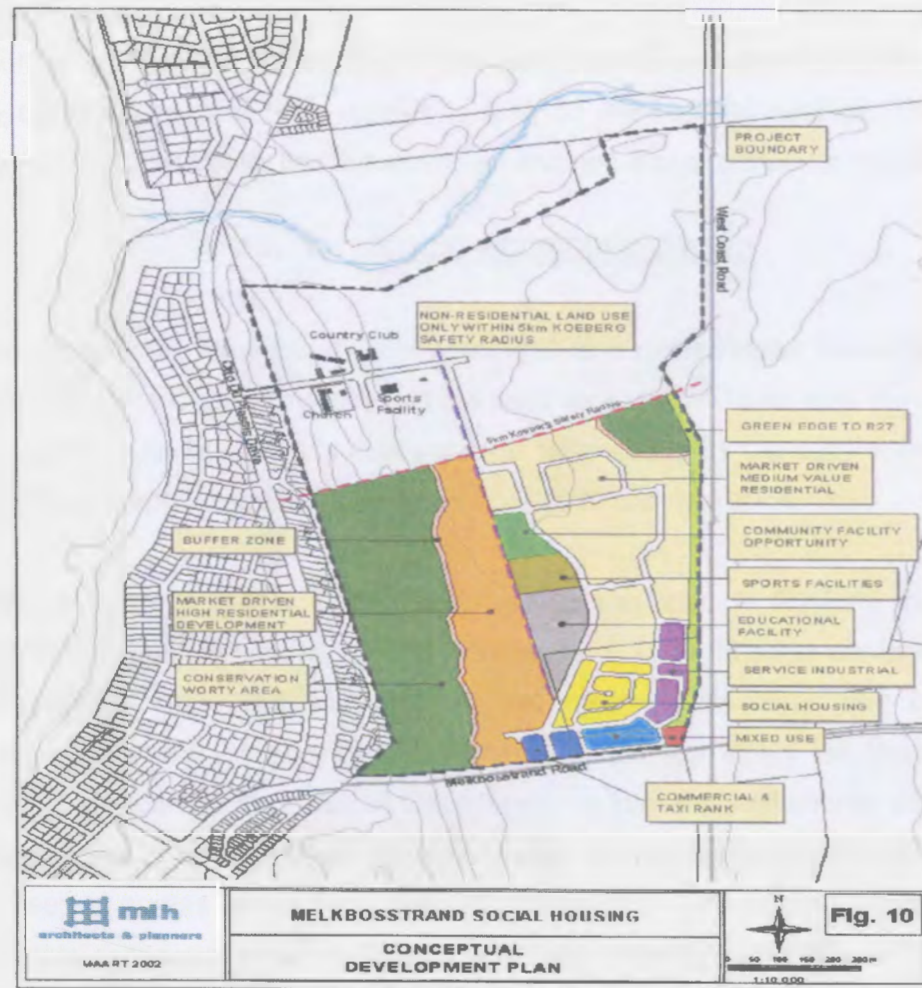


Fig 5: Parklands 4th Development Plan (MLH architects & Planners *et al*, 2000)



2.2.2 INSITU UPGRADE PROJECTS

The informal settlement that has the most potential for insitu upgrading in the study area is Doornbach. At the moment the City is in the process of negotiating to buy the privately owned land on which it is located, and progress in this respect looks positive according to Shamiel Thomas from the CCT (7/9/04). De-densification would be required before any services can be installed as the dwellings are crowded together, making many areas inaccessible to servicing such as waste removal.

Although Witsand is outside the study area, it is the nearest informal settlement within the Blaauwberg municipal boundary that has a permanent insitu upgrade project underway.

2.2.3 EMERGENCY SERVICES

As mentioned earlier, the provision of emergency services has been delegated to the appointed consultant, Makhetha Consulting Ltd. Thus far, the informal settlements in the study area that Maketha has provided, or is busy providing, emergency services to are:

- Skandaalkamp with 248 Du. provided with 248 archloo VIP toilets (public land);
- Visserhok Landfill Site, requiring relocation in 24 months;
- Tafelzono – 25 Du with 6 container toilets, will continue to provide container toilets (public land);
- 6th Avenue Kensington –62 Du, with 2 pour flush toilets, (Land owned by PHDB);
- Wingfield Camp- 6Du, with 2 pre-cast container toilets (owned by PAWC)

(Project progress report, 16/08/2004, project no. 1350, Maketha).

None of these informal settlements are situated on private land, because local authorities are prohibited from providing services on private land unless there is consent from the owner according to Maketha and CCT reports (Project progress report no. 1350, 16/08/2004, and CCT report, 20/07/04).

2.2.4 BASIC SERVICES

As entrenched in basic services policy and legal requirements, un-serviced informal settlements should all have access to basic services, even if given temporary status. Private land remains an issue in this regard, as owner consent is required for provision of services. The informal settlements that are not part of the emergency services Upgrade or Greenfield projects, that also require basic services are:

- Morning Star,
- Ogieskraal,
- Wolwerivier,
- Du Noon³ Holding Sites,
- Du Noon School Site,

³ A confusion in naming of the informal pockets called "Du Noon" within the formalised De Noon settlement will be clarified.

- Rooidakkies,
- Table View Tipsite.

At the moment services, other than the basic and emergency services that are considered temporary, are provided only to communities who have agreed to take on the housing subsidy. Therefore it can be deduced that the thrust of implementation is towards an end result of a formal top-structure.

2.3. SOCIO-ECONOMIC ISSUES

Analysis of the socio-economic situation at a site-specific level is related to the socio-economic context at national, provincial (Western Cape Province) and the local wider Cape Town level that was discussed in Section 1. This chapter is largely drawing data from the 1996 and 2001 Census information and reports generated by the City of Cape Town (CCT) between April 2004 and July 2004.

Du Noon and De Noon are two sites that will be used as examples to illustrate the socio-economic situation in the Northern Suburbs with regards to Census data. There is some confusion about whether Du Noon is the recently formalized settlement or the informal settlement, that comes through in newspaper articles, different plans and reports. The 2001 Census labels De Noon as the informal settlement whereas the reports by the City of Cape Town on informal settlements labels the remaining informal areas as Du Noon (Holding sites and School site) as may be seen in the above City of Cape Town's list. I will keep to names as they are reported. Therefore it is important to note when I am using the 2001 Census data or the more recent City of Cape Town reports as my source. A map is provided that will assist in clarifying the name and status of these sites.

2.3.1. DEMOGRAPHIC TRENDS

The latest Blaauwberg Spatial Development Framework (Planning Partners, 2002) reports that the Blaauwberg area has had the highest population growth rate within the jurisdiction of Cape Town. My study area's population was estimated to be about 97 471 people in the 2001 Census, showing a significant population growth since 1996. In Milnerton alone, over a 4-year period the population grew by 62 968 people (census data 1996 & 2001) as shown in the table below.

It is difficult to calculate population growth accurately due to the many changes that have been made to the Census areas after the 1996 Census. Some of the suburbs within this particular area have changed names, some have split into new areas and some areas were not counted in the previous Census, particularly those in the rural periphery. The table below shows how much the population has increased between 1996 and 2001, with reference to the relatively stable boundaries of Milnerton and Table View.

Table 3: Comparing Census data

Total Population	1996	2001
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Milnerton	18 395	81 363
Table View	4 850	16 987

(1996 & 2001 Census)

Newer residential developments are:

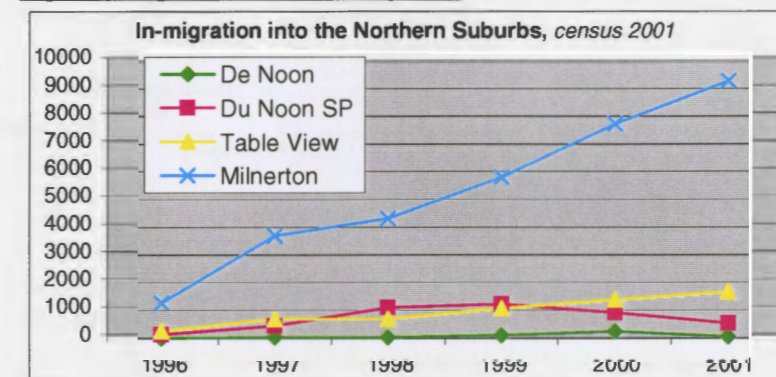
- Sunset Beach to the North of Milnerton (878 people in 2001);
- Sunningdale (1931 people in 2001),
- Blourbergsands and Westridge, which are add-ons to the Tableview area.

Developments that have been planned for future occupation are the extension of Melkbosstrand and the extension of Parklands (Parklands 4th Development) that were mentioned earlier in the document.

Based on a middle migration assumption by Dorrington (2000), the total CCT population will increase from 2.7million in 1996 to 4.3 million by the year 2031. Within the CCT, the Blaauwberg area represents the highest population growth forecast, with the population figures in 1996 calculated at 131 379, projected to increase to 305 753 by 2016, and to 373 580 by 2031 - three time its 1996 population (Planning Partners, 2002). This shows an average growth rate of approximately 6.6% per annum over a 20-year period, and 5% per annum over the 35-year period (Planning Partners, 2002). If high migration figures are included in calculations, the total population in 2031 is estimated at 446 404 with a 7% annual growth rate (Planning Partners, 2002).

The graph below demonstrates which year the most people moved into these suburbs, using 2 low-income areas and 2 middle-income areas to illustrate the trend.

Fig 6: In-migration into the study area



In the above graph, it can be seen that most movement into the Northern suburbs has been steadily increasing since 1996, reaching its highest point in 2001. The lower income areas show the most movement into the area between 1998 and 2000, with a decline in 2001.

Overall the majority of residents in the selected sites are South African citizens, however there are a small percentage of European citizens residing in the higher income areas (2% in Milnerton and 4% in

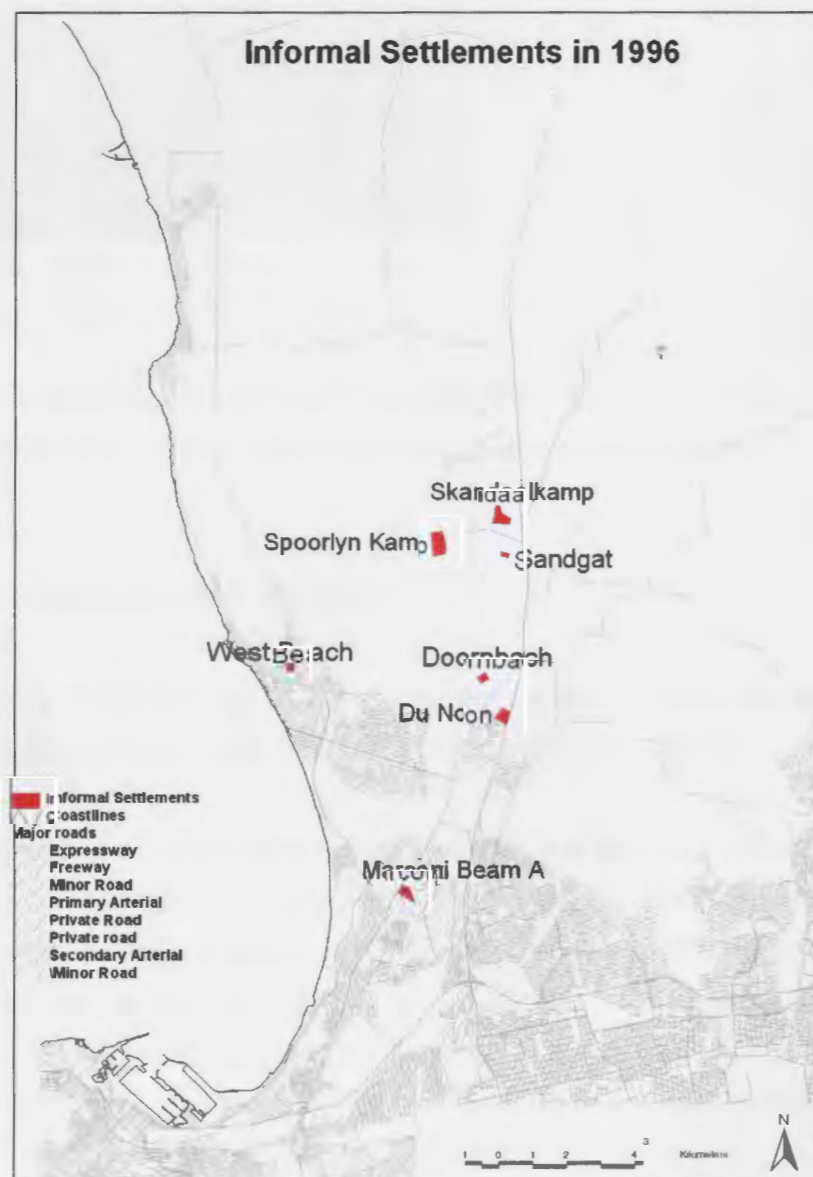
Table View). In De Noon and Du Noon (low-income areas) apart from those residents from the Western Cape, the majority of the population indicated that their province of previous residence was the Eastern Cape (26% in De Noon and 18% in Du Noon). Comparatively, in the higher income areas more people indicated their previous residence as the Western Cape, while Gauteng was the next highest area of previous residence (6% in Milnerton and 8% in Table View).

Informal settlements in the study area are generally not large in themselves. The largest informal settlement in my study area is **Doornbach** (2 122 du situated on private land in ward 3), followed by **Du Noon School Site** (708 du situated on PAWC land in ward 3), **Skandaalkamp** (157 du situated on public land in ward 3) and **Du Noon Holding Sites** (an estimated 137 du situated on public land in ward 3). All the remaining informal settlements contain fewer than 100 dwelling units (audit done in April 2004). These are also the oldest informal settlements (2004 audit). The other informal settlements that were

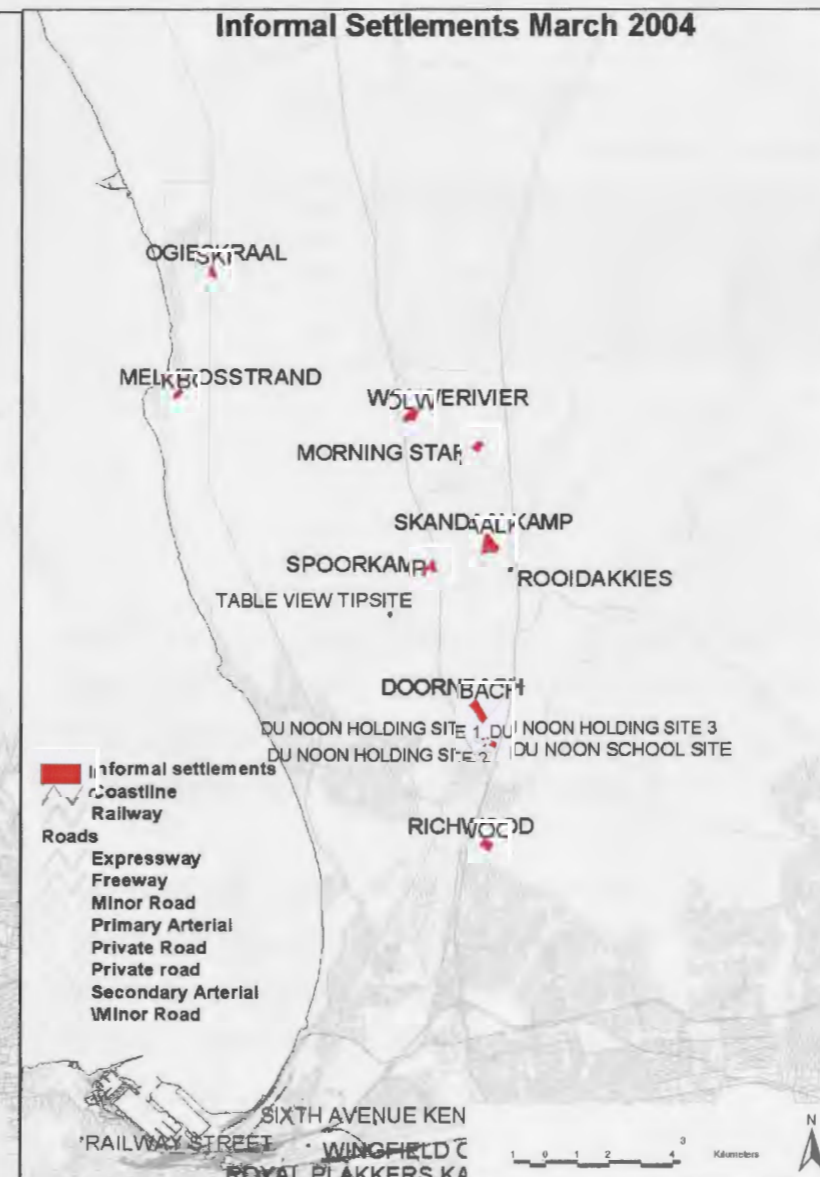
indicated in 1996 have either been removed or upgraded to formal status (refer to maps 3 & 4).

It is very difficult for local authorities to keep track of informal settlements generally, as they are dynamic and can change within a very short period. In the Blaauwberg area the number of informal settlements has increased since 1996 when there were 7 Informal Settlements identified in the study area, whereas in March 2004 there are now 16 identifiable informal settlements (refer maps 3 & 4).

Map 3: Informal settlements 1996



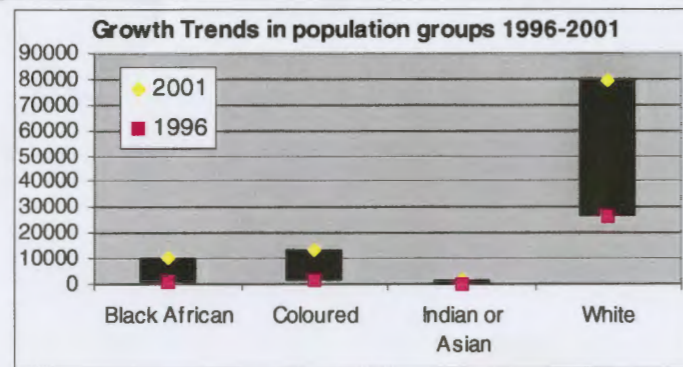
Map 4: Informal settlements 2004



As the study area is mostly made up of middle to high income settlements, the graph below (Fig 7) combines Milnerton, Table View, and Brooklyn, to illustrate an estimation of population growth trends among white, black, Asian/Indian and coloured population groups.

Within the study area the majority of the middle to high-class residential areas have shown the most growth in the white population. This is also the case in areas where new developments are occurring, such as in Sunset Beach where 84% of the population is white (2001 Census). Although the highest growth has been in the white population in areas such as Table View and Milnerton (see Figure 7 below), the percentage of non-whites has also increased in these areas. For example in Milnerton, non-whites increased by 20% from 1996 to 2001. This is illustrated in the graph below (1996 and 2001 Census).

Fig 7: Growth Trends in population groups - Census 1996 & 2001



However, the low-income areas such as De Noon (formal low-income housing) and Du Noon (informal settlement) remain predominantly a black population of 90%, with 10% of the residents being coloured (2001 Census).

2.3.3. INCOME AND EMPLOYMENT

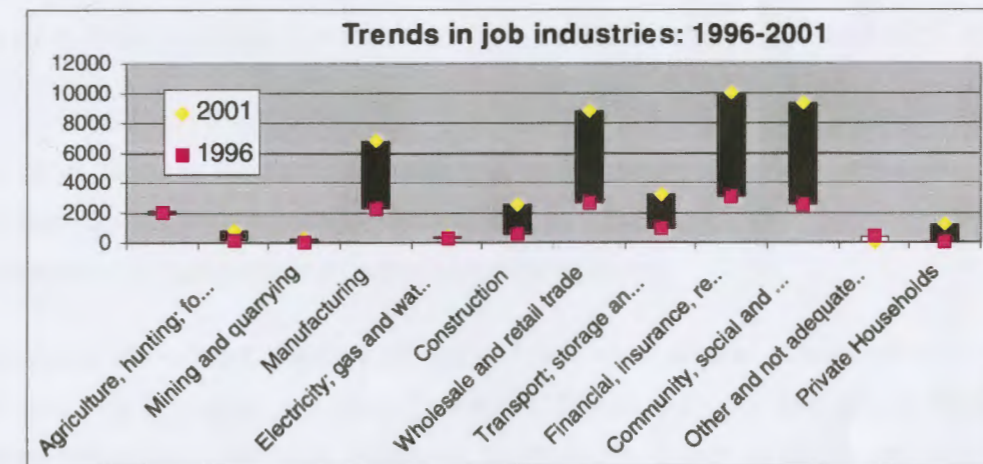
A spatial layout of unemployment levels are shown in **Map 5**, as well as an indication of how annual income levels differ between the lower to higher income areas. Map 5 is based on the 2001 Census.

Map 5 shows that the highest unemployment and lowest annual income levels are found in informal settlements. As De Noon was part of the 2001 census, it is used as a case study for other informal settlements. In De Noon, of the economically active population, only 16% are formally employed and 90% of the households earn below R19 200 per annum (R1 600 per month) or have no income (2001 Census). This situation is similar to that experienced in most informal settlements in the CCT. A recent study on informal settlements located along the N2 highway, reports that 85% of the households earned annual incomes that are less than R19 200 or R1 600 monthly (Napier, 2/6/2004).

Low-income settlements that were upgraded from informal settlements, such as Du Noon, display the next lowest annual household incomes (79% no income, or below R19 200p/a) and employment levels (40-60% unemployment). Then there are areas such as Brooklyn with 20-40% unemployment levels and dispersed annual income levels with over half the population earning above R19 200 p/m (61%). These areas are generally located near the Industrial areas. The majority of the suburbs in the study area are middle to high income areas with under 20% unemployment and over half the households earning above R76 000 p/a (Refer to map 5).

Trends in employment industries between 1996 and 2001 was acquired by combining data from Milnerton, Table View and Brooklyn as representative of the study area. The graph below shows that the highest growth was in the Financial, Insurance and Retail industries; Community, Social and Personal Service industry; and the Wholesale and Retail trade industry.

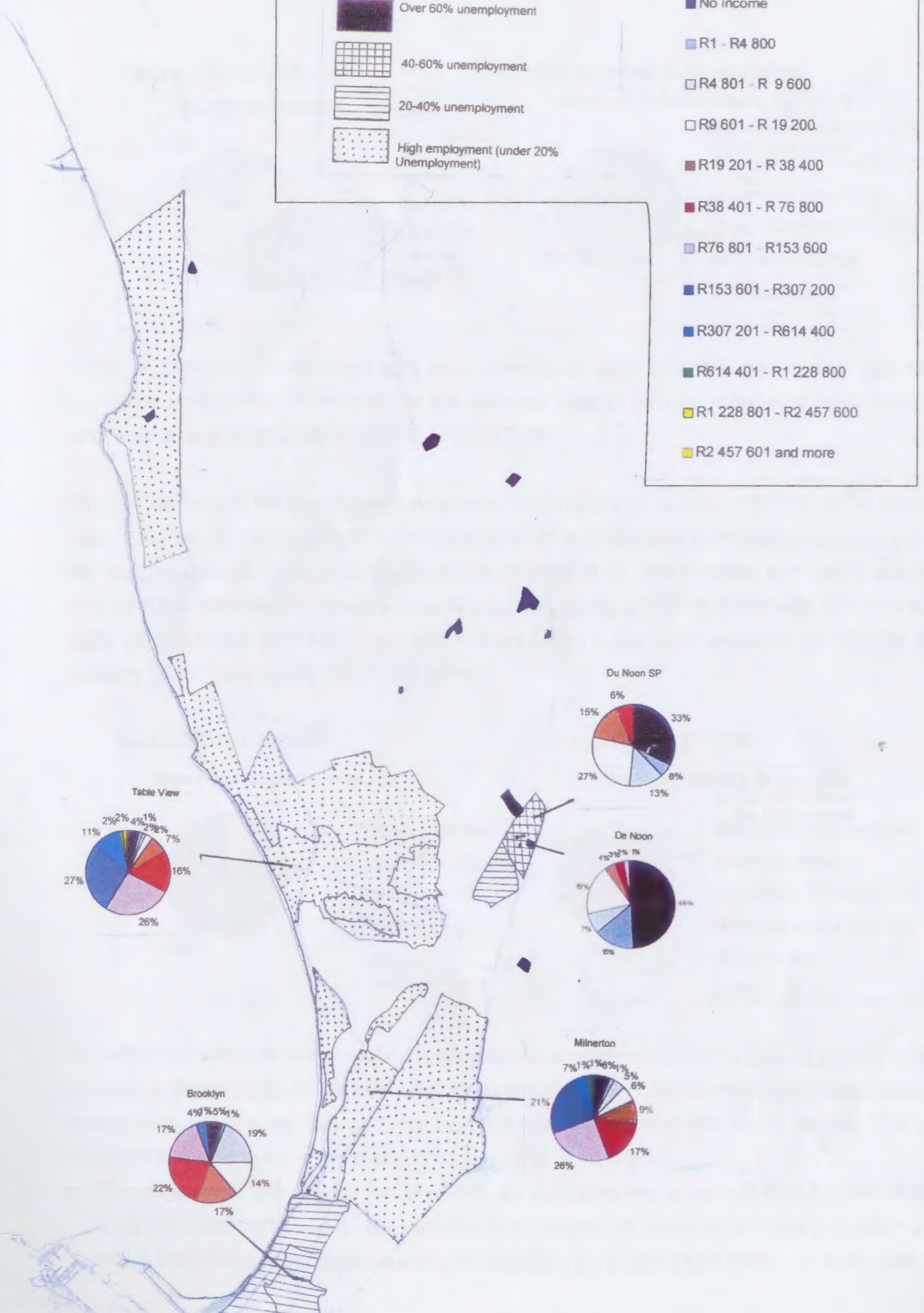
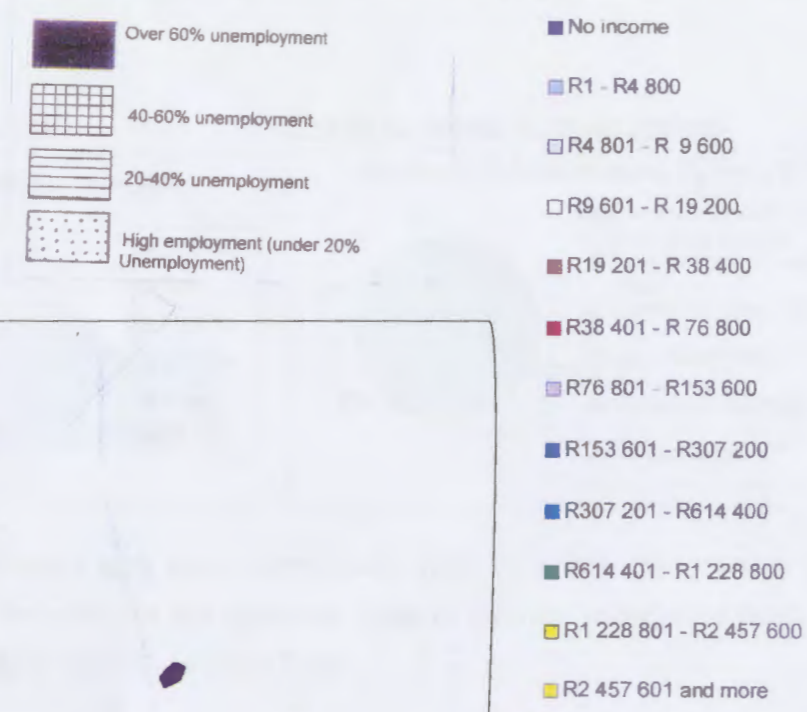
Fig 8: Trends in job industries



Mainly middle-income "white collar" workers reside in Table View, although there are limited work opportunities available within the study area. Most employment destinations fall outside the area. Therefore there is a strong flow of commuter traffic by private car, going south in the mornings and north in the afternoons (Planning Partners, 1996).

As mentioned earlier, informal settlement upgrade schemes may now include the generation of employment opportunities for the lowest income earners and the unemployed as part of the development or service provision. Through government initiatives such as the Extended Public Works Programmes coupled with education, training and SMME support, residents of low-income settlements may now have access to more economic opportunities.

ANNUAL HOUSEHOLD INCOME UNEMPLOYMENT LEVELS



At provincial and national level there are also policy initiatives relating to agricultural holdings that can be utilised for job creation initiatives. The "Policy for the Establishment of Agricultural Holdings in the Urban Fringe 2000" is an initiative that aims to create opportunities for aspirant farmers to access land and develop agricultural holdings in the urban fringe (Planning Partners, 2002). Such opportunities are referred to in the earlier section of this document.

2.3.2. BASIC SERVICES

A study conducted by Napier (Napier 2/6/2004) based on Census 2001 data on the strip of informal settlements along the N2 in the CCT, demonstrated that Cape Town is far behind in basic service provision relative to National and Provincial data.

Napier's study showed that in these informal settlements only 27% of households had access to electricity for lighting, whereas the use of electricity for lighting in the Western Cape stood at 88%, nationally at 70%. Less than 3% had access to adequate sanitation (anything above a bucket) compared to 86% in the Western Cape and 54% nationally. Less than 3% of households had access to drinkable water on site or in their dwellings compared to 85% in the Western Cape and 61% nationally (Napier, 2/6/2004).

Although the drive towards service provision has been given increasing emphasis since 2001, the breakdown of data on the low-income settlement of De Noon in the 2001 Census, still gives an idea of the situation experienced generally in informal settlements today.

Informal settlements throughout the City of Cape Town have similar characteristics in terms of basic services. The proximity of energy suppliers Eskom and Koeberg means that access to **electricity** is less of an issue than other basic services. However, there is still a lack of access to electricity in informal settlements, largely due to the status of land and affordability. One of the safety issues related to a lack of electricity in informal settlements are the frequent fires that occur due to use of candles and paraffin. Area lighting in informal settlements also serves to help combat crime. Frequently destruction of homes by fire are reported in the media, as in the recent Weekend Argus newspaper (Leon Lestrade, 17/07/04) report that 40 homes were destroyed by a fire in the Du Noon informal settlement. The 2001 Census (refer to pie chart) showed that only 11% of the informal population had access to electricity.

Refuse removal is another basic service required for people's health and quality environments. In the case of De Noon, more than half the population (63%) has access to government refuse removal services at least once a week (refer to pie chart) and 30% use their own self-made refuse dumps.



Figure 9: Sources of Energy

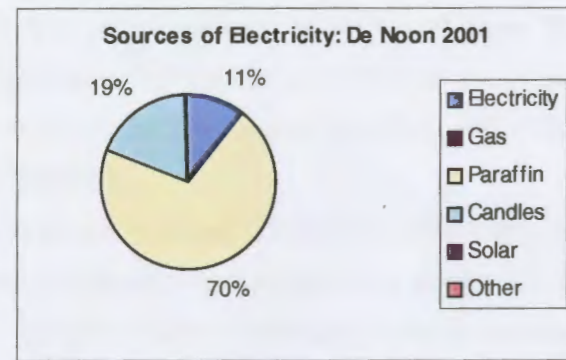
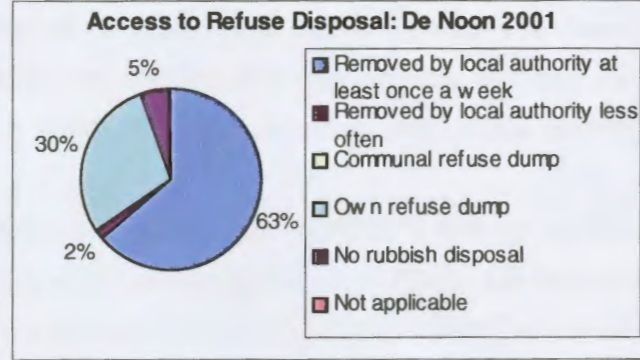


Figure 10: Access to refuse disposal



Types of sanitation infrastructure and water connections may vary with the physical (geo-technical) conditions of each site. At the moment the dominant drive is towards waterborne flush toilets with an emphasis on pour flush toilets in the City of Cape Town.

This can be seen in the 2001 Census data (refer to pie chart) on sanitation facilities in De Noon, where 40% of the people had access to flush toilets (shared) and 25% to unventilated pit latrines, with rest of the population without access to any sanitation facilities at all. The Northern Suburbs is suburb in the CCT in which the most VIP toilets are being provided. As far as I know, there was no formal supply of water reflected other than from rivers and streams (14%) in the 2001 census (I am not sure what the category "other" is indicating in the 2001 census).

Fig 11: Main water supply

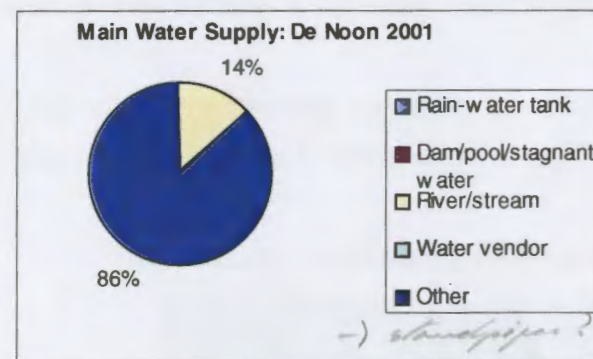
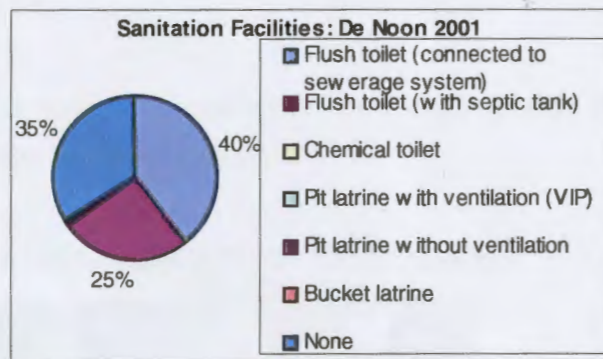


Fig 12: Sanitation Facilities



As mentioned earlier, Maketha is the private consultant employed in CCT's drive to provide emergency services to informal settlements in my specific study area. Although informal settlements legally require access to basic services, this can only be done with the owner of the land's consent. The informal settlements listed below are part of the emergency provision program.

➤ **Skandaalkamp:** 248 archloo top-structures on VIP toilets are to be built for 248 informal dwelling units (Maketha 16/08/2004). This settlement is situated on public land in Ward 3 within the 50m radius from Visserhoek dumpsite and must therefore be moved (April 2004). In April 2004, 32 VIP

toilets in this site were costed at R63 712 for materials and R32 000 for labour (CCT report, April 2004). On-site construction of toilet structures by local labour has been noted as being time consuming. There is no electrification as the site is not secure for over 3 years, and Solid Waste removal has an integrated full service planned (20/7/04).

- **Tafelozono:** 25 dwelling units share 6 container toilets. Container toilets will continue to be provided (Maketha, 16/08/2004). This settlement is situated in Ward 3 on the public land of Visserhok Landfill site. It has 24 months to be relocated (CCT report, 20/07/2004). There is no electrification as the site is not secure for over 3 years (CCT report, 20/07/04).
- **Sixth Avenue Kensington:** 12 pour flush toilets have been provided to 62 dwelling units (Maketha, 16/08/2004). The land is owned by PHDB in Ward 54. In April 2004 there was one standpipe with another planned for, no fire hydrants, no tracks and no electricity. There is a proposal to relocate occupants Kensington Greenfield site (April, 2004).

All the rest must still be provided with basic services, even those settlements that have been pinpointed for relocation to Greenfield projects. The list below provides an update on the basic services that have been provided to date (September, 2004).

- **Spookkamp:** Consisting of an estimate of 13 informal dwellings it is settled on private land in Ward 3. The owner's consent to service provision was only recently received and as a result bulk service provision is underway. There is no electrification (20/7/04). 2 VIP toilets were proposed for the site at the cost of R3 300 (40% complete) in April 2004. It will form part of the low-income Parklands 4th Greenfield development
- **Melbosstrand:** This settlement consists of 37 dwelling units (2003 audit) and is owned by the city in ward 2. 5 VIP toilets are proposed for this population of material value of R4 250 and (April 2004) standpipes however no installation has started as the owner's consent has not been acquired yet. Existing water is available within 200m to 400m off property (July 2004). This settlement is going to be incorporated into a Greenfield site just above it and the R27.
- **Morning Star:** This informal settlement has an estimate of 25 dwelling units (2003 audit) situated on private land in ward 2. Of the 5 VIP toilets were proposed for this site in April 2004, 40% of these are complete by July 2004. No bulk services exist in the vicinity (July 2004). A tanker provides water weekly. Recently Morning Star was fenced in by the farmer who owns the land leaving no direct access routes into the site (Field visit on the 14/10/04).
- **Ogieskraal:** This informal settlement is situated on private land in Ward 2 with an estimate of 33du. 6 VIP toilets have been provided (April 2004), however the owner's consent is required for installation of additional VIP's as the residents are too far away to provide services along the boundary (July 2004).

- **Wolwerivier:** This informal settlement is situated on private land in Ward 2 with an estimated 39 du. 8 VIP toilets valued at R13 200 were installed. However the owner's consent is required for installation of additional VIP's as the residents are too far away to provide services along the boundary. Water tanker supplies water (April 2004). No bulk services exist in the vicinity (CCT, 20/07/04).
- **Du Noon Holding Sites:** This settlement is settled on public land in Ward 3 with an estimated 137 du. 15 shared flush toilets have been added to the 315 existing ones (April 2004). De-densification is required for full rudimentary services provision, and no electrification will be provided as the site is not secure for over three years (CCT, 20/7/04).
- **Du Noon School Site:** This settlement is on PAWC owned land in Ward 3 and consists of 708 informal dwellings. 156 flush toilets have been provided and 15 are proposed (60% complete) (April 2004). De-densification is required. No electrification is planned as the site is not secure for over 3 years (CCT, 20/7/04).
- **Rooidakkies BD:** On public land in Ward 3 there are an estimated 11 informal dwellings. 1 VIP toilet is proposed for them at the cost of R1 650 with labour costing R18 000 (60% complete) (CCT, April 2004). Relocation required – 24 months. No electrification is planned as the site is not secure for over 3 years (CCT, 20/7/04).
- **Table View Tipsite:** There are 24 informal dwellings situated on private land in ward 3. 3 VIP toilets have been provided at R4 950 (CCT, April 2004). Owner's consent only received on 2 Jul 2004 and provision of more services is underway. There are no bulk Services, no and no electrification, however they do have a water tanker (CCT, 20/7/04).

The most common toilets that are being provided, as rudimentary services in my study area at present are either pour flush toilets or VIP archloo toilets - Refer to photos below.

Figure 13: Photo's of the types of toilets presently being provided to Informal settlements by CCT



2.4. SUSTAINABLE GROWTH

When considering where to either propose new developments or upgrade existing low-income settlements, restrictions to development need to be taken into account. This chapter deals with such considerations and restrictions.

2.4.1. NATURAL LANDSCAPE

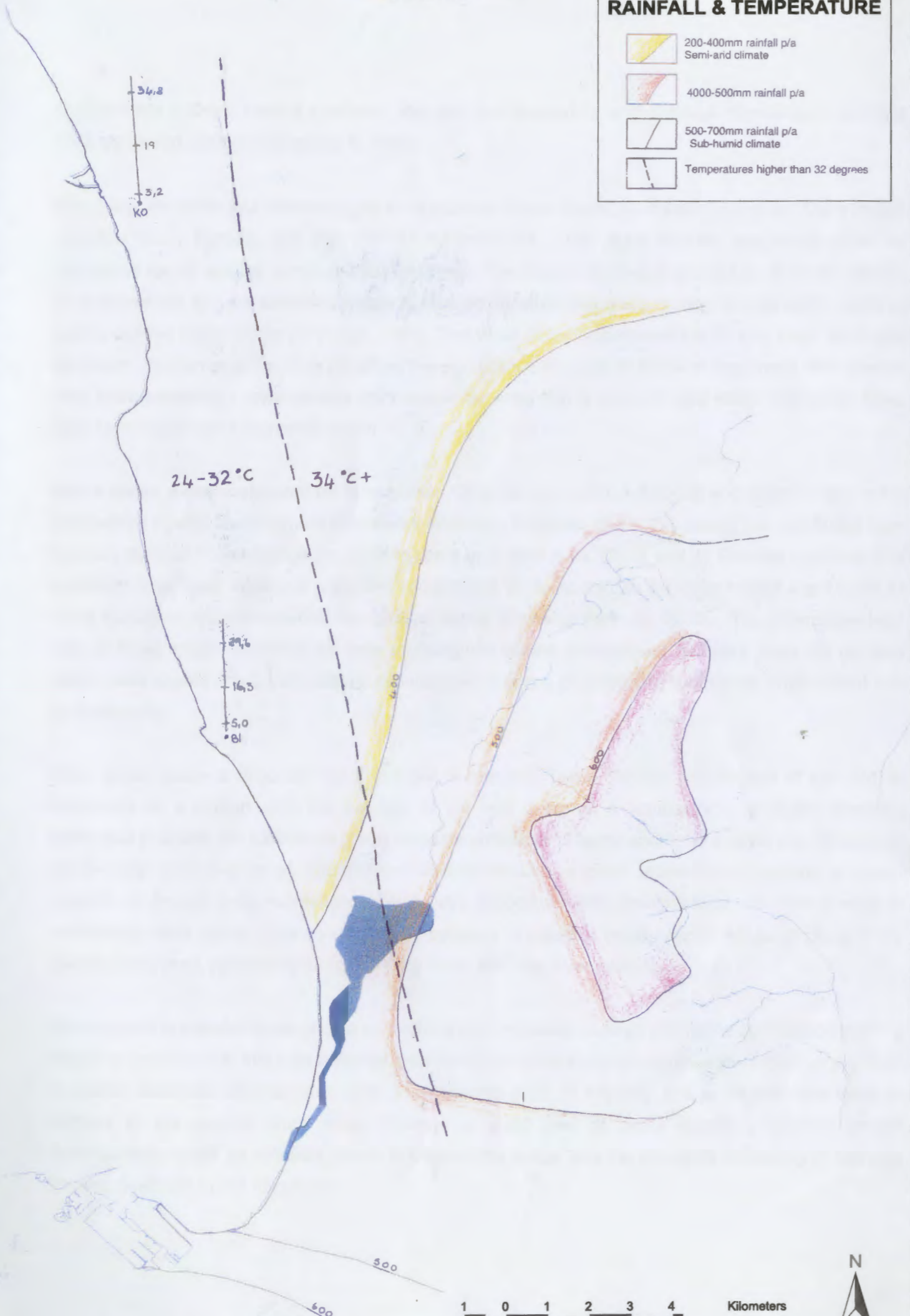
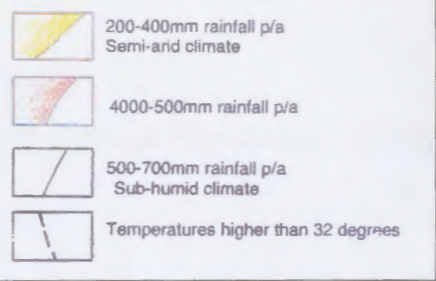
This section indicates that urban growth in the study area is presently environmentally unsustainable. There is also a sense of monotony that contributes to a lack of sense of place. Environmentally significant areas and public open spaces need to be legally identified and prioritised.

2.4.1.1. Climate

Climatic conditions play a major role in determining where different vegetation types occur and where land is more likely to be arable. Rainfall has a particular influence on developments due to run-off that may cause flooding. Temperature also has a significant influence in how structures are built so that these will accommodate warm or cold weather. The temperature and the rainfall level are shown on map 6. On the map it can be seen that the majority of the study area is semi-arid with 200-400mm rainfall per annum, while the lower section from around Ward 4 and southward gets 400-500mm rainfall per annum. Temperatures are also higher to the north of the site and to the east of the area depicted in the map 6.

A recent Landscape Architect's project in 2003 (Von Zeil et al, 2003) ^{suggested that it is necessary} needed to take the following climatic factors into consideration when choosing Greenfield sites in the specific study area. Proximity to marine influences and the cooling effects of winds on the wetlands ensures a lack of extremes in hot temperatures. However, in calculating the chill factor effects of the prevailing and katabatic winds (nightly winds which descend from the mountains) that flow across the flat coastal plain, temperatures of -10°C are not uncommon in the winter months. Buildings should thus have 'Preferable Facing Conditions', especially dwellings is Northeast. (Von Zeil, et al, 2003).

RAINFALL & TEMPERATURE



2.4.1.2. Protective landscape

The natural features of the landscape are important to determining where development should not go. Although the maps below demonstrate areas of environmental significance, some areas would have to be compromised to accommodate population growth. To avoid the most significant environmental areas from being developed upon and damaged, it is important to designate those which are the most important to protect in order to apply policies and legislation that are stringent and effective in these areas. There should also be areas designated for conditional development.

An important environmental law in South Africa that determines where settlements should not go, is the National Environmental Management Act (NEMA) no 107 1998, which is the first Act to recognise the new constitution. Most importantly, NEMA provides for integrated environmental management through establishing principles for decision making about the environment throughout the Republic and spheres of government. Any area proposed for development requires an Environmental Impact Assessment (EIA), (Ogle, 2003).

Additional legislation that may be applied is the Biodiversity Bill that aims to, "provide for integrated biodiversity planning and to monitor the conservation status of the biodiversity, to regulate threatened or protected and alien and invasive species and to allow for bio-prospecting access and benefit sharing" (Ogle, 2003:19). The Protected Areas Bill provides for the management of protected areas through co-operative government and applies to all areas in South Africa except those managed under the National Forests Act and Marine Living Resources Act (Ogle, 2003).

In the previous Cape Metropolitan Council's Catchment Management Unit (Caleb *et al*, 2000), policy flood-line guidelines were: no development within 10-40 meters of existing river banks depending on size and ecological status of a river; below 1:50year flood-line no building must be constructed; and no building floor slabs may be below the existing 1:100year flood-line.

Map 7 depicts: the existing protected areas and the existing Botanical Society Priority Areas; the different vegetation types; and rare plant species as well as flood-lines (GIS department, 2004).

Areas that have conservation status are: the Blaauwberg Conservation Area which contains the only shale derived hills in the area (Blouberg ridge) (GIS dept, 2004); the Diep River which is part of the Wetland System and in the process of being proclaimed a conservation area; and Rietvlei PNE (BSDF, 2002). There is one private nature reserve, the Koeberg Private Nature Reserve. There are also Botanical Society priority sites to the South around Rietvlei (see map 7). Rietvlei is one of the three

Ramsar Sites in Cape Town (Langebaan, Rietvlei, and Rondevlei), and although mismanaged, are in a more conserved condition (Gasson, B. 1989).

Map 7 also identifies four different types of vegetation: Dune thicket; Sandplain fynbos and Dune thicket transition zone; Fynbos; and West Coast Renosterveld. The dune thickets are found either on calcareous sands, shallow sands or over limestone. The Transition zone is situated on Greenfield acidic to neutral sands, and the sandplain fynbos is situated on either inland non-marine derived acidic sands or marine derived acidic sands (GIS dept, 2004). The West Coast Renosterveld is on clay loam, loam and sandloam. Furthermore, the map identifies the significance of areas in terms of how many rare species have been identified. I have divided the number identified into 5 levels to help determine which areas have more significance than other areas.

Map 8 shows areas designated for Metropolitan Open Space Systems (MOSS) and Urban edges in the Blaauwberg Spatial Development Framework (Planning Partners, 2002). The power line servitudes from Koeberg Nuclear Power Station are used to serve as a links in MOSS as well as Riverine corridors. The coastline, botanically important sites and recreational areas should all be incorporated into MOSS to serve ecological, educational and recreational needs (Planning Partners, 2002). The information from both of these maps combined will help to designate where development definitely must not go, and where there should only be conditional development in terms of preserving the natural environment and its biodiversity.

Open green space is important for a number of reasons. These include: the function of soil and its vegetation as a carbon sink; the function of the tree cover as a 'atmospheric scrubber' removing particulate pollution; the function of green areas as protectors of fauna and flora; and the maintenance of bio-diversity (Von Zeil, *et al*, 2003). Open spaces should be given recreational functions wherever possible to ensure their maintenance. Walkways associated with river systems are useful ways of maintaining open space. This concept could be used to create a much-needed sense of place in my specific study area, particularly along the Diep River and Salt River systems.

Development in **coastal areas** should be avoided and preferably used as part of the open space system. Imposing constraints in this area is crucial, particularly because these are prime areas for tourist and high to middle residential development. With developments such as Big Bay, this is an important issue to address in the specific study area. However a great deal of detail regarding suchlike private developments would be required, which is beyond the scope and the concerns pertaining to low-cost housing dealt with in this document.

The **Topography** is largely flat other than the Blouberg – Oliphantskop ridge rising well above the coastal plain and some remnants of broken dune terrain. The ridge is within a protected area, thus development cannot occur there anyway (refer to Biological map 7). Therefore the main topographical issue in my specific study area would be with disposal of surface water and waterborne sewage, both, which are gravity-controlled (Wilkinson *et al*, 1979).

2.4.1.3. Productive Landscape

Another feature of the landscape where development should be constrained is concerning arable land for agriculture. In terms of salinity and groundwater potential, the area where the best agricultural land is located is noted as being just above my study area in the North East.

The following information is extracted from the 'New Farmer pilot project land identification report' (Setplan *et al*, 1998) that reported high salinity run-off as restricting utilization of surface water run-off in the southern and eastern portion of study area. While surface run-off in the northeastern portion is limited, it is noted to be of good quality and presents opportunities for small dams. They also reported that ground water within the study area generally had a lower potential and poorer quality, while individual boreholes presented higher yields of good quality water.

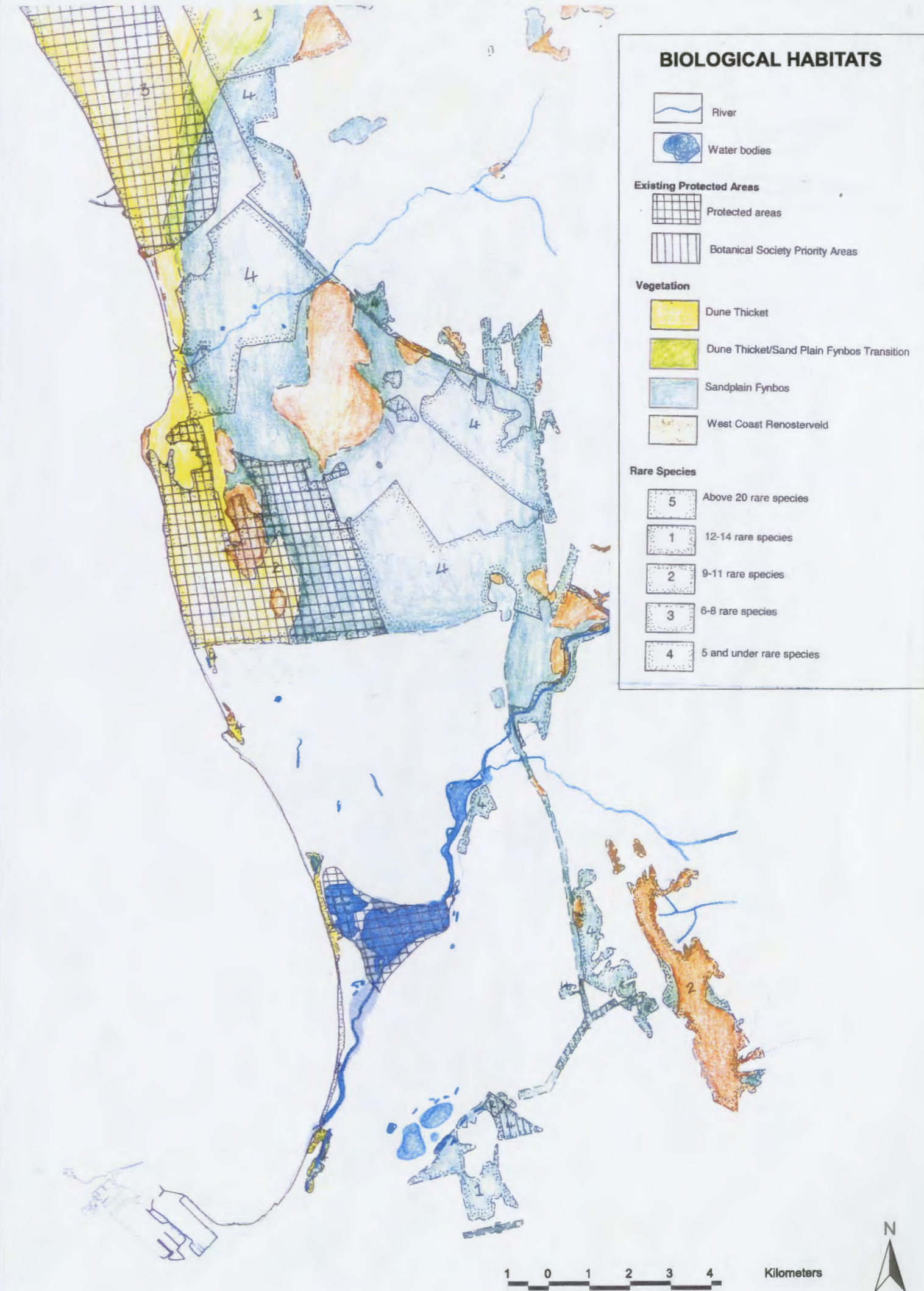
The quality of arable land is largely related to types of soil ratings. The agricultural potential of the soils of the study site are reported as generally medium-low to low (Planning Partners *et al*, 1996). This is related to the geology of the study area, which consist of mainly shale's and limestones overlain with sand deposits. With the exception of the Sout Rivier Drainage area that contains clayey soils, sandy soil types that have a poor moisture holding ability and are highly vulnerable to wind erosion when exposed, occur across the area. Exploring the agricultural potential in the specific study area further, the studies done by Setplan *et al* (1998) and reported in the 'Land Identification Report (New Farmer Pilot Project)' is drawn on. The major portion of my specific study area, largely due to prevailing climatic conditions, soil types and limited irrigation water is suited to dry land cultivation crops (e.g. wheat, oats, barley), with associated livestock production (e.g. sheep, poultry or dairy production).



Map 9 shows the level of soil potential for arable land as well as existing agricultural and smallholding land uses, as it appeared in 1998 (Setplan *et al*, 1998). Small-scale commercial agriculture is concentrated within Klein Zoutrivier (1) and Morningstar (2) small holding areas (Setplan, *et al*, 1998). Both have been indicated as having inappropriate land-use due to poor agricultural potential. Furthermore, Klein Zoutrivier is within the 5km Koeberg safety zone and Morningstar is negatively impacted by the waste disposal site of Visserhok outspan, which needs an adequate buffer to

Morningstar. Both Morningstar and Visserhok are subject to informal settlement encroachment (Setplan *et al*, 1998).

According to Setplan *et al* (1998) the majority of the restrictive conditions of soils and water supply suitable for agriculture can be overcome with appropriate technology (e.g. soil improvements) and niche market development (e.g. yoghurt, organic vegetables). However, it would be preferable to use the land that is already best suited for agriculture and avoid such measures that require capital investments and involve a great deal of risk.

When analysing potential arable land it is crucial to keep in mind that this area is the fastest growing urban area in the CCT and urban development is putting a great deal of pressure on the surrounding landscape. It is important to accommodate both the natural and urban environment as much as possible. Sometimes the natural environment will have to be compromised, which is why it is imperative to identify different levels of protection to apply, ranging from high protection to conditional protection.







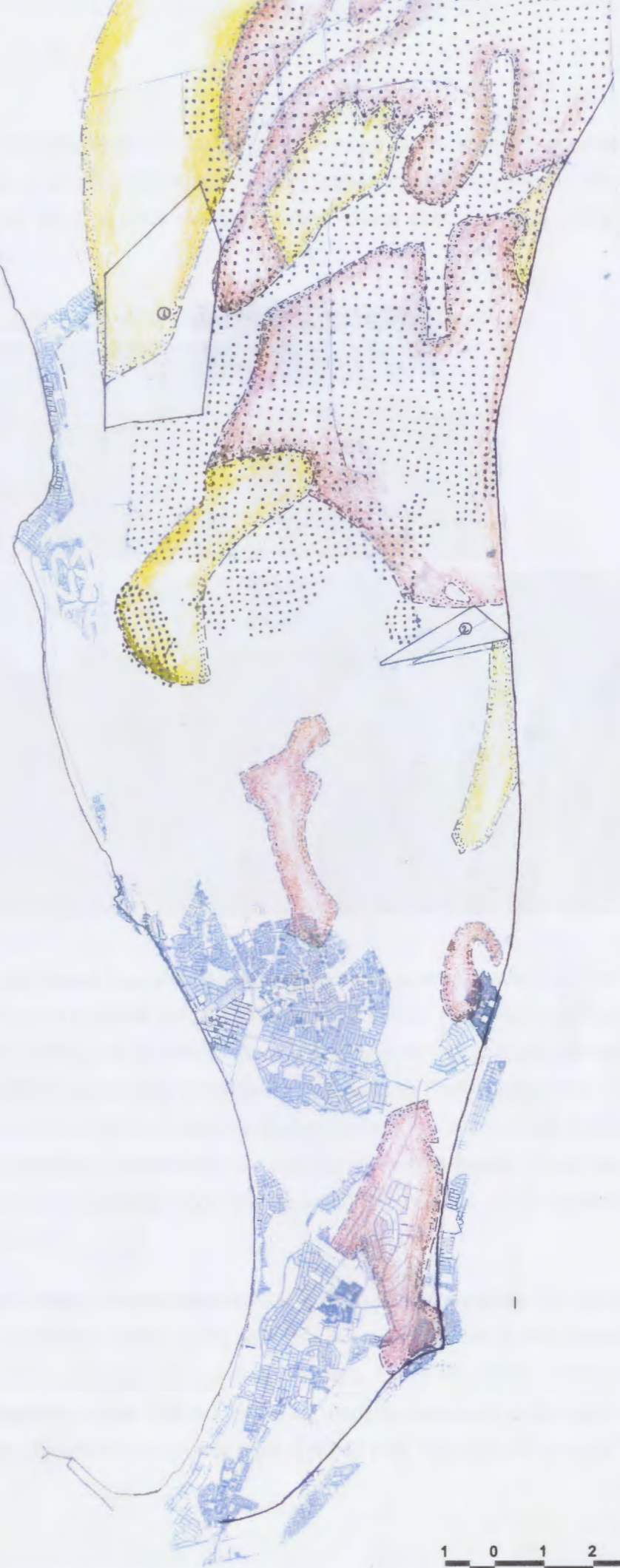
 MOSS (Metropolitan open space)
 Urban Edge
 from in order for it to be compacted



1 0 1 2 3 4 Kilometers



Soil Potential
 Medium
 Medium to Low
 Existing smallholdings
 1=Klein Zoutrivier
 2=Morningstar
 Existing Agriculture:
 Wheat/Fodder production



1 0 1 2 3 4 Kilometers



2.4.2. SAFETY RESTRICTIONS

Map 10 indicates the areas that have safety restrictions against residential settlements that have resulted from man-made developments in the area.

The first are the safety restrictions imposed by the presence of the **Koeberg** nuclear power station. The restrictions are described in more detail below (Planning Partners, 2002) and shown in map 10.

- 5km zone: development of existing rights and power station related development only,
- 5-10km zone: Population increases subject to density and development control,
- 20km zone: A max population of 650 000 people within this radius.

In determining whether the existing and proposed transport infrastructure is adequate to cope with rapid evacuation in the event of an emergency, the proposed East–West link road north of Table View and the North-South corridor along the railway line are both located within lower risk zones (Planning Partners, 2002). The reason why the informal settlement Ogieskraal cannot be upgraded, other than it being privately owned, is that it is situated within Koeberg's 5km safety zone.

Landfill sites present other safety restrictions to developments. According to Planning Partners (1996) there are two landfill sites of regional significance are situated on farm Visserhok Uitspan. A private facility, Waste-Tech (Pty) Ltd, is situated on land leased from Kholer Bricks and makes use of a portion of an abandoned clay quarry for the disposal of non-hazardous and hazardous waste (Planning Partners *et al*, 1996). The adjacent CCT site is also equipped to receive hazardous and non-hazardous waste. These two sites were the only disposal sites with facilities to handle hazardous waste in the Western Cape (Planning Partners *et al*, 1996). DWAF is responsible for licensing waste disposal sites (MLH Architects and Planners, 1997).

A buffer zone of 800metres, limiting residential development, is implemented for health reasons and unacceptable nuisance levels emanating from the site (Planning Partners, 2002). The tendency of informal settlements to settle on public open space with safety restrictions is demonstrated by the informal settlements of Rooidakkies and Skandaalkamp, which are both situated within the boundaries of Visserhok Uitspan landfill site and will thus have to be moved. Based on a recent site visit (14/10/04), it seems the people in Skandaalkamp livelihoods depend on the rubbish dump which drives them to sacrifice their health. The photo's below of Skandaalkamp (Figure 14), show children collecting rubbish from the landfill site. However, living so near to the rubbish dump is a health hazard therefore the settlement should be moved. Rooidakkies is much smaller informal settlement and people that live there work in the oil refinery opposite it.

Furthermore, Spookkamp is situated within the boundary of the area that is under investigation for a new landfill site. There is also an informal settlement, called the Table View Tip site informal settlement (24 informal dwellings), situated near the Table View refuse dumpsite – privately owned land in Ward 3 (Audit, April 2004).

Figure 14: Informal settlements which make their living off Visserhok Landfill site

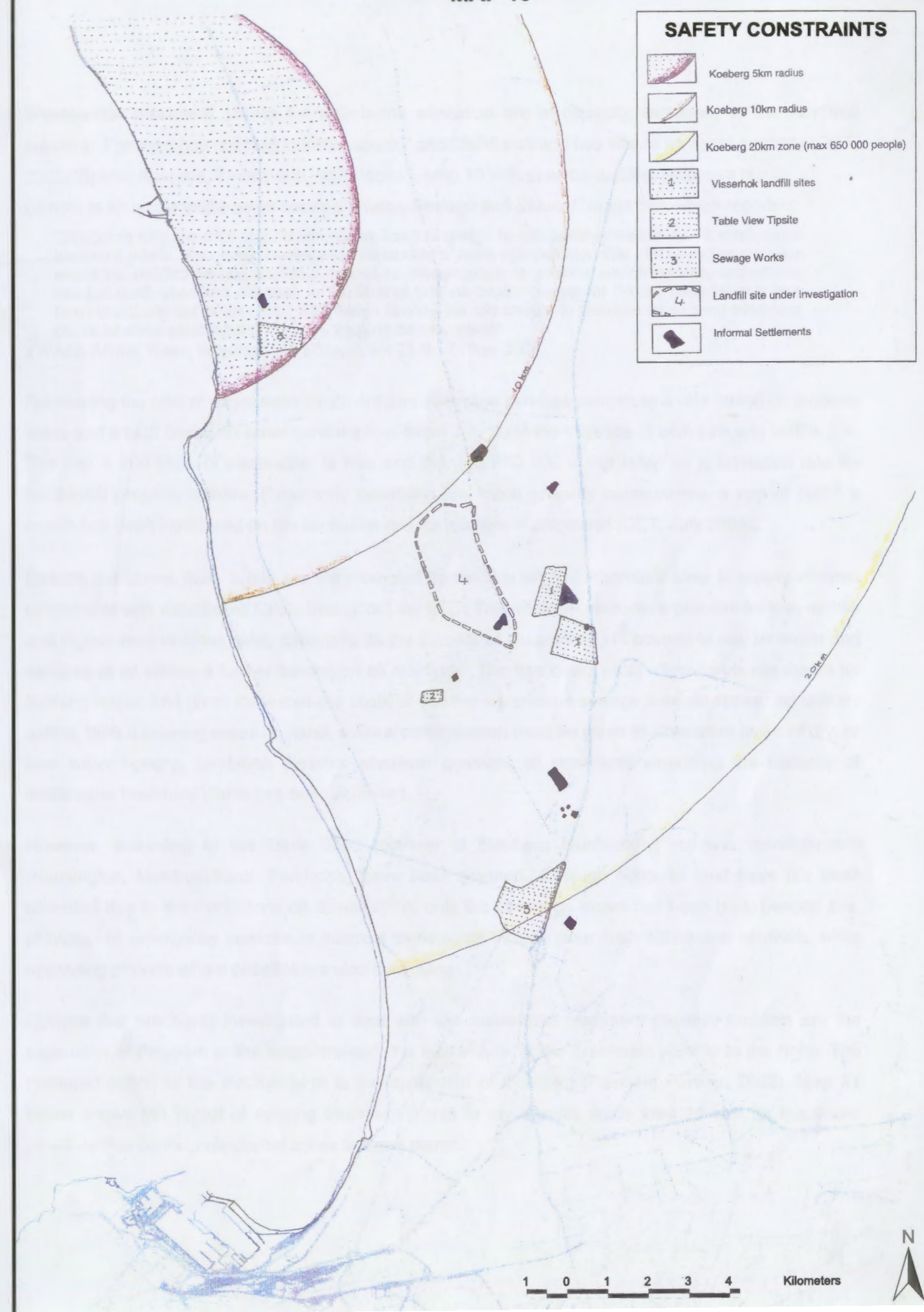


Another public health issue that affects the study area as a whole as well as the broader environment is **pollution**. An important regional factor concerns the formation of inversions coupled with periods of low ventilation, usually during the months of April and May when air pollution sweeps over the entire study area. This is due to the prevailing wind direction changing from South–North to North-South. There is broad agreement that emissions of sulphur dioxide, carbon monoxide, lead, hydrocarbons, nitrous oxides and ozone are dangerous poisons that are harmful to human health. Links have been made between children with learning disabilities and lead poisoning. (Von Zeil, C & Lambert, T (2003) Landscape Architects project, UCT).

Recently the Cape Times (5/7/04) reported that on the 4th of July 2004, for about 10 minutes, “crude oil from the Caltex oil refinery” rained down on Table View area as far as the Bayside shopping center and Parklands. The Caltex director and general manager, Steve Woodruff, conveyed that this was caused when water accidentally mixed with hot crude oil, causing pressure to increase and the safety valve to pop. The public outcry reflected in media reports noted that, “for decades people living around the Caltex

oil refinery have claimed that airborne toxins from the plant are hazardous to their health" (Cape Times, 5/7/04).

A recent University of Cape Town (UCT) study that was commissioned by residents associations showed that children in the city's northern suburbs had unusually high levels of asthma associated with exposure to petrochemical emissions. However, other reports by the health director and Medi-Clinic in Milnerton argue against any signs that the Refinery is endangering people's health. At the present moment, city officials don't foresee any health risk. A new Air Quality Bill is intended to force factories spewing smoke and chemicals into the air to meet stringent standards, pay substantial fines or face closure.



2.4.3. BULK SERVICES & INFRASTRUCTURE RESTRICTIONS TO DEVELOPMENT

In 1989, the average daily freshwater inflow to homes and places of work in the Greater Cape Town Metropolitan Area (GCTMA), supplied from the surrounding mountain reservoirs, was measured at approximately 600 mega litres, while Domestic and industrial outflows are measured at 356 mega litres daily, aggregated and centralized at 27 sewage plants (Gasson 1989: 15). The rapid growth of the northern arm of the GCTMA together with the increasing influx of people to informal settlements has led to waste water capacity problems for the existing treatment works.

For the past decade water consumption has been growing twice as fast as the population growth (Blaauwberg Municipality⁴, 19/07/2004). A notice at the municipal offices claims that, “even the proposed new Skuifraam dam due for completion in 2006/7 will be fully utilized by the time it is constructed, and as no suitable site for a dam remains thereafter, we will still have insufficient **water reserves** for drought years thereafter”.

Shortage of water reserves, as well as the current low level of water in dams, recently led the Minister of Water Affairs and Forestry to require that the municipality impose water restrictions to reduce water consumption by 10%. The following restrictions apply: council water supply may only be used to water gardens/lawns for an hour on even days of the month and not between 10am-4pm. Only buckets, not hoses, can be used to wash cars, motorcycles, motorboats, buildings walls, windows, paths, paved areas or roofs. These restrictions will be in place until the Skuifraam Dam is completed in 2006/7 (Blaauwberg Municipality, 19/07/04). If the required 25% reduction in summer consumption is not achieved, this will lead to extreme conditions being put in place in 2005.

How do such restrictions affect low-cost housing developments? Seemingly, the free basic water provided from 1035 standpipes is not affected or being addressed. At the moment community standpipes are placed at a 200m radius, but will be upgraded to 100m radius with water remaining free. Water is metered, but apparently only to see how much water is being used rather than promoting the sustainable use of water (Powell, 8/7/04). As the city has already reached a point of crisis in water supply, the Mayor's dropping of proper procedures to enable her demand for immediate provision of emergency services can only have negative results on our water resources. While the short-term demand is understandable it is creating an adverse precedent that endangers sustainable servicing in the medium term. Maintaining that only 6kl of water is free and regulating the sustainable use of water, needs to be an outcome of metering free water consumption.

⁴ Blaauwberg Municipality, “Blaauwberg Water Talk”. This is a notice at the Blaauwberg municipal office, acquired by the author/researcher on the 19/07/2004

Wastewater treatment plants for waterborne sanitation are at capacity, especially in the Northern suburbs. Potsdam has reached ‘critical capacity’ and Melkbosstrand has little or no spare capacity (CCT, 2002: ‘Spatial Analysis, Trends and Implications’). Map 10 indicates the existing treatment plants.

Of note is an article in the water sector's “Water, Sewage and Effluent” magazine, which reported:

“Struggling with the debt of 2.5 billion, Cape Town is unable to adequately maintain its 17 wastewater treatment plants. A strategic investigation conducted 5 years ago indicated that R150 million per year would be needed to upgrade and extend its infrastructure to provide environmentally acceptable sewage purification and disposal. In the face of this the capital budget for 2003/4 financial year has been drastically cut to less than R50 million leaving the city unable to maintain its existing treatment plants let alone establish the m in new housing developments”

(WASE Africa, Water, Sewerage and Effluent, vol 23 No. 6, Nov 2003).

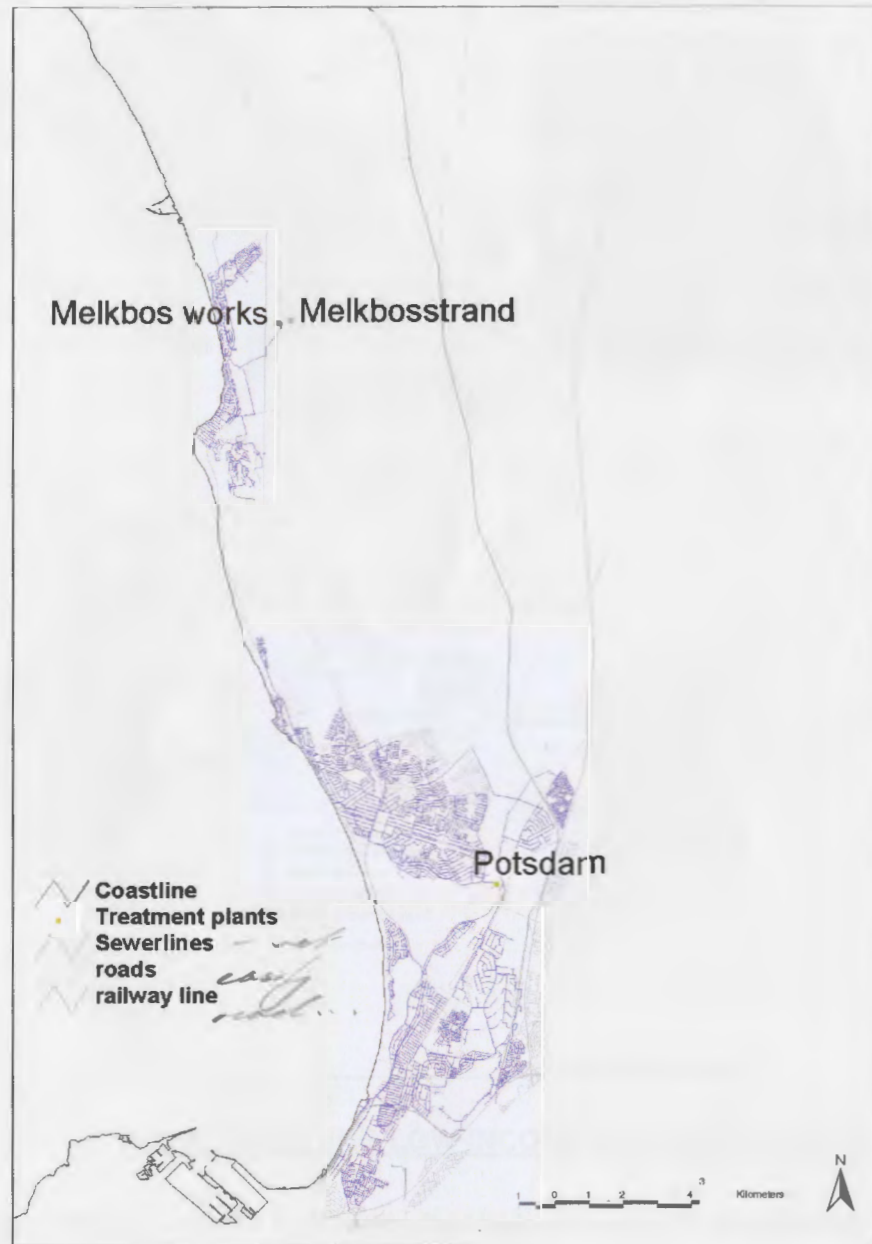
Recovering the cost of wastewater treatment and sewerage services comprises a rate based on property value and a tariff based on water consumption. From July 2004 the increase of both rate and tariff is 5%. The first 4 200 litres of wastewater is free and the first R50 000 is not rated as a sanitation rate for residential property owners. Particularly benefiting low value property homeowners, a cap of R250 a month has been introduced on the sanitation rate for residential properties (CCT, July 2004).

Despite the above, flush toilets are still promoted by the City which furthermore aims to supply informal settlements with waterborne toilets throughout the CCT. This situation presents a problem for low, middle and higher income areas alike, especially as the inability of people living in poverty to pay for water and services at all places a further burden on all residents. The free basic water allocation is not meant for flushing waste, and given the excessive costs of treating waterborne sewage it would appear an unlikely option. With a looming crises on hand, serious consideration must be given to alternative forms of dry, or less water hungry, sanitation systems wherever possible, at least until extending the capacity of wastewater treatment plants has been achieved.

However, according to the Dave Scott (planner at Blouberg municipality) roll-over developments (Kensington, Melkbosstrand, Parklands) have been planned, although rights to land have not been allocated due to the restrictions on development until the sewerage works has been built. Despite this, provision of emergency services in informal settlements include pour flush toilets and continue, while upgrading projects where possible are also continuing.

Options that are being investigated to deal with the wastewater treatment capacity problem are the expansion of Potsdam or the establishment of a new Waste Water Treatment plant in to the north. The preferred option in the medium-term is the expansion of Potsdam (Planning Partner, 2002). **Map 11** below shows the layout of existing treatment plants in my specific study area as well as the sewer pipelines that connect residential areas to these plants.

Map 11: Treatment Plants GIS data 2004



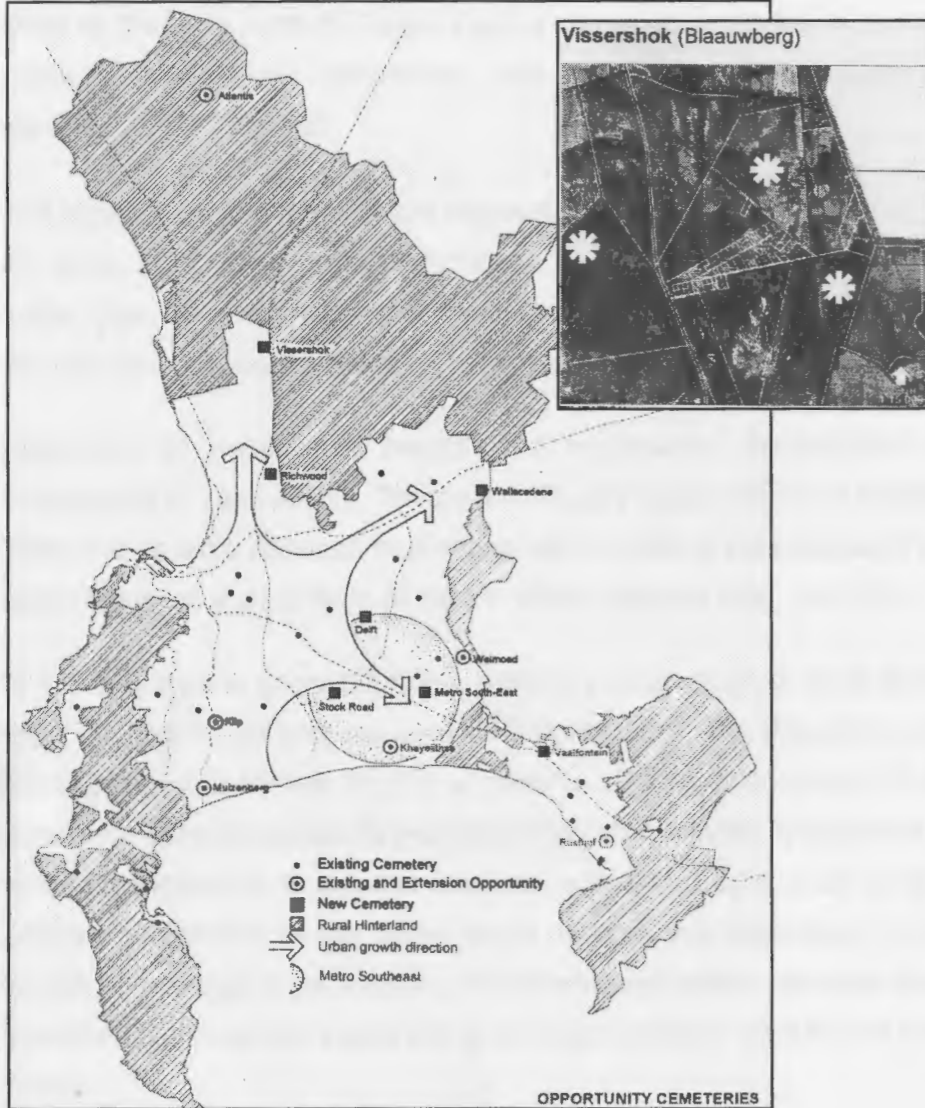
There is a critical shortage of solid waste landfill space within the CCT, with a number of the existing facilities due to be closed in a few years. In 2001, the CCT (2001) predicted that four of Cape Town's **land fill sites** will close over the next 5 years, which leaves 2 years to go. The implication is that a great deal of investment is needed to provide more landfill sites to those residential areas already in place (The State of the Environment for the City of CT, 2001). The two landfill sites on Visserhok farm will be closing soon, Waste-Tech is at its capacity and the CCT site is nearing capacity with 2 to 7 years to go, based on the life-spans given in 1996 in Bloubergsvlei Sub-Regional Plan (Planning Partners *et al*, 1996). From a site visit (14/10/04), it looks like Waste-Tech is busy being expanded its landfill site to combat the problem in the short term.

The City's target is to reduce waste by 50% by the year 2020. This year, the average increase in solid waste tariffs is 5%, which will also raise R21 million for extra clean-ups in specific areas. In 2004/5 the bulk disposal rate increases by 5%. Free refuse collection in informal settlements will be extended to informal settlements on private land. The first R50 000 of residential property value is not rated for the bulk disposal rate, particularly on low-value properties. Households with property valued at less than R125 000 receive a 25% subsidised refuse collection service. Those properties valued below R50 000 receive 100% subsidy on refuse collection (CCT, July 2004).

A further inhibition to development on this site is that tracts of land have been **proposed for cemeteries**. **Map 12** shows that there is a serious shortage of cemeteries in this study area, with none within the boundaries of my specific study area. The nearest existing cemeteries are in Atlantis, Durbanville, Maitlands and Pinelands.

The cemeteries proposed in the Draft Metropolitan Cemetery Study, produced by Setplan in 2003, that will directly affect my study area are in Richwood and Visserhok, as well as the extension opportunities in Atlantis cemetery. These can be seen in the map below. Visserhok would have the capacity to house 40 000 graves (20ha). The different options that could be utilised for cemetery sites can be seen on the aerial photograph of Visserhok below.

Map 12: Cemetery proposals (Setplan 2003)



2.5. INTEGRATING LOW-INCOME SETTLEMENTS INTO THE URBAN FABRIC

One of the key aspects in planning for low-income settlements is their integration into the urban fabric, as opposed to pushing them to the periphery. Land ownership, the prescribed land use and zoning, and how these settlements relate to movement systems, is of crucial importance whether upgrading informal settlements where they stand or identifying suitable vacant land to plan for low-income settlements. Movement networks in this respect include improving and building road systems to cope with increased developments as well as enabling access to areas of opportunities. Accessibility to public and commercial facilities is crucial in respect to the layout of low-income settlements so to ensure they are integrated into the urban environment.

2.5.1. URBAN LAND

2.5.1.1. Ownership of Vacant Land

Before any project can be implemented in urban areas, ownership of the land must be determined. Land can be owned either privately or publicly. Public ownership can be by the local authority, the provincial authority or national government. Refer to map 13 for the breakdown on land ownership in the study area.

2.5.1.1.1. Public land

The most accessible land in terms of low income settlement upgrading is public (local, provincial or national government) owned land. The state owns a large portion of the coastal land between Bloubergstrand and Melkbosstrand, Otto du Plessis Drive and the West Coast Road (Planning Partners et al, 1996).

However in this specific study area, the only vacant land owned by the local authority, according to the GIS data in 2004 (map 13), is a section just below Blaauwberg Road, a section above Table View development and to the east of the railway line, and sections along the coast. The central government owned land is already protected, and there are small pockets of provincial government owned land within Table View development. The majority of land is thus privately owned.

Ysterplaat and Wingfield are sites that have seen numerous proposals for them to become Greenfield sites that would incorporate low-income settlements, but no movement has been made in that direction yet. Both of these are owned by the military.

The informal settlements in the specific study area that are settled on public land are: Du Noon Holding Sites (estimated 137 du on City land); Du Noon School Site (On PAWC land in Ward 3 there are 708 informal dwellings); Rooidakkies (public land with an estimated 11 informal dwellings); Skandaalkamp: (157 informal du situated on public land); Tafelozono (25 informal du situated on public land); Sixth Avenue Kensington (an estimated 52 du's on Land owned by PHDB); Wingfield Camp (6 du's owned by PAWC).

The state owns a large portion of the coastal land between Bloubergstrand and Melkbosstrand, Otto du Plessis Drive and the West Coast Road (Planning Partners et al, 1996).

2.5.1.1.2. Private Land

Most of the land north of Table View is owned in large tracts by housing institutions. Private sector property development companies, such as Garden Cities, Milnerton Estates and FairCape, own substantial smallholdings.

The informal settlements that are presently settled on privately owned land are: Morning Star (estimate of 25 du's); Ogieskraal (33du); Doornbach (2 122 du's), Spookkamp (13 estimated informal dwellings); Table View Tip site (24 informal dwellings) (CCT Audit 2003). These informal settlements should either be relocated, expropriated or sold to public authorities.

Acquisition of well-located private land for housing development is guided and financed by the Department of Land Affairs. Private land is only supposed to be acquired where there is no appropriate state-owned land. Although preference will be given to the negotiated purchase of private land, as a final resort it may be expropriated at market value (National D0H, 2/9/2004).

In this country it is unconstitutional, without a court order, to evict anyone or demolish any dwelling unit once the unit is built and occupied (WP DoH, 2003). The Prevention of Illegal Eviction from an Unlawful Occupation of Land Act No. 19 of 1998 is clear in this respect. Eviction is normally only granted if alternative accommodation is available. The Court may be approached for an urgent eviction if the owner feels endangered or is experiencing undue hardship as a result of an illegal occupation. Otherwise, in ordinary circumstances the owner would need to give 'squatters' 14 working days notice of intention to launch an application for eviction. The owner must obtain personal details of squatters (ID, ages, health conditions, employment status etc) prior to appearing in court for the hearing of the application (WP DoH, 2003).

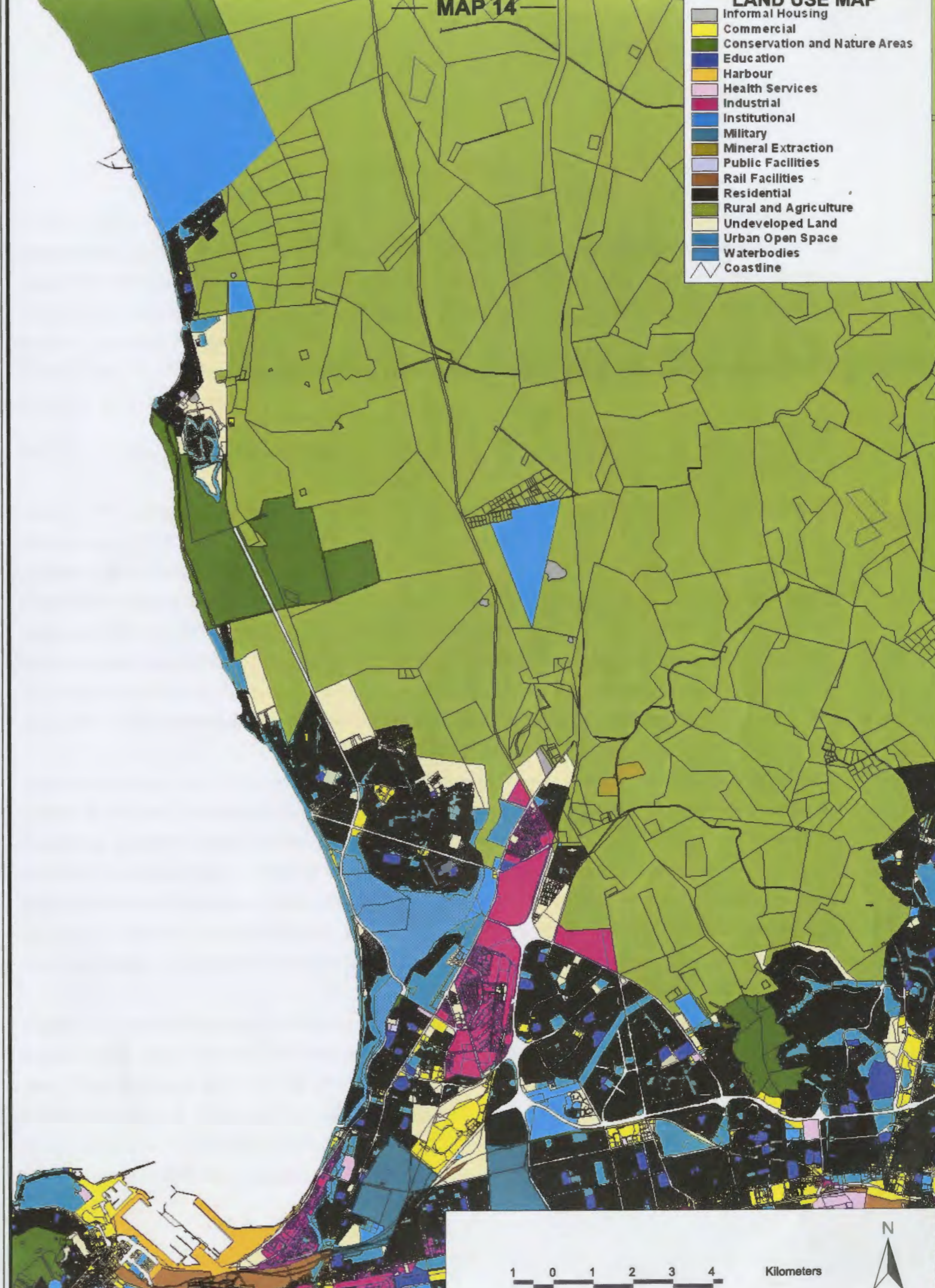


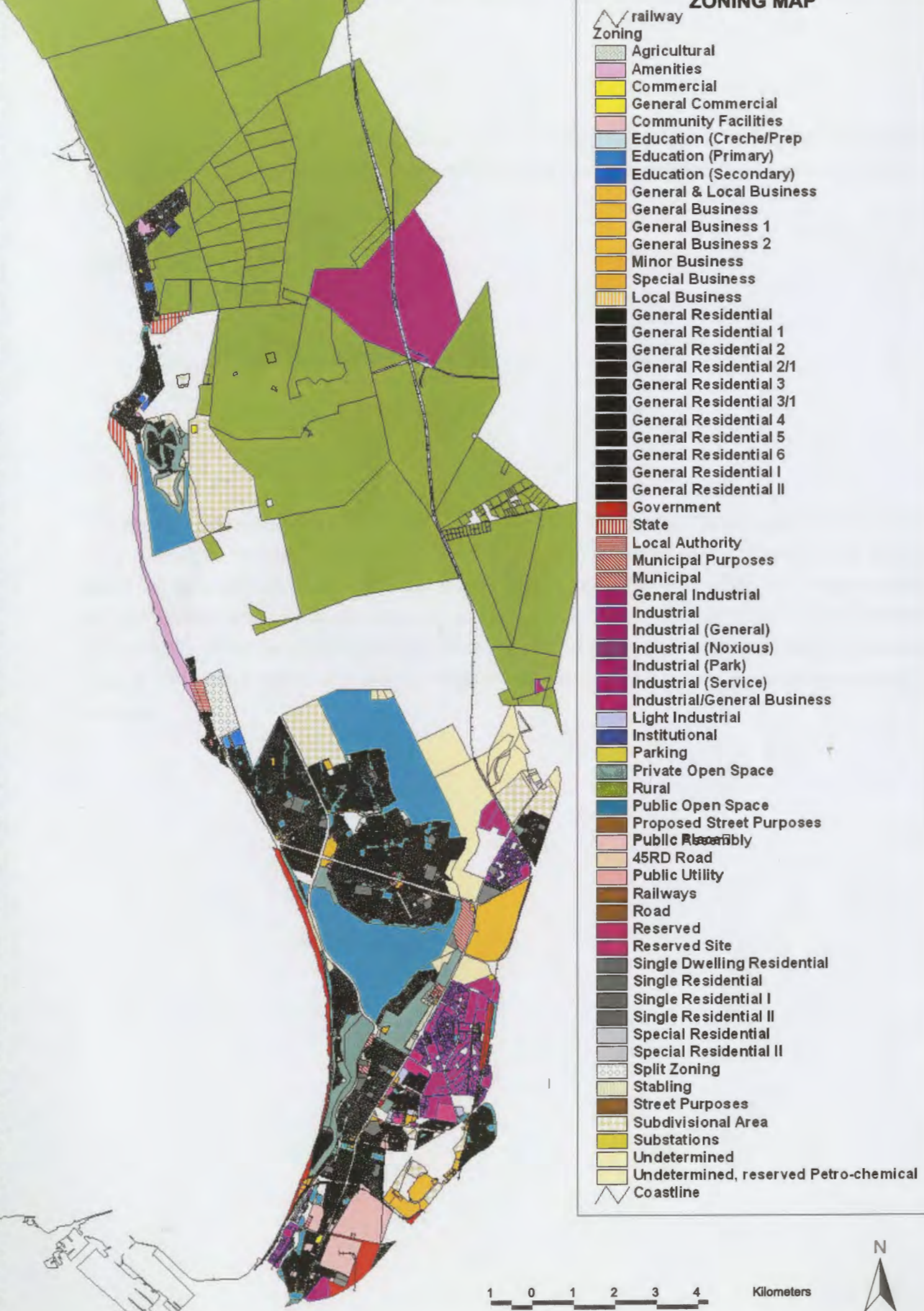
2.5.1.2. Land Use and Zoning

Urban planning is currently controlled in terms of the Land Use Planning Ordinance (Ordinance 15 of 1985). In the Western Cape Province, for Greenfield type low-cost developments the existing land regularization legalization provides suitable framework for low-cost developments in terms of the Land Use Planning Ordinance (Ord 15 of 1985) and Less Formal Township Establishment Act (Act 13 of 1991) (WC DoH, 2003). This is to be replaced by the Western Cape Planning and Development Act (Act 7 of 1999) (Planning Partners, 2002).

As can be seen in the Land Use map 14 below, Informal Housing is included as a category of housing. It must be noted that these land use maps need to be updated regularly and do not include home based commercial activities, nor informal activities which are likely to occur in residential areas. A comparison of the Land use **map 14** and the Zoning **map 15**, shows that land use does not match zoning categorisations. This is largely related to the lengthy process that is needed for rezoning and the lack of monitoring and evaluation that occurs in the CCT. Although due to change, it is presently the Land Use Planning Ordinance that is used for control through zoning schemes and procedures for rezoning. Although this legislation does not comply with the new Constitutional allocation of powers, until new legislation is in place, the procedures set out here have to be followed (Ogle, 2003).

When upgrading low-income settlements zoning legislation is required to be more lenient and allow for planning "zone of special interest". However, it is expected that Greenfield projects should be accommodated within the generic zoning legislation (WP DoH, 2003). The trend today is towards mixed use zoning in low-income developments rather than exclusive residential zoning.





2.5.2. MOVEMENT PATTERNS

Movement is the major integrating factor in a Spatial Development Framework. In this case development is constrained by lack of transport infrastructure to accommodate movement. Further developments in the study area have been temporarily delayed until critical bulk services have been provided. These services include new transport links and public transport services. Many plans and proposals have been put forward regarding improvement of the transport system network in the Northern suburbs to allow development to continue. Discussed below, the emphasis of such proposals is on improving public transport, which would in turn increase commercial activity.

2.5.2.1. Existing movement networks

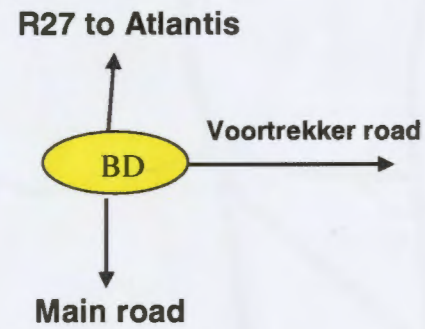
Map 16 shows the existing public transport networks and its classifications. In the 2004 GIS data, the Expressway and Freeway are classified as Class one roads, whereas the primary and secondary arterials (Blaauwberg Rd, Koeberg Rd, Boundary Rd, Race course Rd, and the M19) are classified as Class 2 and 3 roads. Map 17 illustrates the functions of the different routes (existing activity route/mobility routes etc) and the metropolitan gateways into the study area, as well as the gateways (points of entry) into the urban areas within the study area. In general, the mobility routes and railway line acts as barriers to pedestrian movement into different areas. Stations are usually associated with major entry points but since this is not a passenger train they are not regarded as such at the present time.

Traffic congestion in the N-S direction in and out of the study area is a major issue in this area, which is related to the lack of public transport and inability of roads in the area to carry the capacity of the increasing population. Peak period congestion along the main North-South routes serving northern residential neighbourhoods – Marine drive (R27), Koeberg Road (M5) and N7 – currently experience amongst the worst congestion delays in the City (Roger Behrens, 2004). At the moment the existing railway line does not carry passengers. The Koeberg safety restrictions, discussed earlier, are another major contribution to restriction on development until the road networks have been improved.

A study by Planning Partners (1996) focusing on Table View, revealed that residents are mainly middle-income “white collar” workers, with most employment destinations falling outside the Southern Suburbs area. There is thus a strong flow of commuter traffic by private car, travelling south in the morning and north in the afternoon (Planning Partners, 1996). According to the City Transport Department the number of cars on the N1 increased by 63% over the last 13 years, presently used by 112 240 vehicles daily, while on the M3 traffic has increased by 67% (Smetherham, 12/08/2004).

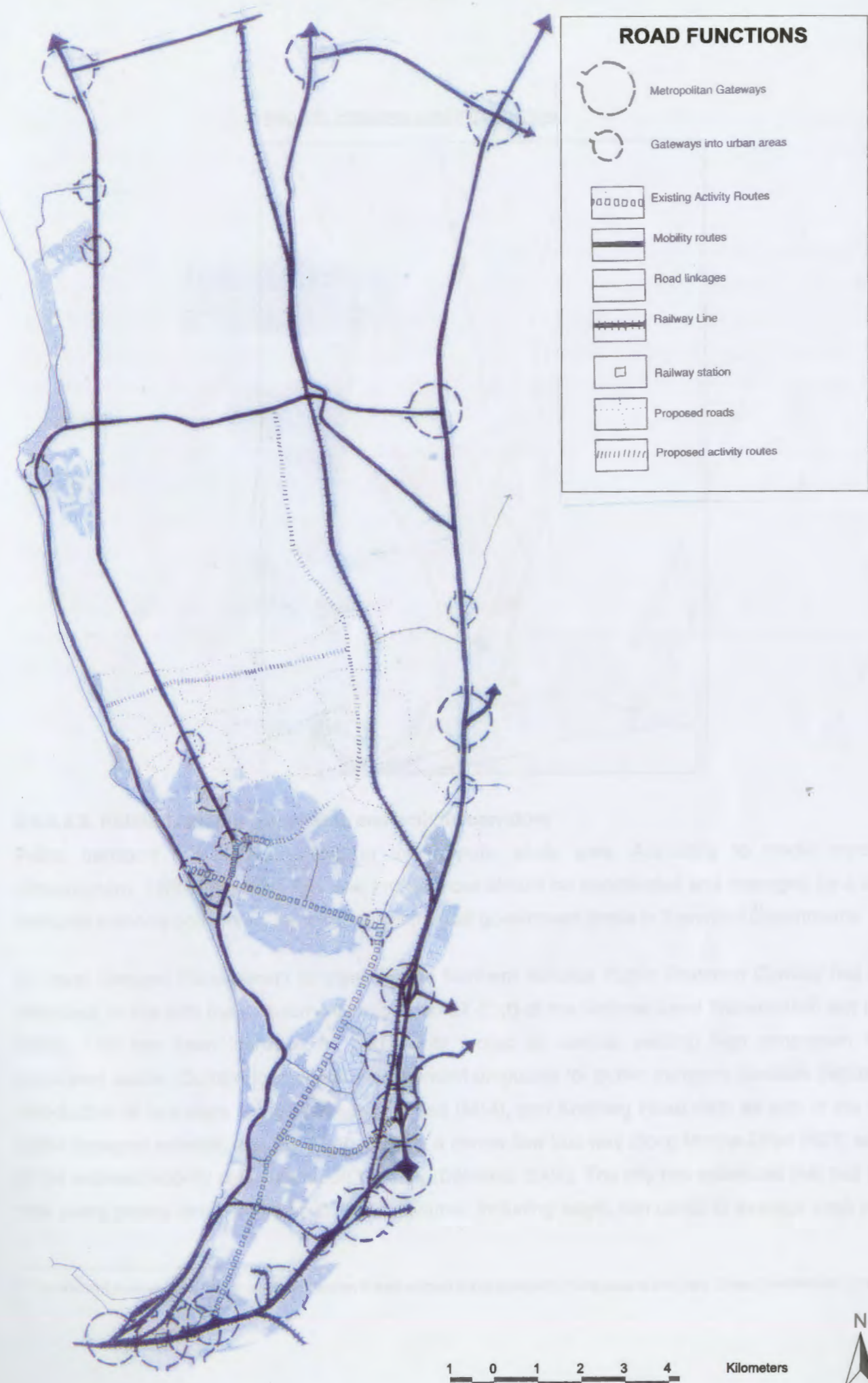
Previously, development initiatives were focused on the two mature corridors, namely Voortrekker Road and Main Road, with full capacity for development having now been reached. The diagram below shows the movement directions from the CBD.

Figure 15: Movement from the CBD



Development opportunities are now being sought elsewhere. The Northern Growth Corridor is argued to have potential to become a mature activity corridor (Warnich & Verster, 2004). There are two ways in which the congestion on routes in the Northern suburbs can be cut down. The first is to build new roads to accommodate traffic while promoting the use of public transport. The second is to create sufficient economic opportunities within the area to decrease flows of traffic to and from the Southern Suburbs. Both of these mechanisms and factors should be addressed together to achieve the most effective outcome.





2.5.2.2. Movement Proposals that impact the study area

2.5.2.2.1. Road infrastructure

Different proposals in the study area are based on three different types of movement systems: new road infrastructure or extensions; public transport routes; and pedestrian and bicycle routes. Proposed transport facilities that are confirmed, include links and improvements that need to be developed prior to any major new residential or activity development being undertaken. These are listed below with cost estimates (CCT Transport, Roads and Stormwater Directorate, 2 March 2004).

Table 4: Proposed new developments and costs

• M12: Sandown Road to Potsdam Road (incl. Diep River bridge)	R 25,2m
• M12: Potsdam Road to Contermanskloof Rd (incl. M12/N7 Interchange)	R 48,7m
• Sandown Road: Brazelton Rd to Parklands Main Rd	R 13,1m
• Sandown Road: Parklands Main Rd to M12 (assuming level crossing)	R 6,5m
• Parklands Main Road: Eastwards extension to Sandown Rd	R 6,0m
• Wood Drive: Extension to future East-West Activity Route	R 9,0 m
• Koeberg Road: Portions falling within development area north of PM Rd	R12,0 m
• Blaauwberg Road: Dual carriageway: R27 to Marine Drive	R 13,0 m
• R27/West Coast Rd: Widening: Sandown Rd to Porterfield Rd	R 4,0m

CCT Transport, Roads and Stormwater Directorate, 2 March 2004

The above projects do not make provision for priority lanes for public transport nor for the necessary additional public transport interchange facilities (CCT Transport, Roads and Stormwater Directorate, 2 March 2004).

Map 18 below illustrates the proposed new movement routes, road extensions and road improvements (GIS 2004), but does not include proposed activity corridors.

Map 18: Proposed road infrastructure



2.5.2.2.2. Public Transport proposals and activity corridors

Public transport is severely lacking in this specific study area. According to media reporting⁵ (Smetherham, 12/8/2004) train, bus and taxi services should be coordinated and managed by a single transport authority comprising representatives from all government levels in Transport Departments.

A Travel Demand Management Strategy for the Northern suburbs Public Transport Corridor has been proposed, in line with the requirements in section 27 (2)(f) of the National Land Transport Act (22 of 2000). This has been identified as the priority project to combat existing high congestion levels mentioned earlier. Current road space management proposals for public transport corridors include the introduction of bus ways along Blaauwberg Road (M14), and Koeberg Road (M5) as part of the 'core' public transport network, and the introduction of a contra-flow bus way along Marine Drive (R27) as part of the express/mobility public transport network (Behrens, 2004). The city has estimated that bus travel time using priority lanes would be 20 to 30 minutes, including stops, compared to average peak period

⁵ "Government, business and labour agree the solution is safe efficient public transport", Front page of the Cape Times (Smetherham, 12/8/2004)

travel time of over 1 hour from Blaauwberg to CT CBD (Transport, Roads and Stormwater Directorate, 02/03/04).

A plan to upgrade the railway line to a passenger line to accommodate population growth is part of the final draft of the Blaauwberg Spatial Development Plan of 2002 (Planning Partners, 2002). This proposal is part of a range of public transport proposals to be implemented in the short to medium term (MLH Architects and Planners et al, 2000), that are listed below:

- Upgrading the Atlantic railway line to a passenger rail service, with development nodes at station locations;
- E-W public transport feeder routes to future stations;
- Public transport high occupancy vehicle (HOV) lanes along Otto du Plessis Drive Corridor with associated park-and-ride areas;
- Relocation and upgrading of present Killarney bus terminus (has been completed);
- Provision of public transport lanes along Koeberg Road;
- Provision of bus embayments along Parklands main road activity spine;
- Future accommodation of public transport lane along the above route (MLH Architects and Planners et al, 2000).

As single carriageways cannot accommodate separate lanes for public transport vehicles, all the activity routes shown on **map 16** (core public transport routes) must have two additional lanes for this purpose, unless it can be proved that the existing lanes can be reserved for public transport at least during peak periods. According to the CCT Transport, Roads and Stormwater Directorate, (2004), the estimated additional cost of these improvements in the planning area alone is in the order of about R60million. The estimated cost of the road-based metropolitan public transport improvements on Koeberg Road, Otto du Plessis Drive/Marine Drive (R27) and their links towards the Cape Town CBD is in the order of a further R100 million (CCT Transport, Roads and Stormwater Directorate, 2/03/2004).

In the medium-term the following public transport proposals (MLH Architects and Planners et al, 2000) have been submitted:

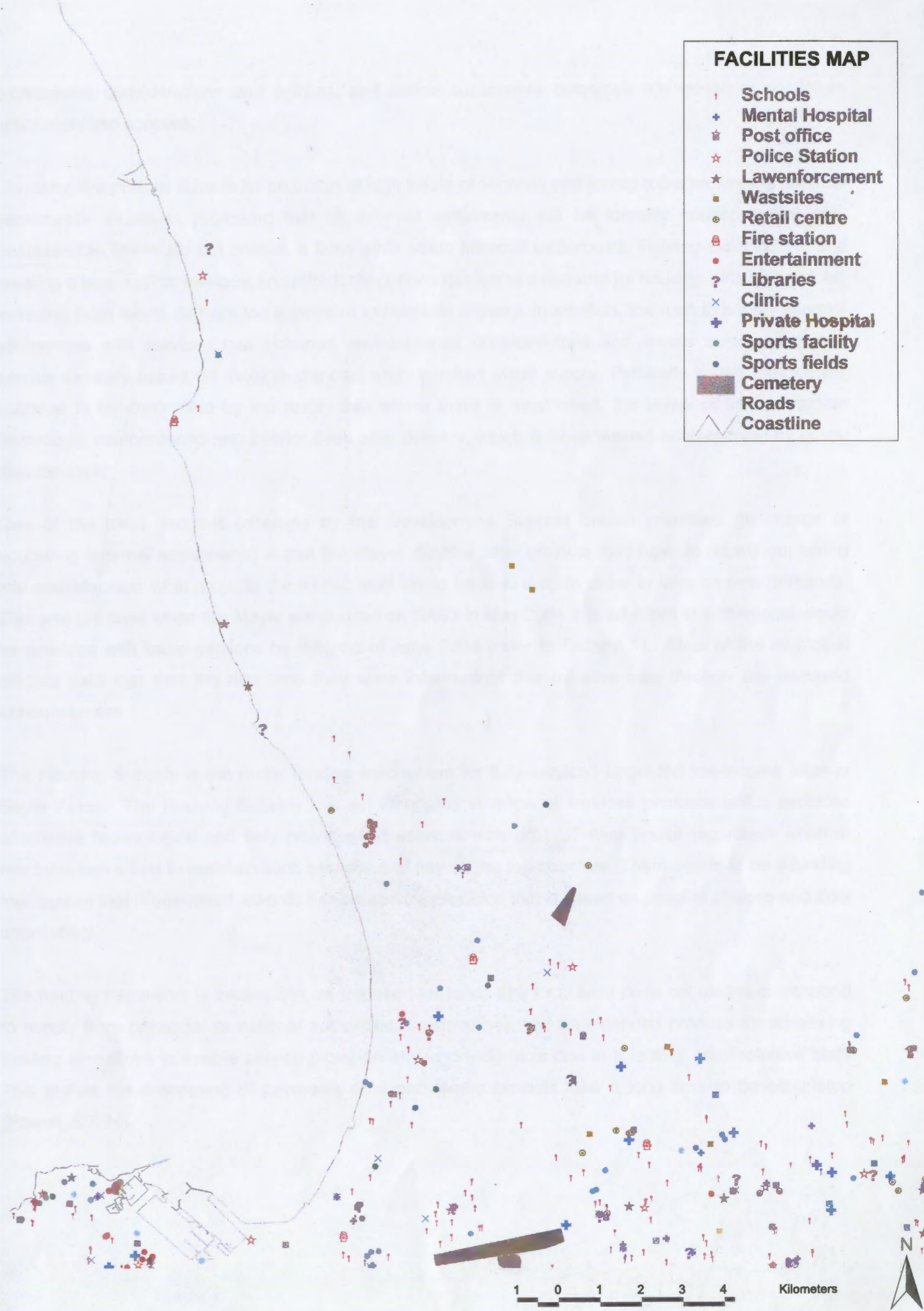
- Upgrade Otto du Plessis Drive to 3 lanes in each direction south of Blaauwberg Rd;
- Upgrade Blaauwberg Road to 3 lanes in each direction between West Coast and Koeberg Rd and extended eastwards from Koeberg Rd;
- Upgrade Koeberg Rd to 3 lanes in each direction between Blaauwberg Rd and Platteklouf Rd; Upgrade Tygervalley Rd to 2 lanes in each direction between Blaauwberg Road extension and Platteklouf Rd.

appropriate (Planning Partners 2002). Recreation nodes are related to areas that have resort potential and areas along the coast with high accessibility.

In low-income settlement upgrade projects the choice of public facilities that should be supplied in the site, should be determined by funds available, based on a priority list drawn up by beneficiaries, and access to surrounding facilities. Preference should be given to commercial facilities along activity routes and geared towards local entrepreneur initiatives.

FACILITIES MAP

- † Schools
- + Mental Hospital
- ⊠ Post office
- ☆ Police Station
- ★ Lawenforcement
- Wastsites
- Retail centre
- Ⓜ Fire station
- Entertainment
- ? Libraries
- × Clinics
- + Private Hospital
- Sports facility
- Sports fields
- Cemetery
- Roads
- ∩ Coastline



SECTION 3: KEY ISSUES AND SPATIAL CONSTRAINTS

Summing up the major issues that have come to the fore in the previous two sections, the emerging issues in the specific study area will be examined in relation to how they are achieving the performance principles provided earlier.

3.1. INSTITUTIONAL ISSUES

One of the goals of this study is to examine the need to achieve 'Efficiency and Fair and good governance' that was discussed earlier, with particular regard to low-income settlements. This principle is as crucial to dealing with low-income settlements efficiently as it is to any other form of urban development.

3.1.1. POLICIES

The existing policies that deal with informal settlements are predominantly orientated towards informal settlement upgrading. Although the recent IDP (2004) alludes to making Greenfield sites available for low-income settlement in the future, there is little evidence of implementation. Sites that are mentioned, such as Ysterplaat, are still in limbo with no sign of changing its land use. No overall package identifying sites that can accommodate informal settlements throughout the city has been published. A program for the release of land needs urgently to be developed which will necessitate cooperation between municipalities, the Department of Land Affairs and Department of Public Works.

Policies do not deal effectively with informal settlements, as they remain orientated to the end-result of a fully serviced house. The new Housing Department plan, currently being circulated in draft form for discussion purposes, does not deal effectively with the lower income levels that dominate informal settlements. Thus far the main changes proposed to the housing policy are to provide housing subsidies to the middle-income population and collapse the subsidy bands so as to enable the upper level of low-income earners to access higher amounts of housing subsidy allocations.

Approaches that the local authorities use are informed by policies and legislation. At the moment there is no single approach or program in the City of Cape Town to deal with informal settlement upgrading.

3.1.2. POWERS AND FUNCTIONS

Cape Town is still heavily centralized as decision-making powers rest with one group, the Mayoral Committee (Powell, 8/7/04). The result is that decisions are politically driven rather than based on

professional considerations and opinion, and hence sustainable outcomes are generally not taken adequately into account.

Currently, the political drive is for provision of high levels of services and formal top-structures to informal settlements. However, promising that all informal settlements will be formally housed is not only unachievable financially but creates a false ethic within informal settlements. Raising expectations and creating a bias against low-cost and affordable options has led to a demand for housing with full services, including flush toilets that are too expensive to maintain anyway. In addition, the rush to supply informal settlements with services has sidelined environmental considerations and issues surrounding bulk service capacity based on sewage disposal and unlimited water supply. Politically driven rhetoric will continue to be confronted by the reality that where there is most need, the levels of service remain hazardous, overburdened and inferior even after delivery, which is nevertheless accompanied by costly maintenance.

One of the most frequent criticisms by the Development Support branch members (in charge of upgrading informal settlements) is that the Mayor dictates what projects they have to do without taking into consideration what projects the limited staff would have to drop in order to take on new demands. This was the case when the Mayor announced on SAB3 in May 2004 that all informal settlements would be provided with basic services by the end of June 2004 (refer to Section 1). Most of the municipal officials said that that the first time they were informed of this initiative was through the televised announcement.

The Housing Subsidy is the major funding mechanism for fully serviced upgraded low-income sites in South Africa. The Housing Subsidy has set standards in terms of services provision which excludes alternative technologies and only provides full services with an RDP-type house regardless whether residents can afford to maintain such services and pay off the top-structure. There needs to be a funding mechanism that is orientated towards flexible service provision that is based on people's choices and their affordability.

The funding framework is inadequate, as the need for funds at a local level does not always correspond to supply from provincial or national authorities. Inefficiencies and an extended process for accessing funding allocations to enable service provision are reportedly slow due to a lack of administrative staff. This makes the processing of payments slow and hence projects take a long time to be completed (Powell, 8/7/04).

Responsibilities are not clear. At the moment within the CCT, professionals are employed to work on jobs that were not originally in their job description. Informal settlement upgrading is the official responsibility of the Housing Department but the Development Support Branch is presently in charge. The institutional set up to deal with informal settlements (refer to Figure 2) is reportedly only in place until the end of September, by which time it is hoped that the Housing Department will be ready to take over. Civil engineers working on the emergency provision of services are drawn from various departments (Powell 8/7/04). Their main function and responsibility is to hire and manage external consultants to design, plan and implement the upgrading of informal settlements.

Municipal processes involved in appointing external professional consultants to implement the majority of the informal settlement upgrade projects, is time consuming. The Tender process alone takes a couple of months, and can evidently result in poor quality work. It would thus be more cost effective and less time consuming to cut out the middleman and designate professionals within the council to work directly with communities. This approach would of course hinge on the capacity within and across relevant departments and require the full support of line managers.

The City of Cape Town is not using local procurement opportunities to the extent that it could. One aspect of poor performance in this regard is related to the external consultants hired by the city, who are supposed to hire local contractors and laborers wherever possible, according to their tender documents. However as this is not a strictly applied rule, the contractors hired are seldom from the local community and hence the laborers contractors hire are not always from the community. This scenario requires a lot of time-consuming follow-up by officials to ensure that local procurement occurs, which adds to the argument against the wholesale hiring of external consultants at expensive rates.

Professionals and officials alike often feel that the community dictates the upgrade process. A common argument for continually providing flush toilets, regardless of feasibility, is that the communities refuse to accept any other form of sanitation. However, the transfer of information to communities is negligible, including that waterborne systems are very costly to install and maintain compared to alternative forms of adequate sanitation, and key issues of affordability to community members that affect their budgets and city resources alike. Affordability on a day-to-day basis, for example, includes the necessity of using toilet paper in waterborne systems, as commonly used newspaper blocks the pipes with most unsanitary results.

3.2. SOCIAL NEEDS: AN INAPPROPRIATE SETTLEMENT MODEL

At the moment there is an inappropriate settlement 'model' unfolding in the North Western growth axis. The needs of low-income residents are not being met. The following issues are setting back the goal to create a good quality environment, with reference to the directive principles explained earlier.

3.2.1. ACCESS TO LAND

The study area largely consists of mono-functional, low-density, suburban residential development. Most of the land is privately owned, which leaves little opportunity for low-income settlement that is not profit driven. As the study area mostly consists of middle to high-income residential areas, the NIMBY syndrome is bound to affect low-income settlements within the urban area.

At present low income settlements are not incorporated into the urban fabric, leaving the urban poor with the options to settle on private land or on public land that is not safe, such as dumpsites and flood-prone land. While there are some future private developments, such as Melkbosstrand and Parklands 4th Development, that have included low-income settlements in their development, these are not sufficient. It is also questionable whether these will offer an affordable solution for people living in poverty.

3.2.2. ACCESS TO BASIC SERVICES

A lack of adequate access to basic services prevails in existing low-income settlements. In this specific study area this is largely due to informal settlements being settled on private land on which the local authority needs permission from the owner for public service provision. The areas that are being supplied with basic services are currently being provided with inadequate services, such as overburdened, shared container toilets which do not comply with national policy nor international definitions of adequate sanitation.

In some cases informal settlements are being provided with pour flush toilets and water without any arrangement of control and payment for water usage. Whereas this may be related to people's inability to afford to pay for services, where this is recognised as the case alternative and cheaper forms of sanitation that are deemed adequate by health authorities should be considered. Flush toilets should only be provided if people can afford to use and maintain them, by purchasing toilet paper to prevent constant blockages from newspaper and paying for the extra use of water over and above the free 6kl.

Further considerations are the fact that such developments are meant to be on hold until the new Sewerage plant has been constructed, and the fact that the dams are running out of water. The provision of VIP toilets is the only sanitation system being provided in this study that takes the above factors into

account. This type of on-site sanitation system includes income generation opportunities through use of community labour and local builder training in installation. The CCT has not yet considered the alternatives to the VIP although forms of tried and tested low-cost sanitation systems exist that are as, if not more, sustainable. Examples include the on-site Urine Diversion System, Condominium and Shallow-Sewerage systems that other metropolitan municipalities are undertaking.

In terms of solid waste removal, the two landfill sites on Visserhok farm that serve regional ^{area} will be closing soon. The Waste-Tech site is at its capacity and the CCT site is nearing capacity (2 to 7 years to go). Although a new landfill site has been identified it still needs to be built.

3.2.3. ACCESS TO ECONOMIC OPPORTUNITIES AND PUBLIC SPACES

As most employment opportunities are still situated South of the study area, there is a need to create more commercial nodes and activity corridors. In the specific study area there is a particular lack of employment opportunities for low skilled people mirrored by the high unemployment levels in informal settlements. In De Noon informal settlement in 2001, only 16% of the economically active population was formally employed and 90% of the households earned below R19 200 p/annum (R1 600 per month), or no income (2001 Census).

Existing and new public spaces may be used more productively. At the moment the study area tends to be monotonous and lacks a sense of place. Creating vibrant spaces would require the active rather than passive use of open spaces, such as in the provision of walkways along MOSS and rivers systems. While public facilities should be associated with public open spaces wherever possible, this type of association is not occurring in the study area at present.

3.2.4. ACCESS TO SAFE PUBLIC TRANSPORT

In the CCT's North Western growth axis, public transport provision is inadequate and people are automobile dependent. As a result, roads are at their capacity and further developments in the study area have been temporarily delayed until critical bulk services have been provided. Peak period congestion along the main North-South routes that serve the northern residential neighbourhoods currently experiences amongst the worst citywide congestion delays. The Koeberg safety restrictions mentioned earlier ^{is} a major contribution to the restrictions on development until road networks have been improved.

Integration of the low-income settlements into the surrounding urban fabric, and the area as a whole with the Southern area, requires new linkages, improvement of the public transportation network, support for the mixed use of land and the development of activity streets.

3.3. SPATIAL CONSTRAINTS TO DEVELOPMENT

The indicated study area is dominated with unsustainable growth. On the whole existing restrictions are ignored, such as building within the 5km Koeberg radius (e.g. Van Riebeeckstrand residential ^{area}) and within the 800m radius for toxic dumpsites. Most bulk services are either at or nearing capacity, including sewerage works, landfill sites, and water reserves. Although restrictions have been placed on rights to land until a new sewerage plant is constructed, informal settlements are nevertheless supplied with unmetered free water and flush toilets. Studies have identified the urban edge, the best arable land and areas of environmental significance, but not much has been implemented in terms of prioritizing where development cannot go. Areas need to be designated and zoned for certain uses with different restrictions placed on them.

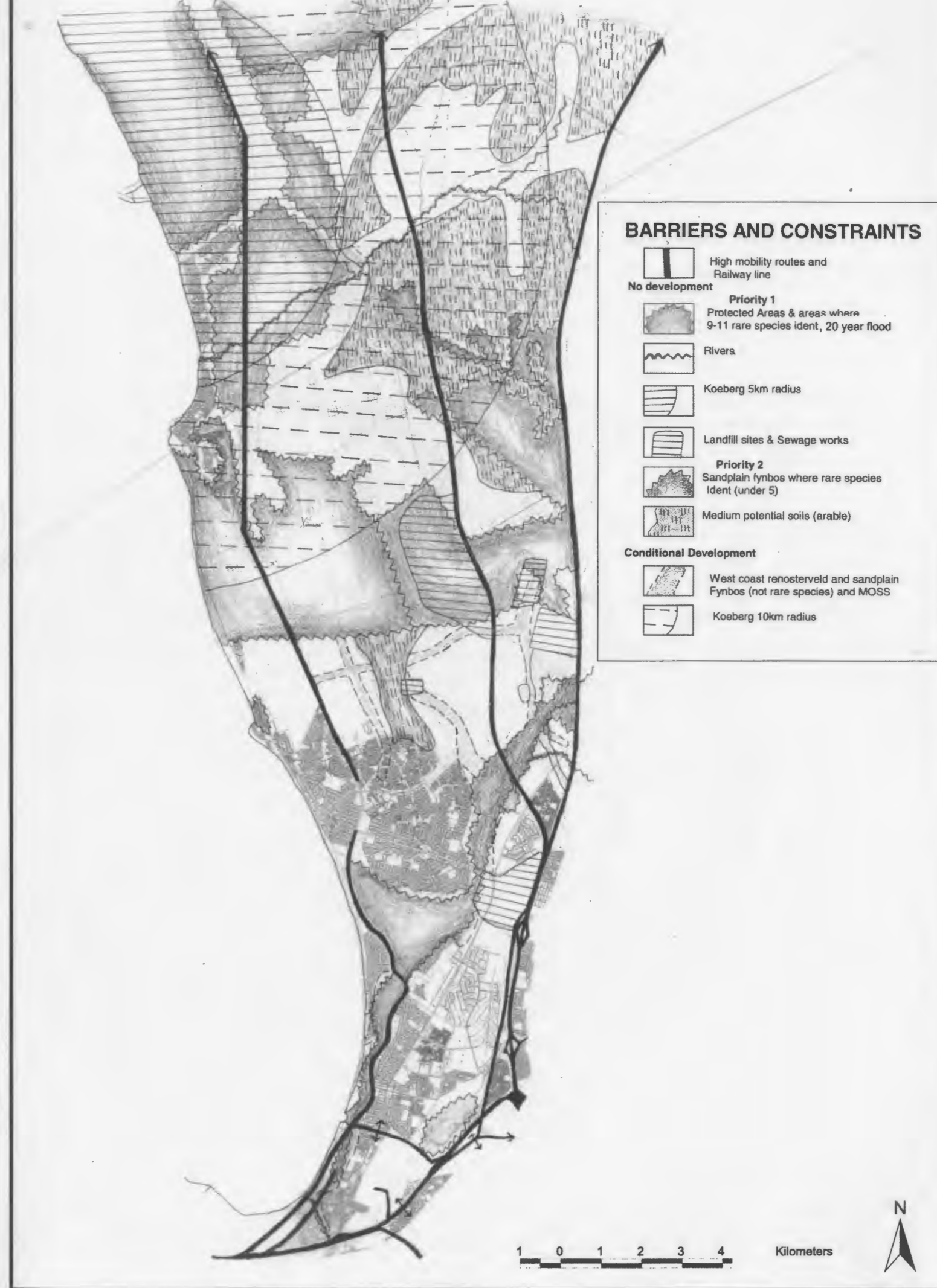
Map 21 combines all the information gathered in Section 2 that indicates both the urban and natural constraints to development. Shown in this map are the high mobility routes, railway lines and rivers that can be viewed as barriers to movement. To cross these barriers a station, crossing or bridge would be needed for pedestrian and vehicular traffic. As discussed earlier the barrier that the Diep River represents is one reason that the plan to extend Koeberg Rd has not been implemented. Areas where residential development definitely cannot go are labelled as Priority 1 areas on Map 21. Included are the existing protected areas, rivers with a 20-year flood-line and areas in the Sandplain Fynbos where 9 to 11 rare plant species are found. The urban-related Priority 1 constraints that are in place for safety reasons, and that impact on residential areas are: existing and proposed landfill sites, sewerage works, and the Koeberg 5km safety zone. The constraints in place only allow power station developments and existing land rights.

While Priority 2 constraints also restrict development, if a choice has to be made to develop, these are areas that should be chosen in preference to the above Priority 1 areas. Priority 2 areas consist of those that have the most agricultural potential (medium soil potential) and Sandplain Fynbos where some rare plant species have been identified (under 5 species). Although soil is not ideal for agriculture in the study area, much of the land is in agricultural use (refer to map 9). Allowing for agriculture in this area calls for the best-suited land to be identified and protected in this regard. Land that is not being used already or becomes available may be identified for small farmer development initiatives.

Areas that may conditionally accommodate development are those where fynbos and West Coast Renosterveld exists but that do not indicate any rare species, water bodies, areas designated in the latest Blaauwberg Spatial Development Plan for MOSS, and the Koeberg 10km zone.

Map 22 is a simplified version of Map 21, combining the constraints into areas where development cannot happen and where development can be conditionally allowed, in order to draw out the areas left over which do not have constraints. This is easier to read than Map 21, which can be referred back to for a more detailed view.

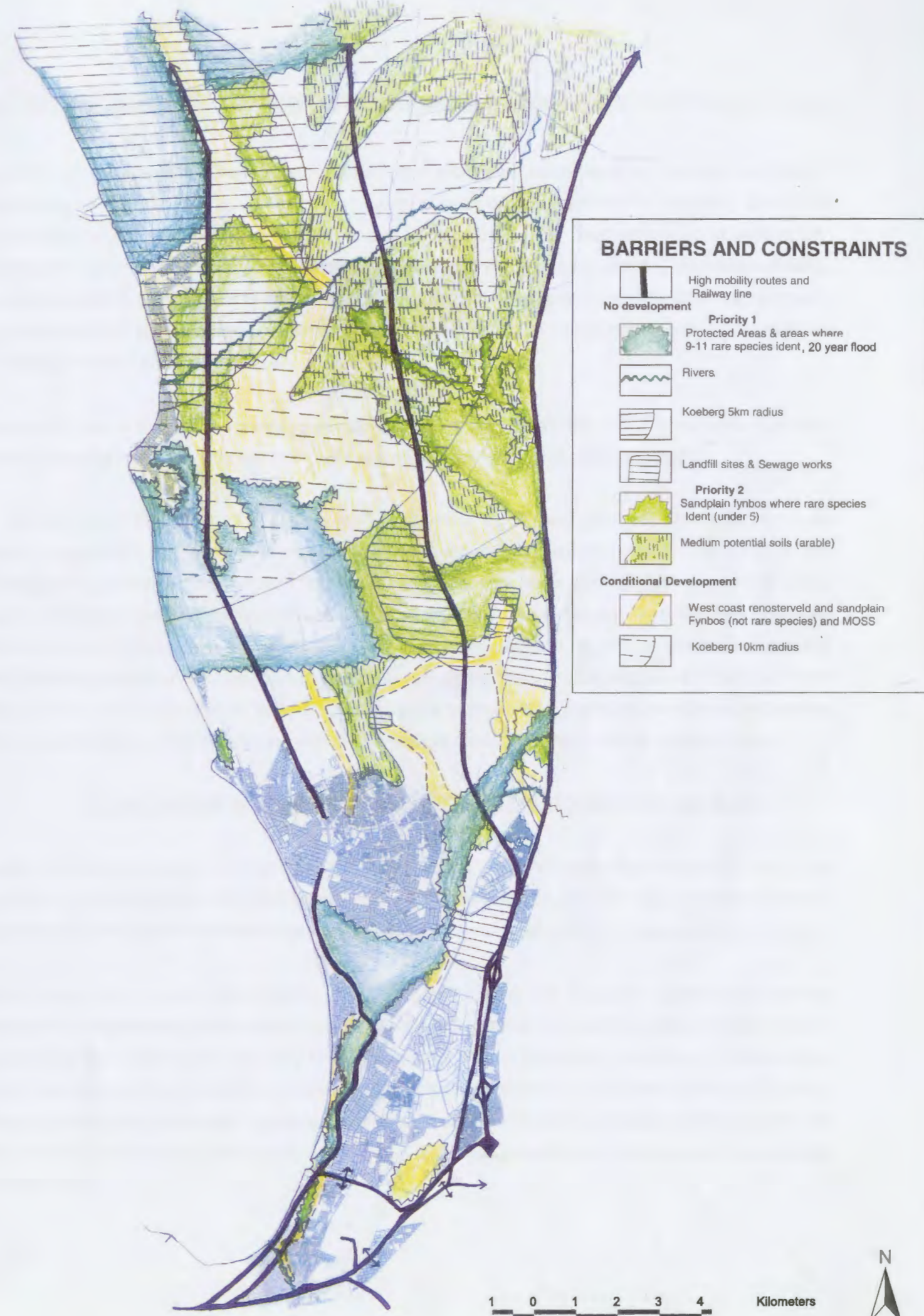
Many existing informal settlements are not the appropriately located for insitu upgrading. They are either situated on Priority 1 constraint areas or they are situated on private land. Map 22 demonstrates the ownership of land that is not part of the Priority 1 constraint areas.



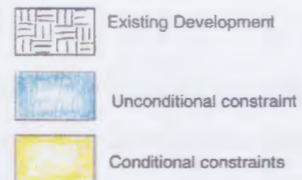
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Many existing informal settlements are not the appropriately located for insitu upgrading. They are either situated on Priority 1 constraint areas or they are situated on private land. Map 22 demonstrates the ownership of land that is not part of the Priority 1 constraint areas.



DEVELOPMENT CONSTRAINTS



SECTION 4: THEORY AND PRECEDENT

A review of influences on current approaches and strategies being used to upgrade low-income settlements in the City of Cape Town is relevant to possible interventions in my study area. The international background to how governments and organisations have been influenced in dealing with low-income housing provision to date explains why this topic has gained its stature. International trends are summarised in the first part of this section, based on an overview report provided by Habitat (2002) and an analysis of visual settlement planning (ViSP) applications to informal settlements in South Africa by Abbott, Martinez and Huchzermeyer (2001).

The second part of this section provides an overview of currently held views of the Greenfields approach and the Upgrade approach, the two main approaches to dealing with informal settlements.

Of particular importance in part 3 of this section, a review of different proposed strategies and case studies associated with the two dominant approaches to low-income settlements serves as a key source for suggesting possible interventions. The approach to informal settlement upgrading presently being used in Durban (eThwেকini) municipality, as well as approaches adopted in other in developing countries, will be discussed. Associating these strategies and case study experiences with the Upgrading approach and Greenfield approach is based on two particular and distinguished academics views. These are John Abbott et al's (2001) approach to Insitu Upgrading and a framework for planning low-income settlements set out by Dave Dewar (2002), dealing with the Greenfield approach in an as yet unpublished book.

4.1. AN OVERVIEW OF SHIFTING INTEREST IN LOW INCOME SETTLEMENTS

Based on reports provided by Habitat (2002) and Abbott, Martinez and Huchzermeyer (2001), the objective of reviewing the events and debates around informal settlements that have influenced politics, legislation and theoretical debates in South Africa, is to understand why this topic has such status today.

Abbott et al (2001) have noted that in the 1950s and 1960s the dominant approach to informal settlements internationally, was that of demolition and replacement with public housing. Habitat (2002), on the other hand, states that this only took root in the 1970s in developing countries, in an era when social housing was the predominant approach to shelter strategies for the poorer sectors of society. These social housing strategies, including government-built housing estates, highly subsidized units and rent controls for enhancing affordability, had largely benefited middle-class families and civil servants (Habitat, 2002).

On the whole, the poorest of the urban poor were left behind in urban developments and subjected to forced evictions and demolition. When progressive governments used either resettlement, or clearance and redevelopment strategies, people living in poverty were relocated to the city's periphery, or slums were moved to temporary locations while waiting for permanent accommodation (Habitat, 2002). During the predominance of a Master Plan approach, informal settlements were not a recognised component of urban development, which explains why Non Government Organisations (NGOs) subsequently emerged to act as advocates for the urban poor.

During the 1960s, academics such as John Turner called for a shift to greater autonomy and increased dweller control in the production of housing, which according to Abbot et al (2001) contributed to the shift towards social housing associated with the self-help approach. The delivery of 'site-and-service' and in-situ slum upgrading increasingly became a focus of provision, accompanied by governments in developing countries calling for the World Bank to extend loans to the urban housing sphere. By 1972 the World Bank's agreement was forthcoming, on condition that there would be a shift away from public housing to housing based on economic criteria related to financial costs in developing countries (Abbott et al, 2001).

Thus it was in the 1970s that informal settlements were first recognised and incorporated into plans, increasingly allowing the poor to have a say in urban planning (Habitat, 2002). In the site and service approach, governments supplied basic infrastructure and services and residents invested in constructing their own housing. This shift also allowed for the development of the informal renting market, which is now a dominant form of urban shelter for the urban poor in many countries.

However, as reported by Habitat (2002) home-ownership and full cost recovery continued to make many schemes unaffordable to the poorest. The urban upgrading approach was either neighbourhood-specific or city-wide. City-wide upgrading tended to provide a minimum standard service to the entire city, while neighbourhood upgrading offered the poor additional support in the form of access to loans, security of tenure, training and social programmes. Engaging with both of these approaches lent legitimacy to emerging community-based organizations that promoted the interests of the urban poor (Habitat, 2002).

The 1980's debt crises that spread across the globe resulted in structural adjustment policies, in which governments cut back on all but the most essential services. According to Habitat (2002), the suffering caused to those living in poverty was due largely to a widespread loss of income and livelihoods. In parallel, most international aid donors at this time promoted an enabling approach that emphasized the downsizing of government, increased efficiency and productivity, and ultimately encouraged private-sector management (Habitat, 2002). Abbot et al (2001) note that the World Bank and International Monetary Fund (IMF) imposition of macro economic reforms led to the thrust of policies in developing

countries shifting from social welfare concerns to a market-driven promotion of economic growth (Abbott et al, 2001). Governments appear to have withdrawn from the housing sector at this time, relying increasingly on the private sector as the primary engine for housing delivery. One of the results, the consequences of which we are still faced with today, was that local governments sometimes lost the potential for cross-subsidization by granting monopoly contracts to the private sector, as noted by Habitat (2002). Companies were clearly not prepared to make major investments in infrastructure to reach informal settlements, and were equally unwilling to provide services to those who could not pay.

From the 1980s to the early '90s, decentralisation of government was accompanied by policies promoted by people's organisations, NGOs and professional associations as part of a broader demand for more accountable and democratic government (Habitat, 2002), and at least partially in response to declining funds from central government. By the 1990s, the World Bank had begun to recognise that good governance was needed for economic enablement to occur (Abbott et al, 2001). It appears that the limits of growth-based policies and private-sector models were being realised by this time. A multi-dimensional understanding of urban poverty gradually replaced the materialistic definition of poverty used in the policies that surfaced between the 1960s and 1980s. The emergence of an Urban Governance approach that focuses on defining roles, accountability and the importance of participatory urban decision-making (Habitat, 2002), arose out of these realisations.

The position of the United Nation's paralleled the policy shifts of the World Bank since the 1970s. While strongly supporting the upgrading of informal settlements and the provision of services and housing for the urban poor, it was only by 1996 that the issue of housing was revived in international agendas, notably in the Habitat 2 Conference (Abbott et al, 2001 and Habitat, 2002). The right to affordable shelter, access to land and secure tenure, and the elimination of forced evictions was promoted. However, according to Habitat (2001) this agenda (the Habitat Agenda) was seen by some as a wish list rather than a realistic programme of action.

More recently the housing agenda was again revived, but this time identifying security of tenure – the elimination of unlawful evictions and the availability of residential tenure that renders slum dwellers urban citizens - as a strategic point to start with tackling issues of affordable shelter and urban upgrading. The eradication of poverty aims that featured centrally at the Millennium Summit of September 2000, resulted in a commitment by heads of state from 189 countries in the Millennium Declaration, to halve the proportion of people living in extreme poverty by 2015. Together with a focus on doubling the number of people with access to safe drinking water and sanitation in the same time frame, international declarations aimed at achieving significant improvements in lives of 100 million slum dwellers by 2020 (Habitat, 2002).

Subsequently, the Johannesburg Declaration on Sustainable Development was adopted during the World Summit for Sustainable Development (WSSD) in August 2002. Building on the momentum instigated at the 2000 Millennium Summit, governments agreed to include "adequate shelter" among the six basic requirements of sustainable development and re-affirmed the target to halve the number of people without access to water and sanitation by 2015. As Habitat (2000) reminds us, to implement this agreement governments produced the Plan of Implementation of WSSD, referencing the actions Member States can take to achieve sustainable development.

While the developments discussed above backgrounds the status that the problem of informal settlements has assumed as a key challenge in South Africa today, the question of pre-empting the problem has still not taken off in either national or international debates. The idea that Greenfield sites can accommodate low-income settlements may have been sidelined as having been associated with private developers, or at the most, public-private partnerships. Although local government officials may aim to ensure that private developers accommodate low-income settlements, these do not adequately deal with the lowest income earners or unemployed who cannot always afford to be part of housing subsidy schemes. Not many initiatives have been proposed or adopted by officials in South Africa that may pre-empt informal settlement through Greenfield sites that accommodate the lowest income earners and unemployed. Instead of exploring such pro-active approaches, all the energy appears to be directed at formalising the existing informal settlements.

The following discussion covers a brief overview on how the two main approaches to low-income settlements - the Greenfield approach and Upgrade approach – are currently perceived in the South African context.

4.2. EXAMINING APPROACHES TO LOW INCOME SETTLEMENTS

Addressing the problems associated with continuing informal settlement potentially offers two strategies that could be adopted by local authority officials. Municipalities could move forward in getting ahead of the problem through the identification and preparation of land prior to settlement occurring, and simultaneously deal with the existing problems by upgrading existing informal settlements. Preferably these two strategies would be applied together. Prior to examining dual approaches as a strategy in more detail through the use of case studies, how the different approaches have come to be understood is discussed.

One document that illustrates current understanding is the Informal Settlement Handbook (2003), produced by the Western Cape Department of Housing with the assistance of the City of Cape Town, which describes informal settlements as:

"Residential areas that do not comply with local authority requirements for conventional (formal) townships. They are typically, unauthorized and are invariably located upon land that has not been proclaimed for residential use. They exist because urbanization has grown faster than the ability of government to provide land, infrastructure and homes"

(<http://www.capegateway.gov.za/Text/2003/introduction.pdf>, 13/8/2004)

This description states that the only way informal settlements can be considered formal and therefore acceptable, is to upgrade or plan them to look like conventional townships, meaning conventional dwellings and associated levels of service, such as flush toilets.

Further discussion in this report will suggest alternatives to the conventional outcomes of upgrading informal settlements that nevertheless allow them to be legalised and even considered formal. It will be shown that upgraded low-income settlements may still consist of largely informal dwellings and be provided with alternative and affordable services, such as adequate sanitation systems other than flush toilets. To initiate this discussion, Abbott et al's *(2001) views on differences between the Upgrade approach and Greenfield approach to low-income settlements are examined, as listed in the following table (Table 5).

Table 5: Differences between the Upgrade and Greenfields Approaches

Spatial focus	
Upgrading approach	Greenfield approach *
Identifiable community	Non-identifiable community
Community driven	Developer Driven
Planning for social integration	Planning for physical development
Requires planning "zone of special interest"	Accommodated within the generic zoning legislation
Require flexible standards	Accommodated within existing by-laws
Based on an integrated development plan	Based on a land-use plan
Security of tenure primary objective	Ownership driven development
Construction for internal benefit	Construction for external benefits
Primary thrust is economic and social development	Primary thrust is residential development
Infrastructure focus	
Objective is economic development and social inclusion	Based on housing codes
Services can be disaggregated (roads about access and storm water about safety)	Physical services designed together to retain linkage between storm water and roads
Temporary and rudimentary communal services provided until individual services provided.	The erf is the point of collection or delivery

(Abbott et al,* 2001)

* is Abbott et al's specification of the Greenfield approach as essentially that of formal residential development the only possibility. → what about incremental projects? → OK: follows

Abbott *et al**, (2001) appear to be promoting insitu upgrading as the best form of development for low-income settlements, as demonstrated in the views shown in the table above. The sense that investment in Greenfield sites is driven by private developers and geared towards residential development is expressed in a view that more or less removes low-income settlements from Greenfield developments as a recommended public sector option. This view has partly influenced the exclusion of this option by public authorities, which concern themselves with Upgrading for dealing with the problem, rather than with pre-empting the problem. This lack of encouragement has contributed to the dominant focus on upgrading existing settlements and a scarcity of initiatives that explore the provision of Greenfield sites for future informal dwellers.

The two approaches can be broken down into 5 categories in which project implementation can occur. These 5 categories are based on Wilkinson *et al's* (1979) prior publication on the 'incremental approach'. A key difference identified between these approaches is the characteristic that the user is either unknown or known. The Greenfield approach may be broken down into two main categories (Wilkinson et al, 1979) with distinct characteristics, as follows:

1. Unknown users, undeveloped sites, heavily predetermined and with a minimal role for users, where the layout would be based on a simple grid system. Within this would be the final proposals for different levels of infrastructure services, and the size and distribution of community services and facilities to allow individual household choices according to affordability and lifestyle preferences. In reality this choice is limited to those who can pay, and broader community participation is lost. However this category could be a preliminary proposal to initiate dialogue with the user community.
2. Unknown users, undeveloped, minimum pre-determined, with maximum role-playing for users, which overcomes shortfalls in first approach. The difference here is that individuals are identified and offered positions in the site. At an early stage discussions are set up to decide how community money can best be used for the first financial year and how community action can spread resources.

It is interesting to note that Dave Dewar's approach, which will be discussed in more detail later, comprises a bit of both of the above categories. Through case studies he has managed to come up with a strategy to accommodate and plan for low-income settlements based on the spatial dynamics that already exist in informal settlements. My own suggestion of a Greenfield approach on planning for low-income settlements will draw mostly on this kind of approach.

The Upgrade approach is broken down by Wilkinson et al (1979) into three main categories, characterised as follows:

1. Known community, undeveloped site, maximum role-playing for users, in a roll-over approach that is used when informal settlements have to be moved. Community would be approached at an early stage to discuss basic decisions (even on the primary grid). One level of infrastructure services would be decided by the community and provided, with the assumption that the whole settlement would be upgraded simultaneously as general incomes rise. Neighbourhood associations would be preserved in the move through the existing local ward committees and representative bodies.
2. Known community, developed site (informal settlement), maximum role playing for users in an insitu upgrading, where established informal communities have social, economic, organisational and physical characteristics that are worth reinforcing wherever possible. In this category of settlement, upgrading works with these existing characteristics as much as possible. Through community participation and job creation, higher levels of services would be installed as affordable, and people would be offered the opportunity to improve their housing stock.
3. Partly known community where the present users are known, but future users are unknown, developed site that is formally developed. This key characteristic of this approach would be to infill settlements around existing formal structures.

The Informal Settlement Handbook provides further reference in describing the different upgrade approaches that are currently considered depending on the circumstances surrounding the settlement (WC DoH, 2003). The main ones that may be applied to my focus study area are listed below, with their strengths and weaknesses:

- Basic Infrastructure: Temporary level of services is required to be provided to all informal settlements on private land. This was described earlier in section 1. This approach risks establishing a sense of permanence, encouraging non-payment of services, and attracting immigration. However it does help create local jobs and complies with the minimum health criteria to prevent the creation of health hazards.
- Emergency Services: When a temporary informal settlement accommodates people during a disaster situation, defined in terms of the municipality's disaster management plan, 'emergency' measures may be adopted. While this approach often risks creating a sense of permanence and attracting immigrants, it may fast track the process of basic infrastructure provision.
- Roll-over Upgrade: Here, a portion of land adjoining the settlement is cleared, levelled and serviced and then occupied by residents of a portion of the settlement. The vacated portion is then cleared, levelled and serviced etc until all residents are located on serviced, habitable land. It is applicable when there is the possibility of clearing a large piece of land and the terrain itself

cannot be serviced. This approach would require a relatively nearby site that is available, easily accessible and big enough to accommodate the informal settlement.

- **Insitu Upgrade:** When the informal settlement is upgraded as it stands, relocating as few dwellings as needed, roads and infrastructure are fitted in with existing patterns. Sites have differing shapes and sizes and it may be too expensive to provide conventional services. This approach is applied when limited land is available for the roll-over upgrading. This is the most attractive option as it maintains the existing social infrastructure and allows for more community involvement and choice in the upgrading process

For existing informal settlements, insitu-upgrading is currently the preferred choice. However this is largely dependent on ownership of land and physical conditions of the land itself. Cape Town's informal settlements are categorised mainly in terms of whether they are on private or public land. In my specific study area the informal settlements are mostly settled on private land or already designated public land, hence the roll-over and Greenfield approaches need to be considered. Insitu upgrading would also depend on safety criteria such as flood-lines, whether within a 5km radius of Koeberg power station, and the geophysical conditions, such as unstable ground that may be settled upon.

At the moment, Cape Town's dominant approach to all existing informal settlements is the provision of emergency and basic services. As mentioned in Section 2, large amounts of capital have gone into this type of service provision, with exorbitant operation and maintenance costs still to come. Arguing that resources could be better spent, I will further develop the suggestion that upgrading certain appropriate settlements may be accompanied by identifying appropriate Greenfield sites that could accommodate low-income settlements, providing the basic services needed and then relocating people onto these sites.

4.3. DEALING WITH EXISTING INFORMAL SETTLEMENTS: UPGRADING STRATEGIES

From a political and policy perspective, informal settlements are now accepted as a reality and the predominant policy response is in-situ upgrading of some settlements. As discussed earlier, the City of Cape Town's strategy for upgrading informal settlements is not adequate to address the task confronted, largely related to its institutional structure and the particular approach taken in upgrading. A major constraint is the lack of an overall program and the absence of documentation of trials and experiences that would enable learning by the municipality. As Dewar (2004) has noted is usually the case, in current city practice upgrading is taken simply to mean the provision of utility services. Hence the focus of the discussion will now move to examining more comprehensive insitu upgrading strategies.

Understanding the upgrade approach to informal settlements is informed by John Abbott et al's (2001) study, the upgrading strategy presently being used in Durban (Ethekewini), and various strategies that have been used in other developing countries in a collection of best-practice case studies. Ethekewini has been noted in current research of service delivery to informal settlements (Lagardien & Cousins, 2003) for having the most efficient strategy and program to deal with upgrading informal settlements out of the three major metropolitan municipalities in South Africa, as compared with Johannesburg and Cape Town. Reviewing this range of approaches and strategies is to inform my own view on how existing informal settlements should best be dealt with in my selected study area in the City of Cape Town.

4.3.1 JOHN ABBOTT'S FRAMEWORK FOR INSITU UPGRADING

Abbott and Douglas's (2001) report presents a methodological framework for upgrading high-density informal settlements, and is based on their experience of the New Rest Informal Settlement upgrading project. This report has had a major influence on how people (including myself) think about informal settlement upgrading. As set out in the summary below, the main emphasis of the methodology presented in their report is on data capturing, the institutional framework and the planning framework.

4.3.1.1. Data capturing

The first step to insitu upgrading that is identified and described by Abbott et al (2001*) is data capturing and collection. It is suggested that the spatial definition of shacks can be collected through geo-referencing images of the site, and once shacks have been identified, the data collection process can start. This consists of two streams: Data on the physical environment is defined through a spatial information management system, and social and economic data is based on survey questionnaires. Although data capturing is a crucial first step in the upgrade process, I will not be focusing on this due to lack of time. For more details on this procedure, Abbott et al's (2001*) report can be referred to.

4.3.1.2. Institutional Framework for Informal Settlement Upgrading

Abbott et al (2001*) have suggested an institutional framework to assist the City of Cape Town, as an inefficient institutional framework is the main reason given for the inefficient implementation of program funds available for upgrading informal settlements. As communities are reportedly displeased with the progress and results of upgrade projects, this aspect needs also to be addressed within this framework.

The roles of professionals, and how these are used in traditional Greenfield sites, is explained by Abbot et al (2001) as needing to change when dealing with upgrading informal settlements. A breakdown of roles towards this end is given below:

- The role of **Land Surveyors** changes to dealing with individual shacks at a micro-level, and boundary of area occupied by dwellings at a macro-level, rather than erf boundaries. Shacks need to be grouped according to needs of families that occupy them and not externally determined. Rather than formalizing cadastre as the first step (as in Greenfield sites), this is the last step in informal settlement insitu upgrading.
- The role of **Spatial Planners** changes to being constructed around economic and social needs of the wider community and then the individual families, rather than spatial. Spatial relationships are created to support and enhance these relationships.
- The role of **Civil Engineers** in upgrading is different to that in Greenfield sites. Instead of codes and integration of physical services, the primary objectives of upgrading are economic development and social integration. This requires the following changes: Services are disaggregated and follow a 2-stage design process; stormwater and roads are disaggregated; more flexibility in water and sanitation options; a hierarchical approach differentiates all infrastructure between a collective (communal level) and individual function.

The institutional structure as related to community participation is where Public Participation plays a large role in insitu upgrading and is viewed as crucial throughout the project. The relationship between professionals and community is oriented around social integration and economic development. Therefore, this aspect of insitu upgrade projects is much longer and more complicated than it would be in Greenfield sites. Abbot et al (2001) explain community participation as comprising the following elements:

- **Community and wider society relationship's** need to be normalized by convincing politicians and line department to accept informal settlement and upgrading.
- The argument for a policy on **Gender Equity** in the community is more or less adopted by the City of Cape Town. Data has shown that there is a large percentage of female-headed households in informal settlements. The rationale for a gender equity focus is that female-headed households are financially responsible for more household occupants than are male-headed households, and they have to manage the tasks with lower incomes.
- The creation of **partnerships between the Local Authority and the community** through steering committees is promoted. New Rest used an approach of community enablement, where government allowed the creation of an enabling legislative environment for communities to operate in; but this fails when the interface between community and government is challenged by conflict. In this respect the role of the People's Housing Process becomes an important model.
- A structured set of **organizational relationships within a community** with the capacity to deal with multi-faceted upgrading processes involves community building, development and involvement in the planning process.

There are 3 organizational models that can be used in organizational relationship building. The first is the single community model. This is the basis for the People's Housing Process and Homeless Peoples Federation where a community group is formed to take responsibility for development through use of a savings club. For example, in the Victoria Mxenge housing project in Cape Town, the women's savings groups took responsibility for a house-building project. The second model is the duality model. This builds on the first model by establishing a community-based vehicle (e.g. a Development Trust) to manage the project and a social organization to take responsibility for community input and representation. This model is the most unstable as finances are eventually dominated by the trust, resulting in conflict and single entity domination.

The last model, the 3-grouped model, is the model that Abbott et al (2001*) promotes. This uses a development trust (deals with development activities), a civic association (deals with political issues and community action) and a collective community group to voice concerns and protect the interests of the user group. Drawing from the New Rest project experience, a possible way to solve conflicts that arise is through the engagement of a specialist operation and maintenance NGO.

To overcome social exclusion Abbott et al (2001*) introduces the concept of Community Development Workers (CDWs) as opposed to Community Liaison Officers (CLO's). The CLO's role, still being used in the CCT today, is limited to information transmission and gaining support for developers in the wider community. CDWs would be community members who are trained and monitored by an experienced social worker to facilitate the community development process. They are then to be managed and led to conduct a community-based household socio-economic and community needs analysis. Their responsibilities include training and servicing block-base Housing and Savings Associations, ensuring information dissemination and distribution of information, and ongoing negotiations between community members and official role-players.

The mechanisms through which this is to be achieved are: home visits; individual consultation in project office inside settlement; meetings with specific groups according to demand; sectoral meetings with a group of streets or block of shacks; meetings specifically for capacity building and decision-making with reference group (key informants); larger meetings and seminars with all residents; meetings with an interdisciplinary team and involvement in organization and planning activities. In the second phase of the project the CDWs role would grow to ensure household involvement in project decision-making on infrastructure, plots and a People's Housing delivery process. It is suggested that CDWs would be employed on a 12-month -contract that is renewable and subject to review. Most of the work is to be done within the first year, after which the main function would be supporting and consolidating structures, processes and mechanisms established in the first year.

Social workers should be stationed full-time in the community and be responsible for the management, training and monitoring of CDWs. The social worker should also prepare and conduct qualitative social research, looking at social issues related to levels of services, payment and concerns, working with external parties. The aim is to bridge the gap between technical staff, professionals and the people.

4.3.1.3. Planning Framework

The planning framework that is set out by Abbott and Douglas (2001*) is particularly helpful as a guide to the different elements that need to be planned. They indicate 5 main steps to be taken to establish a planning framework in an insitu upgrade project as: defining movement corridors; defining socio-economic structures; dealing with relocations; providing infrastructure services; and as the last step, land regularization. These steps are explained in sequence below.

- **Movement**

Defining movement corridors, based on existing desire lines, is the first step in spatial planning. Roads should be defined as movement corridors as they reflect multi-functional usage in respect of both movement and socio-economic spaces. The insitu upgrade approach may limit vehicular access while recognizing the need for emergency, service and delivery vehicle access. The three socio-economic spatial elements set out below are all influenced by this movement pattern.

- **Socio-economic structures** = public spaces?

1. A hierarchy of public spaces related to movement systems comprises activities and events that are ordered according to needs for public access or privacy.
2. Economic opportunities are created within the collective, public social space network, where small-scale economic activities and street trading can be sustained.
3. A network of public social facilities can be consolidated into a public web that offers optimal and sustainable benefits to the community and meets their immediate basic needs.

- **Internal relocations**

The major aim in insitu upgrading is to work with existing structures and minimize relocations. Integrating major servitudes into movement networks reduces the impact of relocations. Flooding is another common reason for relocations of informal settlement. To reduce the extent to which families are affected by flooding, storm-water needs to be intercepted upstream of the settlement so as to flow via another route. Alternatively, dwellings could be raised by means of the use of infill material.

At a micro planning level, the focus is to be on specific needs of the group occupying a particular block rather than the community as a whole. Clearly defined spatial blocks create zones of local interest and define the residents that have direct interest in their particular area. The suggested average size of a

block is 150 dwellings, to allow effective community development management and community planning methodologies for decision-making.

Since land boundaries and demarcation are not in yet in place at this stage, the framework allows families to continue to move freely within a settlement. Shack owners can thus explore different options for the use of space in blocks, regarding shared and private land use. In this phase, the role of the appointed professional (urban designer or architect) would primarily be that of a facilitator, guiding a community-based planning process.

- **Provision of infrastructure services**

Different services are integrated into the upgrading process at different points. The impact of rainfall and runoff is taken into account at an early stage of analysis as it informs possible relocations. Movement networks are determined in terms of social space rather than road hierarchy in order that pavement design accommodates multi-functional usage. Informal settlement upgrading does not need to retain linkages between the provision of these different services, since less road surface reduces the contribution of roads to storm-water runoff generation, and therefore do not need to be linked.

Abbotts et al (2001*) proposed a two-tier upgrading of sanitation options in which the core road network would be designed with the conventional sewerage, while smaller blocks defined by the primary road network use the shallow sewer system. Although acknowledging that alternative sanitation systems are available, such as dry on-site systems, the argument that services should be viewed independently is debatable. For one thing, as will be shown in the Durban case study, the type of structure for water provision can differ substantially when used with on-site, dry sanitation options. While dry sanitation systems are not considered a long-term option, I will argue later in the document that this is a feasible option. However, I do agree with the de-linking of other forms of infrastructure mentioned above.

Abbotts et al (2001*) also accommodate water services into a two stage design process. A distinction needs to be drawn between emergency supply for immediate health reasons and permanent supply provided later in the upgrade process. It is proposed that the permanent supply is only installed once the primary movement network has been finalized.

- **Land Tenure/Land Regularization**

Once all of the above steps have been carried out, land regularization and issues of land tenure can be explored. Within informal settlements there are no formal site boundaries, just shacks, while boundaries at a macro-level are defined by the total area occupied by dwellings. Spatial relations are created to support and enhance social and economic needs of the wider community and then of individual families. Numbering shacks helps to stop movement onto the site. Defining cadastral boundaries at this stage

required by the state?

would inhibit the upgrading process and reduce choice. Communities in informal settlements have 3 forms of land ownership to choose from. These are:

- 1) Entire settlement has shared and common legal right to all the land (legal or vested trust), including public space, movement infrastructure and physical infrastructure services;
- 2) Residents of individual blocks bounded by the movement network and external boundary choose a form of common ownership of land within that block. In this case the movement network and major services would be responsibility of the local authority. This allows high flexibility in terms of housing design;
- 3) Families decide on individual ownership, which could occur within the 2nd option as well.

Legal demarcation of cadastre for settlement occurs as the final step in the upgrading process, once all the other issues relating to space, housing and services have been agreed (not necessarily implemented). Like land regularization, housing debates should be the outcome of the upgrade process.

As summarized above the approach to insitu upgrading proposed by Abbot et al (2001) deals mostly with the best form of data capturing, an appropriate institutional framework and a suitable planning framework. Examining the Ethekwini case study will provide more insight into detail at an implementation level.

4.3.2. DURBAN (ETHEKWINI) FRAMEWORK FOR INSITU UPGRADING

Recent research comparing three major metropolitan (Durban/eThekwini; Johannesburg; Cape Town) interventions in the provision of basic services to informal settlements, shows that Ethekwini Municipality has proved to be the most accomplished (Lagardien & Cousins, 2003) in this endeavour. The manifestation of a comprehensive implementation program that is geared towards service provision to low income settlements has generated readily accessible guidelines for servicing the poor.

Although this case study is based on experience in rural periphery areas of the municipality, valuable lessons can be learnt by the City of Cape Town in terms of its strategy. Documented guidelines relating to the eThwekini strategy encompass community capacity building, community-based procurement and the provision of an affordable basic sanitation service to each household. Although Abbott et al's (2001) report has addressed community involvement throughout the insitu upgrade project, procurement for local job creation in the implementation of service provision was not explored. In creating employment in the user community through local procurement, the eTthekwini model and the lessons learnt in this experience may be useful to Cape Town, which does not have a set of implementation guidelines for its officials to follow.

The expectation in presenting and drawing from this case study is that eThekwini's model and Abbott's framework for insitu upgrading informal settlements may complement each other, providing aspects that each is lacking and thereby suggesting further improvements to both approaches.

4.3.2.1. Institutional Structure

The eThekwini programme for implementation of local procurement measures in service provision to non-serviced poor communities on the periphery may provide lessons for other metropolitan municipalities. In focusing on this model, it must be noted that the more central urban areas are considering adopting a similar strategy to the Ethekwini Water Services (EWS) Division model.

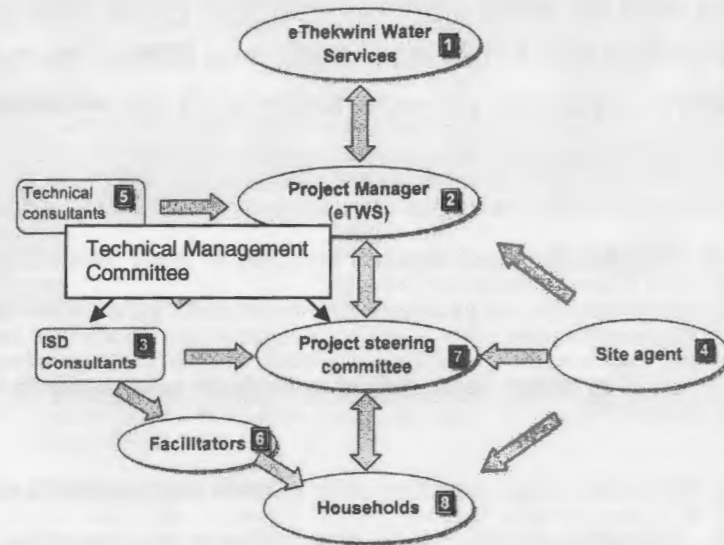
Three sources of funding for this programme are the Department of Water Affairs and Forestry (DWAF), the Consolidated Municipal Infrastructure Programme (CMIP), and eThekwini Municipality (eTM) itself. The municipality bears the operation and maintenance costs of services. The minimisation of operation, maintenance and administrative costs was the primary reason for developing the system as an affordable option. Interestingly, internal funding for recurrent expenditure is not deemed necessary and will be provided by eTM (eTM, 2002:6) from its allocation of the municipality's Equitable Share.

A fundamental difference between Ethekwini and the City of Cape Town, is that Cape Town appoints external professional consultants to run their upgrade projects while Durban uses in-house capacity to manage projects and targets local procurement to add capacity in the implementation process. Durban has tried using outside consultants and decided that they were too expensive, projects took too long and work was not up to the standard of pay.

The basic institutional structure of Ethekwini municipality set out below in **Fig 16**, has evolved annually.

-) limited to provision of water & sanitation infrastructure?

Fig 16: Ethekekwini institutional structure



eThekwini Water Services: Water and Sanitation Projects: Guidelines (eWS, 2003)

The eThekwini Water Services (eTWS) Construction Division acts as **Project Manager** (2) and now works with its **Training Division** (5) rather than hiring Technical Consultants. **ISD** (Institutional Social Development) **Consultants** (3) are emerging local consultants who are mentored and managed by the municipality. The **Project Steering Committee** (PSC) comprises around 12 people who are paid to meet on a monthly basis, and discuss community concerns and issues that are reported to the project management via the **Technical Management Committee** (TMC). The 2 or 3 community members who serve on the TMC are paid daily to contribute a management function alongside the Project Manager.

A **Site Agent** (4) is appointed by the Project Manager, on the advice of the TMC with community consultation through the PSC. This agent is either an internal staff or a Local Contractor procured locally for the task-based responsibility to lay out routes; identify suitable plumbing contractors; supply materials. The municipality plays a role in establishing a local supplier or manufacturing enterprise if none exist. The contractor employs local labourers chosen from the most needy households on a rotational basis by the PSC. Training and guiding local contractors and enterprises is undertaken by the municipality.

4.3.2.2. Procurement and Capacity Building in implementation

Community based procurement is targeted for facility construction, health and hygiene education and promotion and for those operation and maintenance functions required by the system of services offered.

Training offered is both formal and informal. An SMME skills development programme provides increased access to local contractors and suppliers to formally recognized training and entrepreneurial competencies. Local emerging contractors who have been trained by the municipality's programme manager will now have access to a Builder and a Quality Assessor Skills Programme (NQF levels 2 and 4) to enable learners to gain increasing levels of recognized and qualified skills.

In addition the following roles are subject to an integrated capacity building strategy:

- **Local ISD Consultants** are trained and mentored by officials on general objectives of the project and the training of local facilitators (attend PSC and TMC meetings).
- The ISD consultants train and mentor **Local Facilitators** to carry out project information dissemination and health and hygiene education. The duration of each project is a minimum of 6 months in which there are 5 visits per h/h during the delivery cycle. The cost of health and hygiene education, community consultation and capacity building is R400 per household. Supplementary education programmes during construction cost R50 per household.
- **Local emerging contractors** are trained and paid by the Municipality using a unit payment method. They get paid in accordance with delivery and accessibility to households. Contractors are paid for work done as stipulated. Payments are made 14 days from the date of approval of the contractors invoice. A 10% administration fee is withheld from each payment until the end of the contract to ensure good quality work.
- **Local labourers** are paid R70/day for full production as tasked by the contractor and get paid every 2 weeks. A minimum of 5 labourers supplied by contractor and another 5 are sourced by the TMC and PSC from the poorest families, and rotated every 4 weeks. Only 1 labourer is allowed p/hh.

The original design of the sanitation option required sweat equity from the household in construction. It was found that even after training, the inexperienced homeowner produced poor quality structures and progress was also very slow. A decision was taken by eTM to train and commission local builders to build the sanitation units. This led to a much better quality of structure and ensured that the delivery of sanitation kept pace with the water supply component.

The municipality considered the economics of infrastructure delivery and the persistent cholera threat as overriding the "ownership" value attributed to the nominal household sweat equity contributions. The potential "lack of ownership" resulting from a system delivered solely by the municipality is addressed through increased education and monitoring.

Registered **local plumbers** in the community are encouraged to complement municipal employees in attending to faults in the water supply reticulation system. There are three categories of local service provider, as follows: A=Artisan (outside community) is paid R125 p/hr; B=Semi-skilled or not trade tested is paid R107p/hr; C=Unskilled is paid R72p/hr and trained by category A. Water meter readers get paid R253 per month.

These procedures and guidelines have developed through experience-based learning that has improved on endeavours over time.

4.2.2.3. Implementation of water and sanitation technology options

⁶ Durban's Water Service Development Plan is split between rural and urban areas. Urban settlements relate to the waterborne edge and are supplied with either: Offsite sanitation - Full pressure connections with waterborne sewage; or On-site sanitation which is currently phasing out Ventilated Improved Pit latrines (VIP) in favour of the Urine Diversion System (UDS). These options may be communal in dense settlements. Rural settlements may either have Urine Diversion System (UDS) units installed as funded by the city (R325 p/hh), or waterborne sanitation but at their own costs (R2000 for installation and about R15 000 for water system).

The sanitation option offered to communities is based on the level of service that the municipality can afford to operate and maintain. UDS are considered full services along with the EBU systems in rural areas. The type of water service system also differs according which sanitation technology is chosen. If communities choose the UDS system, the Electronic Bailiff Systems are installed – both of these are explained in more detail below. Electronic Bailiff systems are considered a full level of services in Ethekewini (Jacque Rust, 16/08/2004).

The options offered to communities in Ethekewini are listed below:

- 1) Conventional water borne – connected to sewage infrastructure;
- 2) Waterborne on-site disposal – septic tank and associated soak-away;
- 3) Waterborne on-site collection (Conservancy tanks) and off-site disposal (emptying, disposal tanker);
- 4) Waterborne and on-site treatment (eg a privately owned and operated treatment plant);
- 5) Urine Diversion System toilet with double vaults – on-site collection and disposal.

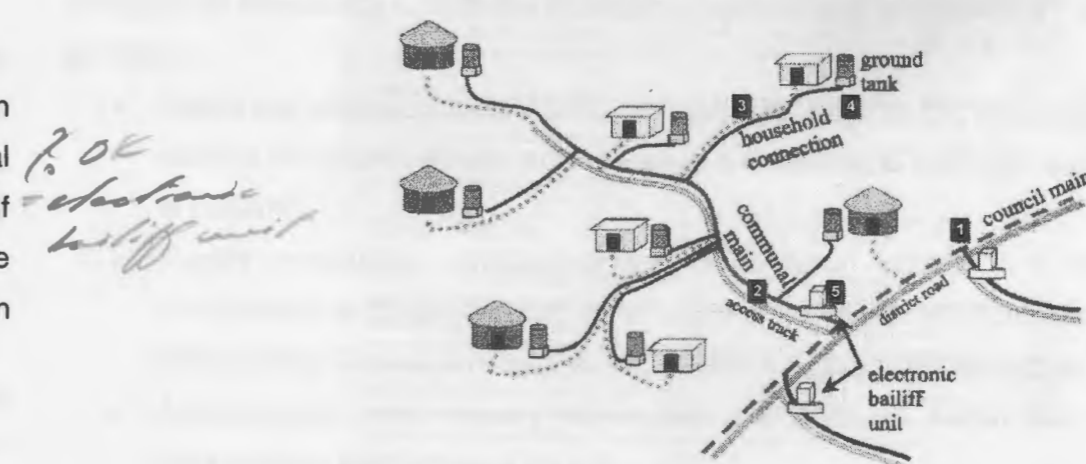
⁶ Based on interviews with EWS staff, Jacque Rust and Ednick Msweli: *Practitioners Workshop (16/08/2004) held at Peninsula Technikon.*

Requirements for each household are to complete an application form as well as make the payment of a water connection fee (R300.00). These are the key indicators to the municipality of the commitment of households to participate in the process.

Water supply⁷ is associated with the sanitation option offered. The currently preferred system is a pre-paid water tank system with a ground tank that provides higher levels of service than public standpipes at a lower operation and maintenance cost to the municipality. In order to reduce costs and in the interests of sustainability, each household is provided with the skills, materials and tools to maintain their own household water supply: They excavate their own trenches from the communal supply point to the position of the water supply tank as well as backfill the trench once pipe has been laid.

Central to the water supply is an electronic bailiff that ensures that the tank is filled daily. Households are responsible for maintaining their ground tanks, the pipes from the communal main to their tank and their toilets. The rest of the infrastructure is the responsibility of the Water Operations Branch. Registered plumbers in the community are encouraged to apply to the Branch to be included in municipal employees attending to faults.

Fig 17: Electronic Bailiff unit



(Source: Bailey, 2002).

Reticulation systems linked to the council mains are laid within road reserves of the road network, and pipes are laid according to SABS specifications, using labour-based construction methods. Communal mains (2) are laid from the council mains along footpaths and tracks used to access people's homes. These are small plastic pipes and extend to within 200 meters of every house. Community mains usually supply between 15 and 30 consumers. The homeowner excavates a 300mm deep trench and lays a 15mm plastic pipe from the tank to the community main (3), after which this pipe is the responsibility of

⁷ Ethekewini's water supply information is obtained from Bailey, R. (2002) "Application of the Durban Tank in a Rural Water Supply System", *eThekewini Water Services*

the user household. A local contracted plumber installs and connects a 200-liter tank on a plinth at the house (4). The tank inlet is controlled by a float valve arrangement, and its maintenance is the responsibility of the owner.

An electronic bailiff unit (EBU) is installed between the council main and the communal main. The EBU consists of an irrigation timer and control valve, and is housed in a steel cabinet together with a flow meter. The irrigation timer is set to open and close the control valve once a day and allow the tanks to fill. The opening time of individual supply zones are staggered over 24 hours to eliminate peak demands in the reticulation (source; Bailey 2002).

Some of the problems associated with public standpipes identified by EWS are that water contamination occurs between destinations, vandalism, and operation and maintenance (O&M) problems. The EBU system overcomes these problems. The cost of delivering water through EBU systems is R2900 p/hh. The average cost of bulk water supply including supply lines is R3000 p/hh, with a maximum of R4000. The Council funds its reservoirs. In addition, households are required to pay a connection fee for water services. Although the full costs of a ground tank are approx R560, the household pays a subsidized fee of R279. The Municipality makes up this balance as it is seen to offset future O & M costs.

The overall cost of infrastructure is reported to be no more than providing community standpipes within 200meters of each household. The cost of the EBU installation is less than the cost of providing a metered standpipe, although one EBU can service many households within a 1km distance. The average cost for capita for water is R388 for an assumed household of 6 persons. This excludes the bulk water supply infrastructure.

While UDS (Urine Diversion System) toilets have been working well in Mexico, Switzerland and Durban, the City of Cape Town does NOT consider this an option in their upgrade framework. Although forms of UDS have been tested in some informal settlements in Cape Town (eg. Vredehof) these have not been on a significant scale nor recognised by central city decision-makers.

The Urine Diversion used in eThekwini allows the urine to be diverted from the solid waste into a separate soak-away that is constructed next to the toilet. The waste goes into a vault that is well closed to prevent moisture and seepage of run-off water getting inside it. The reason for this kind of system is to reduce the smell and to form a safe and friable material by dehydrating the faeces, over an 8 month period. It is also easily maintained by household (Malgas, 2003).

Figure 18: Urine Diversion Systems



Pedestal and Urinal of UDS

One issue for the City of Cape Town is that the UDS option is generally being installed in rural municipal areas, on the assumption that on-site dry systems require more space. However, there are trials being conducted in Cape Town by city engineers at the moment (Tertius de Jager in Khayalitsa and Michael Page in Red Hill informal settlement) that could demonstrate locally that with some deviations the system can operate under higher density urban conditions.

In respect of affordability to both the municipality and the user community eThekwini's costing details are as follows:

- Health and sanitation costs: HSRC monitoring is R50p/hh; ISD consultant is R400 p/hh; Feasibility study is R130 p/hh; Project administration and training is R40p/hh; and Supplementary education is R50p/hh.
- Facility construction: Anticipated cost of sanitation installation is broken down to, Plant at R150p/toilet, and materials and construction at around R2 800 (actual cost R3500), with labour at R500 p/toilet; Contractors are paid R520 - R866.67 p/unit depending on distance from site camp.
- Administration costs: security R30p/toilet; staff R80p/hh; Admin R20 p/hh; site camp R25 p/hh (part of water reticulation) = R4 300.
- In addition each household is required to pay a connection fee for water. Full costs of a ground tank is approximately R560, though the household pays a subsidized fee of R279.

4.2.2.4. Post-Implementation strategy

The eThekwini Municipality bears the O & M costs, using their Equitable Share funds. While the UDS system enables household users to take on the responsibility for maintaining their toilets, the Municipality does conduct ongoing checks on structure maintenance to produce a report about every 6 months, once

construction is completed. The rest of the infrastructure (piping etc) is the Water Operations Branch's responsibility.

Local health promoters educate individual households on how to operate and maintain their systems. Once toilets are built, there is a repeat of the previous educational house visits on toilet care and hygiene.

Registered plumbers located in the community complement municipal employees in attending to faults and repairs to the reticulation system. Contractors have liability for 3 months to fix mistakes and the 10% retention money is used if anything goes wrong. After that the municipality bears the O & M costs, checking just after constructed and 6 months later.

Formal and informal post implementation **Monitoring** and **Evaluation** (M&E) is outsourced to a professional social research institution (HSRC) that reports regularly to programme staff. The eWS Training Division monitors and manages local facilitators. HSRC monitors ISD consultants through researching the impact of Health and Sanitation Promotion or awareness creation activities. M&E is carried out by using focus groups to assess general knowledge of health and hygiene, acceptance of technology, and change in health and hygiene practices of the households. Post implementation monitoring is conducted over the following time intervals: 1 month after infrastructure is in place; 6 months after 1st monitoring exercise; 18 months after infrastructure is in place.

The post implementation strategy is deemed cost-effective and indicates that eThwekini, unlike the City of Cape Town, seriously computes the sustainability of services into their programme. The City of Cape Town, in comparison, appears to avoid this issue, as manifested starkly in the excessive operation and maintenance costs of the container system most widely used in servicing informal settlements.

4.3.3. UPGRADING APPROACHES IN DEVELOPING COUNTRIES

In drawing on experience beyond South Africa's borders, a number of community funding options emerge that can be considered in insitu-upgrading. **Table 6** below represents a collection of case studies on best practice upgrading strategies in developing countries. Different aspects of these case studies may be fruitfully applied in the City of Cape Town's upgrade approach where it is lacking.

INFORMAL SETTLEMENT UPGRADING CASE STUDIES Table 6

Case Studies	Context	Objectives	Upgrading Approach	Finance
<p>Egypt: Decreasing vulnerability in Manchiyot Nasser Informal Settlement Source: Salem, O (2002) <i>Decreasing Human Vulnerability in Manchiyot Nasser- Cairo</i>, Egypt</p>	<p>- IS contains about 350 000 people on 7.27km² surface area - hilly terrain -2 major efforts to upgrade living cond's: 1=GOPP (general org for physical planning) of MHUUC (Ministry of Housing Utilities & Urban Communities) prepared master plan in 1998, project still ongoing in 2002. Awarded certificate of good practice by UN-Habitat in 2000. 2= Cairo gov & GTZ launched urban Upgrading Project of Ezzbet Behkiet (37 000 people) as sample in neighbourhood by mid-1998.</p>	<p>1=Providing affordable housing options to poorest of poor; empowering civic engagement at early stages of decision making; intro participatory urban management; improving livelihood systems of inhabitants through improved access to basic services 2= Constructing potable water & preparing detailed plan of neighbourhood; formalizing land tenure; re-housing 1st residents relocated to edges of rifts and those who lost parts/all of homes for street widening; starting service facilities and collecting solid wastes; capacity building of local auth; starting new operations for social development</p>	<p>1=" <i>MHUUC-GOPP project to upgrade IS</i>". The first phase established 2000 units; relocated residents given temp shelter after earthquake in 1992; clearing site of temp shelterd, constructing units for relocated families that would lose thier homes in upgrading/street widening process 2= <i>GTZ supported project on participatory upgrading of Manchiyot Nasser: Ezzbet Behkeit</i>. - GTZ offices located in the District building of M. Nasser to enable direct daily interaction with target population. Community was involved in mapping existing situations, def problems & formulating remedial actions. This helped estbl. an NGO among active inhabitants . Project was able to develop a detailed for plan, with participation of inhabitants, and demon a good case for land tenure formalization. Upgrading process was underway at end of 2002 with focus on min. demolition of homes, relocating families to new units and extending water and sewer networks, formalizing tenure was underway</p>	<p>1=Residents given access to soft credit to pay subsidized price of unit over 20yrs with low interest rates (7%) 2=As above, detailed plan was formally endorsed by Local Popular Council of Cairo Gov. in 2000.</p>
<p>Kenya: The Maweni squatter settlement upgrading Source: UN-HABITAT Maweni Squatters Resettlement, Programme, Kenya www.sustainabledevelopment.org/cengdue/presentations/maweni/4/6/2004</p>	<p>The Squatter settlement in Voi with about 3 385 people is characterized by environmental aspects (violent storms, monsoon, rainy season). Natural veg ranges from dry bush with trees, to scattered trees and open grasslands. There are floods and water is far to fetch. There is an opportunity for people to live on site 100m industrial Development Group (MDG) was established in 1993</p>	<p>The objective of the Maweni group is to provide a more equitable and democratic distribution of residential and commercial plots in Maweni to facilitate the provision of decent housing to squatters through the self-help approach. Their goal is was to identify suitable land and facilitate the provision of low-cost housing to IS dwellers.</p>	<p>- Voi Municipal council recognized that they could not provide all services and facilities to Maweni squatters settlement thus MDG defined scope and limits of what it could provide. Community member relied on friends for labour and other resources. - Houses in settlement are built using basic materials (cement, ballast, urrum poles) made available by income generating branch. Most of these are built informally (outside formal F/W of Kenya building by-laws). They are built incrementally starting with 10 feet by 10 feet room, residents make additions according to their resource abilities. - Brick manufacturing has allowed members to increase their income. The sales of building materials is being marketed by MDG is growing rapidly, creating new jobs and income. Every member has to abide by decisions taken by Group on level o f infrastructure provision.</p>	<p>77% of financial resources were mobilized members contributions. Using Building – Together Approach (BTA), groups of squatters agree by majority vote to raise any additional finances required to provide supplementary services within their own area.</p>
<p>Pakistan: Infrastructure upgrading in Source: Taylor, K (1998) <i>Infrastructure Upgrading in Pakistan: Lessons from Experience & Directions for the Future</i>, London: GHK research & Training <i>The World Bank Group (1999) Lahore Urban Development Project</i> http://web.mit.edu/urbanupgrading/upgrading_24/6/2004</p>	<p>IS on public owned land that are recognised by gov are provided with de facto security of tenure, based on size of plots. Unregulated subdivision of privately owned land is the most common IS in Punjab and NE Frontier Prov. Although land ownership transferred to those who purchased plots, in theory buildings constructed on plots may still be demolished if they do not meet building and planning regulations. Internationally funded Informal 'integrated' projects for informal areas expanded their aim of meeting basic needs to focus on upgrading approaches that encourage poverty reduction (health, edu, income generation and provision of credit) in 1990s. The IS Upgrading Programmes and municipality resulted in Punjab (IS on public land) IS Directorate and Sindh (on subdivided privately owned land) IS authority in 70's/80s. Their role was to manage and fund upgrading of IS in their respective provinces. Here, larger projects were typically divided into smaller contract packages. Projects in smaller towns were generally implemented by municipalities.</p>	<p>Core concerns: infrastructure provision in upgrading projects and more recently social facilities (schools, health centres etc). Support residents to improve their houses, regularize their tenure and obtain improved access to income opportunities.</p>	<p>1= "<i>Orangi Pilot Project (OPP) in Karachi</i>". There was direct motivation and technical assistance on the process of sewer provision in Orangi . Improved sanitation drainage emerged as the priority for people in Orangi when OPP started to work in the area. This is the best example of the provision of encouragement and support needed to guide self-help efforts if they are to make a significant impact on conditions in IS. 2= "<i>The NE Lahore Upgrading Project</i>" Lahore Urban Devel Project was World Bank-funded project that tried to alleviate the lack of access to urban services and housing at affordable prices while emphasizing the importance of strengthening the capacity of Pakistani agencies to implement similar projects in the future. The upgrade process involved: Infrastructure upgrading in the Walled City of Lahore (45ha, 75 000 beneficiaries); A site and services scheme in Gujjapura (22ha, 60 000 beneficiaries), House construction/rehabilitation loans, Solid waste collection, municipal management and maintenance plan.</p>	<p>Gov is responsible for funding and provision of facilities and service infrastructure but limited financial, institutional, and human resources, as well as a lack in priority given to IS and O & M difficulties, resulted in poor quality services in older devel's or absences of services in newer devel. In some areas community groups take responsibility for facilities with or without external assistance. Households join together for shared service provision. Individual hh take responsibility for onsite facilities (onsite sanitation and drainage etc). -The difference with internationally funded projects is that larger projects were divided into smaller contract packages and focus is and they are focussed on . poverty reduction (health, edu, income generation and provision of credit. The IS Upgrading programme and municipal initiatives role was created to manage funds for upgrading IS.</p>
<p>Senegal: Upgrading of low income urban settlements of Dalifort and Medina Fass-m'bao (Dakar) Source: <i>The World Bank (2002) Upgrading of Low Income Urban Settlements Country Assessment Report: Senegal</i></p>	<p>IS characterised by illegal land occupation thus largely unserved. 1=The DUA/GTZ program started in 1987 with the Dalifort pilot project, designed and implemented with technical and financial support from GTZ. Program relied on involvement (financial and physical) of squatters in the process of improving their living conditions. Here about 7000 inhabitants lived in wooden shacks. 2= Project was replicated in Medina Fass-Mbao, with about 13 000 inhabitants where most houses are built of permanent materials (cement blocks) surrounded by walls.</p>	<p>1= <i>The Dalifort Project</i>:: The objective was to develop a method to permit replicability of the urban upgrading and land legalization method. 2= <i>Medina Fass M'bao Project</i>: A methodology of participatory planning was developed to establish the program with community participation. The technical team designed primary infrastructure while secondary and tertiary infrastructure was decided during planning workshops with the community.</p>	<p>1= Dalifort project was 18ha of which 11 was owned by the state and 7 by held by private owners. The state applied for a decree to expropriate privately owned land. 2 decrees were issued: the 1st declared public utility of intervention and the 2nd ordered expropriation of the area. 18 months after project declared a public utility by decree, through long discussions there was an agreement btw owners and auth (DUA/GTZ team) permitting state to pay owners by exchanging Dalifort project land for other state-owned plots within the same area. Dalifort stakeholders occupied more than 600 planned plots and service infra was provided: water and electricity supply; raods to provide access to isolated blocks; individual and public sanitation; and garbage collection. Upgrading took 3 yrs and inhabitants did the majority of the work. 2=1300 plots were designed, and 88 displaced stakeholders were settled in the same area and financially compensated. This process was accomplished faster than Dalifort (1993-1998). The primary roads were designed by technicians of the project and 2ndary and tertiary roads with community participation. A water supply system with the capacity for 850 individual connections was provided, however investment was limited by low level of savings of inhabitants.</p>	<p>1= Estimate cost of project was \$900 000 with the cost of technical assistance (for 7yrs) and personnel not included but high in relation to amount of investment. 2= One implementing agency (AFVP) and one financing agency. Cost project was \$63 million - 60% financed by AFD and 38% by inhabitants (payments for right to occupancy of land and cost recovery from infrastructure), and 2% by state (project support).</p>
<p>South Africa: Upgrading and Redevelopment of Mathew Goniwe Hostel (PE) Source: <i>Jones E H (1997) 'Mathew Goniwe Upgrading and Development Project in International Conference on Urbanisation and Housing'</i></p>	<p>Situated in Kwasakhele, a satellite township 10km from PE City centre. PE Transitional Local Council (PETLC) owned the Matherw Goniwe hostel and responsible for its proposed upgrading and redevelopment. Other role players was the Provincial Housing Board and Local negotiating group consisting of community representatives. Hostel Area associated with overcrowded, insecure tenure (controlled immigration in and out of hostel, inadequate services, high unemployment, and isolated from surrounding community</p>	<p>-Decrease overcrowding without breaking community relations and accommodating all of the displaced within the hostels vicinity. - Decreasing inequitable distri of residential floor space - Improving the lack of privacy with regard to sharing ablution blocks - Upgrading quality of bulk and internal service infra - Integrating community with surrounding township - Providing additional facilities and</p>	<p>Prior to preliminary design, beneficiaries ident. A labour intensive approach was used and construction was adapted to afford residents the opportunity for both participation and income generation. - <i>Tenure options</i>: A rental scheme was proposed with hostel broken up into blocks separated by a major route. A home owners association would manage each block - <i>Accommodation</i>: New family units were to be built on vacant land identified while the old hostel's units were being upgraded. Basic requirement was to increase the floor space at expense of finishing and walls. Family units received 40-52 m² of floor space with access to internal toilet and washing area. Single beneficiaries got 20 m² overall with 10m of private living space with toilet facilities and kitchen and other common areas shared with other units. - <i>Services</i>: New bus routes were constructed to facilitate access to places of employment and other common nodes in immediate area of the hostel. Bulk in frastructure provision was to be</p>	<p>Housing subsidies provided through Provincial (E.Cape) Housing Board.</p>

		upgrading existing non-residential facilities to create more balanced community.	confined to bus routes. - <i>Implementing programme:</i> Upgrading and redevelopment was phased to accommodate relocation of families, the construction of roads and services as well as upgrading old hostel. 1 st phase(began mid 1997) = construction of new family units to accommodate relocated families were constructed with services (roads, bulk water and sewers). 2 nd phase=upgrading old hostels, incl. Extension of units and addition of toilet and washing facilities to these.	
6. Tanzania: Upgrading the Human Nassif settlement Dar es Sallam) <i>The World Bank (2002) 'Upgrading of Low Income Urban Settlements Country Assessment Report: Tanzania'</i>	Dar es Salaam is growing about 80% p/a with 70% of urban population in informal housing. 50% live below poverty line on \$1 a day. SUDPF (Strategic Urban Development Planning Framework) was prepared for the city in 1999, incl overall strategy, capital investment project for upgrading of unserved settlements, and 6 detailed land suitability studies indicating land available for development. Hanna Nassif was one of the Projects focused on storm drainage. It took 8 years to provide basic improvements. Both Community Infra Project (CIP) sites and contractors were used for bulk of work rather than community labour. Contractors are assured higher quality of work, however infra standards (planning, design, construction) remained high thus costly and contributed to 2 rather than 7 communities to be upgraded.	Phase 1 (1994) = An 18 month pilot project was devised aimed at guiding future initiative in Tanzania. The objective is thus to improve peoples living conditions and expand employment opportunities as well as feasibility of a community based approach to urban upgrading through community management and community contracting. Thus communities would be empowered to develop infrastructure through its own resources with some assistance form donors. Phase 2 (1997-2000)= Aim of the NIGP is to encourage income generating activities among Community Based Organisations (CBO's) to help alleviate poverty through solid waste management, water supply and micro-schemes.	Phase 1= achieved good functioning and maintainable drainage systems; created employment opportunities for 15 000 paid workdays and 5000 workdays of community contribution; community management capacitated to maintain infra and ident future needs; council capacity enhanced through technical work group training in community based upgrading; and a training manuel was prepared given step-by-step guidelines for replication of process in other settlements. There were Implementation problems in the design requirements and network design as it was not holistic, engineering was not properly addressed (soil testing etc), and a non-technical supervisor led to construction problems and incomplete work. Phase 2= Solid waste management, water supply and micro-credit schemes using labour-based methods with community contracts. Local infrastructure was provided by building local capacity. Although UCLA's provided a Technical Support Team of 8 ppl, some part-time to build local capacity to provide local infrastructure. There were 21 contracts - 19 small community contracts and 2 private contractors (mostly for access and drainage works).	The upgrading project created a micro-credit program Phase 1=community empowered to devel infra through own resources with some assistance from donors. 2 nd phase= Funded by UNDP and Ford Foundation and executed by the University College of land and Agricultural Studies (UCLAs) under management of the National Income Generation Program (NIGP). The NIGP aim is to encourage income-generating activities among existing Community Based Organisations (CBOs) to help alleviate poverty. 60% of the budget was spent on training, mobilization related to construction and maintenance of infra. The Community Devel Assistance with assistance of Technical Support team did procurement of materials and community provided labour. Repayment rate of credit scheme was 95%.
7. Zambia: Unplanned Urban Settlement Upgrading in Lusaka <i>Nippon Koei Co Ltd (2001) 'The study of environmental improvement of unplanned urban settlements in Lusaka Final Report', Lusaka: Global Link Management Inc</i>	The 'Greater Lusaka Devel Plan' compiled by Lusaka City Council (LCC) in 1975 was unrealistic due to insufficient funds and gov inability to review plan. Therefore the city developed without guidelines integrated by a Master plan and resulted in unbalanced and fragmented implementation of urban development projects by gov. Where projects in IS's carried out with the assistance of NGOs there was insufficient coordination between communities and relevant gov bodies. The Sustainable Lusaka Project (SLP) (Lusaka's representation of UN-HABITAT's Sustainable Cities Project) attempted to improve coordination between community, NGOs, Donors and Lusaka Local Council. A number of IS's were identified as targets for pilot projects of SLP. Bauleni is one of pilot projects (1999-2000). Kalingalinga is not part of SLP but embodies an upgrading approach similar to the SLP (1974-80)	To improve coordination between community, NGOs, Donors and Lusaka Local Council using pilot projects to harmonize overall effectiveness of overall city development.	Provision of school, clinic, market and community centre; installation of standpipes to groups of families; roads, street lighting; house improvement loans through a community revolving fund, core house material loan program through community revolving fund; promotion of economic activities and income generation through micro-loans; experimentation with lower cost construction materials and techniques Re-alignment of sites to lower densities and to allow for street-widening, Design/cc contract by local contractor, H&H training in use of VIP's, training in cc and O&M procedures, training in technology choice, cost of cc to community and expected hh contributions, cc demos and demos of maintenance procedures, pit latrines cc by home-owners, 75/25% supply of material by donor and home-owner, clear community roles in service provision (man-hours: 2d technical advice, 1month with contractors, 1month labor, 2.5months sweat equity, 1day design systems, training provided in water supply systems (field visits to other settlements), O&M and management systems	Kalingalinga= house improvement loans through a community revolving fund. Lusaka Urban District Council was in charge of implementing Bauleni= Upgrading funded by JICA who funded water supply improvements. House improvement loans thro' community revolving fund, micro-loans, use of low-cost materials*, alternate sanitation options spread throughout development, some tech options by home owners themselves; 75/25% split of material supply by donor/homeowner

In addition to the seven county experiences of best practice) approaches, there are two further case studies that offer valuable lessons: the Indian and Brazilian experiences as analyzed by Huchzermeyer et al (2004).

From the Indian experience, it seems that the ROSCA (Rotating Savings and Credit Associations) is more successful, with women being the best candidates in reaching out to the low-income groups and slum dwellers. This alternative to conventional housing finance requires collateral and a credit worthy people reports that, "The ROSCA resolved the loan collateral and borrower information problems by enrolling only members who have mutual confidence in each other. Small amounts of housing finance are needed for incremental building created a sense of communal ownership of projects not existing in other sources of funding" (Huchzermeyer, et al 2004). Housing financing in India through cooperatives tended to benefit the middle-income households since they require high upfront capital investment (Huchzermeyer et al, 2004).

Brazilian experience highlights the importance of housing finance solutions cultivated at local government level. These policies proved effective in including the urban poor in the planning and management of the informal settlement intervention process. The ability of the local government to utilize funds raised locally, in order to carry out informal settlement interventions, is a highlight of this experience.

Santo Andre's Integrated Program of Social Inclusion is an integration of several municipal programs, providing a case study of integrated urban, economic and social programs. Funding for the urban program comes from the municipality using its own financial resources with other sources from state, national and international funding agencies. The establishment of a people's bank by the municipality of Santo Andre has ensured that informal settlement upgrading is sustainable. Subsidised loans were used to build incrementally or to start a small business venture. Collateral for the loans is not based on the requirements of a formal bank and is very flexible and personalized. The repayment rate is 85%, which indicates the acceptability and success of this program.

Mutirao presents a form of aided mutual help in Brazil, in which organized communities played an important role in the management of the housing process. It is based on direct and collective participation

* let because (if any) are you drawing from these case studies? → follows in s. 5.

of the urban poor in the building and management of low-income housing construction. The government finances the purchase of the land, and offers it to the organised community or association. A public loan is then made available for the purchase of building materials, with reasonable repayment terms. The community uses its own labour (Huchzermeyer et al,2004).

4.4. PREMPTING LOW INCOME SETTLEMENTS: GREENFIELD APPROACH

A great deal of focus in the above sections has been given to the existing informal settlements and the different types of upgrading because this is the main focus in Cape Town today. Ideally, the focus on upgrading should be accompanied by the identification of Greenfield sites. In other words, land suitable for low-income settlements should be identified to accommodate future informal settlements in order to avoid settlement on private and unsuitable land.

Greenfield developments are at the moment largely driven by private developers. My study area is a case that illustrates this fact. Three Greenfield sites are mentioned earlier in the document: Melkbosstrand development, Kensington development and Parklands 4th development. These sites are going to include informal settlements in the study area by means of the roll over approach, and are all driven by private property companies (Garden Cities, Milnerton Estates etc). My argument, along with some of Dewar's (2002) points, is that public authorities need to start playing a larger role in identifying pieces of land that can accommodate low income settlements and allow for incremental growth.

For the Greenfield approach to low income settlements I turn to Dave Dewar's argument that rather than being reactive to informal settlements through upgrading, the relevant authorities should be proactive (2002). In Dewar's (2002) words, "pre-identifying land parcels which are well located in terms of broader city management concerns (for example, close to public transport and existing social facilities), undertaking necessary priming public sector actions before settlement occurs, and then channelling informal settlers onto the improved land parcel" (Dewar, 2002: 12).

If informal settlement formation is to be relatively permanent, it is more sensible to accept this and to get ahead of the issue by identifying well-located land parcels across the city surface and to prime these for informal settlement processes before these processes take root (Dewar, 2004). He argues against the political focus on in-situ upgrading in that, at its best it can only be reactive and partial, and it is a difficult and time consuming process (Dewar, 2002).

4.4.1. CASE STUDY: SITE 5 IN THE NOORDHOEK VALLEY

By setting out to understand processes, patterns and the strengths and weaknesses of settlements as containers of human life, Dewar's (2002) comparative evaluation of five informal settlements in the

Western Cape contributes some useful insight into how future settlements may be planned. Drawing from Dewar's (2002) attempt to generalize about these processes, I will describe and evaluate Site 5 in Noordhoek as a case study.

4.4.1.1. Processes of Settlement Formation

Site 5, which is now called Masiphumelele, is situated on about 3ha of land that was cleared for temporary housing of squatters in the Noordhoek Valley while a site and service scheme was being established adjacent and north of the site. It was leveled, provided with rudimentary access routes and collective water and toilet facilities at central locations. However, once the site and service scheme was established and beneficiaries were given the option to move onto the site, some people chose to remain in their informal structures and lodgers to remain in their place. Many sold their shacks to newcomers that streamed into Site 5 in the hope of gaining security of tenure. In 1994, to stop growth of the site the local authority came to an agreement with the existing local committee to in-situ upgrade the site in return for self-policing the growth of the site. A series of elected sub-committees were also established under this committee (Dewar, 2002).

Processes of land occupation on site 5 may be summed up as shown in **table 7** below:

Table 7: Processes of land occupation on site 7

Phase 1	Phase 2 (a)	Phase 2 (b)	Phase 2 (c)	Phase 2 (d)	Phase 3
Small number of households occupy site individually	Informal partnership between authorities and communities (once committee established)	Authorities clear and level site and establish rudimentary infrastructure: unsurfaced roads, communal water points and public toilets	Authorities assisted households to move belongings and shack materials to new site on an area by area basis (existing communities stayed together). Precise site allocations determined by local committee with plot sizes based on household need	Settlement growth through allocation of new sites on periphery (newcomers introduced to committee by people living in site), and infill within settlement (commonly small rooms for renting to lodgers), and on surplus land	Lodges remained in their existing structures while newcomers either purchased shacks from households relocating to the site and service scheme, or they occupied the vacated sites left by those households.

Analysis of the data in the above table allows for the following aspects of settlement formation to be taken into account (Dewar, 2002):

- Once informal settlements occur they are unlikely to be temporary, so it is sensible to find suitable locations for them;
- The processes of informal settlement appear to be rationale in respect of community cohesion, solidarity and spatial structure;
- Social organization within informal settlements is sophisticated and recognizes the need for local level governance to interact with local authorities.

From his evaluation of the processes of land occupation that occurred in Greenfield sites, Dewar notes that in this site and all the other sites he has studied, there is a sophisticated level of social organization, such as the need to elect a committee to oversee the land allocation process on a local level (Dewar, 2002). He also refers to stokvels or saving clubs, funeral societies, prayer groups, social events and the likes that are readily formed as a by-product of people getting to know each other.

4.4.1.2. Public structures

To determine where public authorities should focus interventions in low-income Greenfield sites, evaluating which public structures the residents of Site 5 maintained and created, and the economic and residential patterns that developed. Based on Dewar's document "Working with Informality" (2002), the experience of Site 5 provides an opportunity to learn from informality in order to better plan for well-functioning low-income settlements.

Once land has been identified and acquired, installation of public structures can begin. The table below analyses the main public spatial structure that did, or did not, develop on Site 5 through the residents' initiatives and responses (Dewar, 2002) and illustrates where local authority inputs would be best placed.

Table 8: Public Structures in site 5

Green Space	Movement	Urban Space	Social and Utility services
Green space lacking within settlement. Outside bush though exists has no impact on daily life. Therefore there is difficulty in keeping livestock and undisposed manure creates a health hazard.	Main rudimentary unsurfaced route (8-10m) provided by auth was kept clear with informal maintenance carried out by local vehicle owners (esp shop owners). Occasionally local auth grades it when badly deteriorated from climatic conditions. Though 2 nd tier routes used for residential activities, still space for vehicles to penetrate.	Lower spatial order: Shared public court spaces are created by units facing each other where cooking, laundry etc is done (semi private social space). Pedestrian circulation avoids this space. Higher spatial order: No consciously created spaces. Therefore, fire is a constant hazard as it spreads rapidly.	No social services in site but accessible outside site. Utility services: Communal toilets each with a communal tap located along main circulation space at secondary route intersections. No house further than 100m from these services. Problem is the lack of storm water drainage.

4.4.1.3. Private initiatives

Private initiative occurring in Site 5 are evaluated to inform authorities of the spatial dynamics that evolve naturally around living conditions, plot allocation according to household size, and economic activity (Dewar, 2002). Authorities should be flexible and work with rather than against these private initiatives, for example by allowing for a variety of dwelling sizes.

Table 9: Private Initiatives in site 5

Economic Activity	Residential Activity
3 Activity Patterns: Activities dependent on flows of people (shops etc) are drawn to primary pre-determined movement structure. Specific skilled activities (e.g. hairdressers) on access routes within residential areas. Shabeens/pubs located in	Range of living conditions from public to very private. Dwelling size allocated on basis of need (larger structures with more private space allocated primarily to wood-cutters). Older structures occupy larger areas than smaller

specific sections of settlement.	infill structures.
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4.2. DETERMINING WHERE PUBLIC SHOULD INTERVENE: DEWAR'S PLANNING FRAMEWORK

Actions that a public authority can take in designing a Greenfield low-income settlement are suggested in the above tables which attempt to provide a view of the key public interventions that are needed with regards to public structures, and of which private initiatives they should allow for and accommodate within plans in terms of economic and residential activity (Dewar, 2002). The following public actions based on the above two tables and findings from other case studies as analyzed by Dewar (2002), are evaluated in table 10 below.

Table 10: Elements for Public Actions

Elements	Public Actions
Green Space	Central public spaces related to community facilities should be landscaped. There should be a peripheral green space for corralling livestock, Pre-existing trees should form part of the settlement place making process where possible and contribute to creating a sense of place.
Movement	A Grid framework to allow access to all parts of the settlement should be provided and surfaced/hardened to accommodate emergency and service vehicles (higher order routes). These should be about 20metres wide and double at fire breaks. Scale determined by length of fire hose (approx 80meteres) and results in a grid of 160m ² .
Urban Space	Three forms of public space need to be planned: Larger gathering or social spaces represented by primary social infrastructure and integrated with primary movement framework (highest order space). At least one of these spaces should be a multi-functional special place: landscaped, surfaced, and large enough for community gatherings, meetings and informal trading. There should be production spaces for community gardening and grazing and corralling animals ideally towards the edges of the settlement. This includes nuisance-generating activities (hammering etc). Protective spaces should be defined: generous linear spaces for movement, firebreaks, meeting and playing. These are illustrated in the diagram 16 ad 17below.
Social and Utility services	Types of social facilities should be determined by community demand and located in important social spaces to define edges of space. Clusters of facilities should be encouraged to facilitate sharing (esp. between schools and community). Community facilities should be situated to make integrative seams A network of bulk services (potable water, sewage disposal, electricity, storm water disposal) associated with major movement spaces should link higher order public spaces. This enables public facilities, commercial and small-scale manufacturing activities to gain access to necessary services. It also allows groups of housing units to opt-in or opt-out depending on personal needs and resources. A system of bath-houses/collective laundries should be associated with public spaces and made up as meeting places. Wastewater should be recycled to irrigate public space. Toilets and taps should occur more frequently and be no more than 100m away from all units. Skips for garbage collection should occur along major movement network.
Residential activity	A range of plot sizes according to need should be encouraged. Max plot sizes is 200 m ² to accommodate a range of household activities (Second dwellings, spaza shop, small vegetable garden, cooking, laundry etc). On average plot sizes should be in the order of 100m ² . Net densities should not exceed 120 units per hectare.
Economic Activity	The position of economic activities dependent on passing trade is determined by the position of main circulation routes.

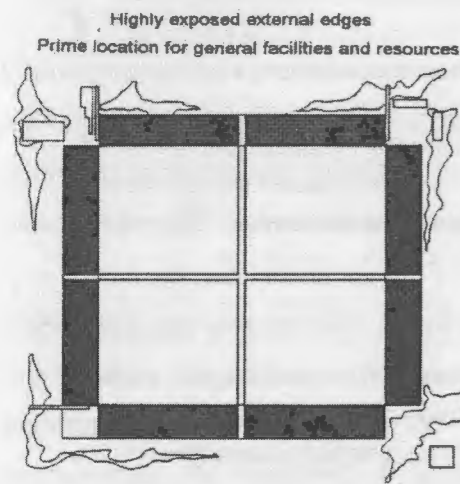
Dewar 's (2002: 91) opinion of the minimum infrastructure that should be provided to all low-income settlements includes:

- hardened or surfaced main circulation routes;
- larger public spaces;
- collective water points;
- collective (public) toilets;
- bathhouses/laundries;
- refuse tips at centralized pick-up points;

- and electricity to public schools.

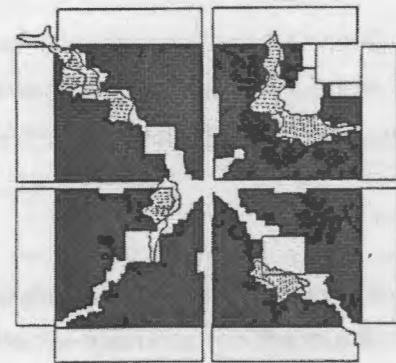
Dewar (2002) illustrates a structural organisation for **public structures** that highlights the distinction between the external and internal elements of structures (see the diagrams below). **Figure 19** demonstrates that the spatial structure for public spaces associated with high convenience activities, such as transport areas and markets, are best situated at exposed external edges. In **Figure 20** the primary public structures (bathhouses, public toilets, water points, refuse collection points, etc) are closely related to primary movement routes. The green structures are related to agricultural activity and recreation and associated with clusters of facilities.

Fig 19: External public space networks



i) Spaza shops, markets and general facilities are associated with external public space.

Fig 20: Internal public space networks

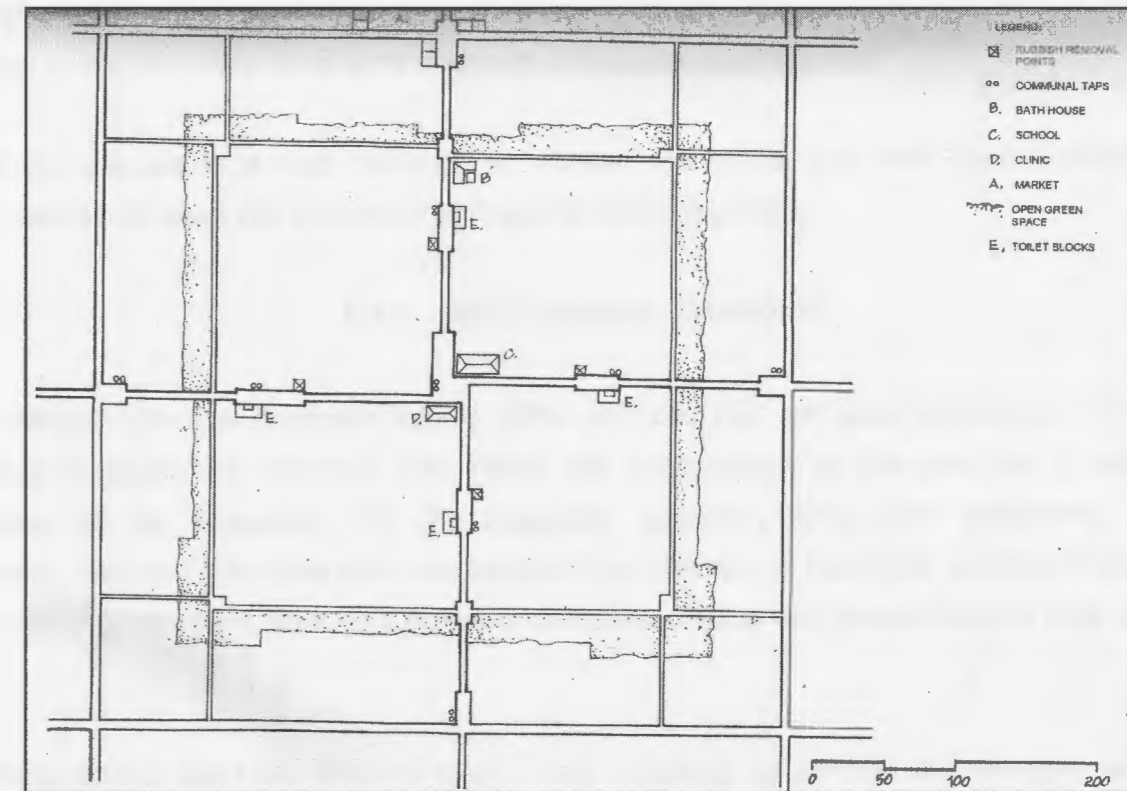


ii) Bathhouses, laundries, waterpoints, public ablutions and refuse collection points are associated with internal public networks

The diagram below (**Figure 21**) synthesises Dewar's (2002) suggested spatial principles, as discussed in the tables above, and illustrates that the following elements are publicly provided:

- A market structure of highest order routes connecting the site into broader urban system;
- A system of green space for agriculture and livestock activities;
- A circulation mainframe based on 160m² grid. Routes are about 20m wide may act as public spaces and serve as effective firebreaks. Utility services parallel the main circulation system. A hierarchical system of public spaces are integrated with the primary circulation system and public facilities associated with these.
- A system of collective water points, bathhouses/laundries, and garbage removal pick-up points:

Fig 21: Spatial Principles for public infrastructure (Dewar, 2002)



Size and scale: Dewar (2002) suggests that informal settlements should not extend beyond 25 hectares in order to allow for easier democratic processes for local decision-making and land allocation. He suggests an optimal size of between 10-15 hectares. Hard primary circulation space that allows emergency and delivery vehicles access should form a grid pattern, the scale of which is determined by the length of a fire hose. Since the length of hose in Cape Town is 65 meters the minimum grid is 130m² (Dewar, 2002).

The **role of the local authority in low-income settlement formation** is further clarified, without diminishing the essential contribution local community role, as follows:

1. Policy and legislation for acquiring Greenfield sites for low income settlement
2. Identify a range of sites where informal settlements will be encouraged → publish this as package to allow debate around equity issues before prioritization is given to the sites.
3. Site preparation/site making actions
 - 3.1. Securing land (acquire land)
 - 3.2. Prepare land for development (compact if on rubbish dump, leveling, avoid flooding)
 - 3.3. Lay down essential infrastructure: Major movement routes, the grid of utility services following these, ablutions, collective taps, bathhouses and laundries, waste tips, public spaces, demarcation of sites for community facilities, planting and surfacing certain routes and spaces (Dewar, 2002)

The Greenfield approach clearly has much to offer towards addressing the challenges facing local authorities. Ultimately, neither of the approaches discussed thus far (Greenfield and Upgrading) should be mutually exclusive, but rather employed as a dual strategy to progress towards ensuring the efficient management of low-income settlement in Cape Town.

SECTION 5: INTERVENTION

Having examined the site in context in Sections 1 and 2, the main constraints and issues that inhibit the development of low-income settlements is drawn out for discussion in Section 3, preparing the way towards suggesting interventions to overcome constraints in the present situation.

Interventions that I propose are based on the theories and case studies exposing different approaches to managing low-income settlements that were reviewed in Section 4. Possible interventions are also informed by the spatial overlays that are constructed from diverse spatial information gathered, and have been presented for reference throughout this document.

Separating my examination of two apparently competing strategies for low-income settlements, that of pre-empting the problem and that of dealing with the problem, is for the purpose of noting their equal importance in dealing with the challenge of increasing urban poverty that surfaces in informal settlements. As considering implementation is crucial to the value of any planning document, accommodation of this aspect is attempted wherever possible.

5.1. STRATEGIES TO DEAL WITH THE PROBLEM: UPGRADING INFORMAL SETTLEMENTS

Academics (Abbots et al, 2001) and South African authorities in general, appear to agree that Insitu Upgrading is the best option for informal settlements that are already in place. As pointed out earlier in this document, Insitu Upgrading is accepted at a policy level as the preferred response to informal settlements. Justification for this preference is that it is more effective to maintain community ties that have already been set up in an area, and more efficient to cut out the costs and difficulties involved in relocation, such as experienced in roll-over sites or township approaches.

The main difference between the Greenfield and the Insitu Upgrade approach and is that the latter works directly with the existing community members throughout the planning project, so that more public participation processes are needed. Once the planning framework is established, although based on minimum relocation, some relocation would still have to be carried out. This requires cooperation from

residents and therefore purposeful interaction with existing local committees. Capacity building and income generation opportunities in supplying infrastructure should be incorporated in both approaches, except that in upgrading the focus is on members of the existing community.

Laws for the acquisition of land, particular to informal settlements that have already settled on land illegally, need to be taken into account in planning for Insitu Upgrading.

5.1.1. INSTITUTIONAL CHANGES

As the directive principle discussed earlier, '*Efficiency and Fair and good governance*', is central to institutional arrangements, changes that reflect the achievement of this principle in public sector approaches will be suggested. For the upgrading approach, apart from maximizing community involvement, ensuring that clear roles are assigned to officials and that there is relevant backing from other levels of government calls for a program that gives officials and professionals a clear structure to follow.

Since these factors affect the whole of Cape Town, including my specific site, changes suggested at municipal and other levels of government are to enable the municipality to operate efficiently. In this section, lessons that Cape Town can learn will be drawn from a model that Durban (eThekweni) currently uses, as well as various other case studies and approaches.

5.1.1.1. Policies and politics

Policy dealing with informal settlements is not improving the conditions of people living in poverty in the urban environment, at least partly due to the dominant focus on the end-result of providing a house rather than urgent needs for the provision of the most basic services, such as sanitation and water. Housing is the main focus of funding, as affirmed in the new Housing Department's policy plan that is under discussion. Policy remains focused on providing formal structures and full services to the upper level of low-income earners, those people earning under R 3 500 per month.

In reviewing the housing policy, an informal settlement policy should be differentiated from the formal housing policy. While the housing policy may remain focused on housing delivery, an informal settlements policy could focus on site and service schemes without the outcome necessarily housing. At the moment significant research led by Marie Huchzermeyer at Witwaterand University may contribute to the possibility of developing an appropriate informal settlements policy.

Despite an uneconomical approach that does not reach the target of the most needy, the Housing Subsidy still only provides funds for services if the end result is a house. Even the People's Housing Process is skewed towards catering for formality, although a better process for this is adopted. To move forward the politicians should desist from promising formal housing that remains beyond the means of most people living in informal settlements and look to mobilising and concentrating resources on providing adequate basic services to all, in line with national policies relating to basic services provision. The majority of the so-called RDP houses are acknowledged to be of poor quality and have nevertheless proved to be unaffordable and unsustainable, despite the lure of full services associated with formal housing.

In terms of providing basic services to all (rather than high levels of service to some) national policy directives appear to have been sidelined politically, as highlighted by poor performance in sanitation delivery. As the term "basic sanitation" appears to be misunderstood by many politicians and the professionals in their service alike, the national policy definition⁸ should be reasserted at all tiers of government. Clear guidance for the minimal acceptable basic level of sanitation, that continues to meet with resistance on a local government level, is promulgated in policy as follows:

"Good sanitation includes appropriate health and hygiene awareness and behaviour, and acceptable, affordable and sustainable sanitation services". (DWAF, 2001: 5)

The provision of adequate sanitation facilities, as charged to local government responsibility, involves:

- A system for disposing of human excreta, household wastewater and refuse, which is acceptable and affordable to the users, safe, hygienic and easily accessible and which does not have an unacceptable impact on the environment; and
- A toilet facility for each household. (DWAF, 2001: 6)

The widespread lack of adequate basic services, including water but most notably of sanitation, forms a useful indicator of performance in regard to the constitutional right of all citizens to basic services, and in particular to those dwelling in informal settlements. This indicator should be applied stringently to plans and programmes targeting informal settlements, and which make use of national resources, by government regulation.

Obtaining accessible basic services on a portion of land is an important issue for which funding is available, and that should be taken on board by all levels of government. This approach to developing settlements does not exclude people who can afford to pursue a better quality top-structure, either through their own initiative or by accessing available housing or institutional subsidies in their own time.

⁸ A common definition of basic levels of service is provided in the Basic Household Sanitation Policy, accepted by Parliament in 200, and reaffirmed in the reviewed Water Services Strategy document annexed to the policy in 2003.

* This needs to be demonstrated / elaborated ... ?

Minimizing fire hazards by the provision of firewalls as part of an access network[?] is another essential and cost-effective service that may be provided through public intervention.

The City of Cape Town (CCT) is still deeply centralized since the decisive power, in practice, rests with the single group of the Mayor's Committee. At local government level a lack of recognition of experience and progressions that are evolving on the ground, requires practitioner officials to be more pro-active in arguing their case. Municipal line managers may strive towards combating the dominance of higher powers by supporting the internal writing up of project experience to develop programs and documented guidelines, which would better inform the Mayor and associated executives. Showing where they are heading and why hard won progress on project-level should not be sidelined, rests on the capacity within the municipality to do this.

5.1.1.2. The role of professionals and officials

Presently, the Development Support Branch is carrying out the function of informal settlement Upgrading in the City of Cape Town, even though it is not part of their job description. While the local government Housing Departments' job description is to be in charge of informal settlement Upgrading, in the case of both Jo'burg and Durban the housing departments do not take on direct responsibility for informal settlement upgrading as they appear to lack the capacity to deal with informality. In practice it is civil engineering, environmental health and social development staff that are drawn together for the technical expertise they have to offer initiatives related to informality and for the necessary direct interface with informal settlement communities.

It is thus evidently questionable whether housing departments are the appropriate department to manage informal settlement upgrading or low-income settlement development. As they are solely concerned with the end result of providing formal houses and full services, the affordability of maintaining high levels of service tends to be disregarded, as do those people who cannot afford to undertake housing subsidies. In terms of the resources available to both the municipality and the people residing in informal settlements it is clearly adequate, basic service provision that should take precedence. Therefore, I suggest that either the housing department changes their present focus on housing in informal settlement upgrade projects or this responsibility should be given to another department, preferably managed by both technical and social professionals.

In the Durban (Ethekewini) example, in which the institutional structure is working efficiently, it is the Water Services Division (Construction Branch) that acts as Programme Manager in charge of informal settlement upgrading, rather than the Housing Department. Working together with the Training Division and ISD management they have the full support from senior and line managers of Water Services who

** it's not clear what you mean by this: in principle, housing subsidies are available to all qualified people earning < R 3500 p.m. ... ?

reference to R2000? housing requirements (to a degree) are changing

deal with other departments and city structures. At the moment neither Durban nor Johannesburg have housing departments involved in informal settlements beyond funding, relocations and removals.

Since the Development Support Branch and Planning department in the City of Cape Town contains the professionals and the experience based on previous endeavours to improve conditions in informal settlements, they should continue to be involved in the informal settlement upgrade projects. However, the social department needs to play a more active role in this process in order to include aspects such as education and infrastructure that residents can afford to maintain in upgrade projects. As long as there is a dedicated program team that supports both the social and technical aspects in Informal Settlement Upgrading, this function could be housed in any department that is directly involved with improving conditions for informal settlements.

Since Insitu Upgrading includes affected communities, social and economic professionals (Environmental Health Practitioners, Community Liaison Officers, Social Workers, etc) are involved as well as the usual technical professionals used in Greenfield sites (Land Surveyors, Spatial Planners, Civil Engineers). The role of technical professionals should change, as discussed earlier (Abbott et al, 2001, discussed in Section 4.3). However in addition, consideration must be given as to whether the strategy of appointing external professional consultants rather than deploying municipal in-house professionals is the most efficient strategy. At the moment the City of Cape Town hires outside consultants to manage the upgrade processes.

The significant role that consultants play in the CCT has come into question. In the context of moves towards privatisation council staff were severely cut back, based on the assumption that the city was doing a bad job therefore outside help should be used more. However, current studies suggest that the city would be able to operate more efficiently if they were not so dependent on external consultants, who have also proved to be very expensive. According to Programme Manager Jacque Rust, eThekwini Municipality (Durban) has tried using outside consultants and “worked out that they were paying them much more than in-house management, projects took too long to complete and work was not up to the standard of pay” (Interview with Jaque Rust 16/08/2004). In suggesting that a solution is for the municipality to directly manage informal settlement upgrading, the implication is that more in-house staff may be cost-effectively appointed for this purpose.

Analysing case studies in comparison to how CCT operates clarifies that efficient action is dependant on a program being drawn up for low-income settlement upgrading. While CCT (similar to Jo’burg) does have many pilot projects that work well, because these are not documented adequately the lessons that could have led to direct guidelines are lost and mistakes are recurrent. During topical meetings practitioners talk adamantly about certain projects as if they are happening for the first time, although

repeatedly some have worked well and some not, hearsay does not constitute evidence that can be learned from.

Drawing these conclusions is confirmed by comparing the implementation structure of the CCT with that of eThwekini (Durban), which illustrates a considerably more efficient and cost effective provision of services to informal settlements. The table below is drawn up from research work done earlier this year (CWSS Progress Report 1, WRC project no. K5/1438//3).

Table 11: Comparative case studies on upgrading Informal Settlements: the eThwekini and Cape Town model

IMPLEMENTING BASIC SERVICES IN INFORMAL SETTLEMENTS		
	Durban Model (eThekwini)	City of Cape Town
Model	Set model used in all informal settlements	There is no set model, varies per site.
Type of toilet	Urine Diversion units & metered water standpipes	Container, pour flush, communal/individual toilet blocks, VIP & water standpipes
Consultants	Local ISD consultant: trained and mentored by officials on general objectives of the project and the training of local facilitators (attend Psc and Tmc meetings).	Outside consultants: Hired by the city to assess, design, plan and manage and monitor contractors. They must ensure contractors abide by the Procurement policy. They are paid a % of what the entire project will cost. The lower the whole project costs, the higher the % of the consultants fee. PDI consultants are given preference and start working in joint ventures with more qualified consultant until better qualified.
Education	The ISD consultants train and mentor Local Facilitators to carry out project information dissemination and health and hygiene education	All communities in informal settlements are informed by official engineers and Community Liason Officers (CLO) about project and allowed feedback at Public Participation meetings prior to more specific project implementation. In Imizamu Yethu in the past local EHO's (youth) trained by official EHO's and paid to educate families using pamphlets and a 1 on 1 basis. A proper education program is still being devised. *
Contractors	Local emerging contractors: They are trained and paid by Municipality using unit payment method. They get paid in accordance with delivery and accessibility to households. 10% administration fee withheld from each payment until the end of the contract to ensure good quality work from contractor.	Outside Contractors: The city can hire both outside contractors (eg.Sannitech) and/or local contractors (eg. MASISCO). Tender process takes up to 6 months (according to Hugo). Normally employer awards contract to tenderer obtaining highest no. of points. The tender price can get a max. of 90 points and the status of enterprise in terms of ownership can get a max. of 10 points. Adjudication points are given to ABE (7.5 points) and WEO (2.5 points) companies. According to Noahmaan Hendricks (29/01/04), the lowest quote for contractors is R125 000, then they target local and smaller contracts under R125 000. They are paid on a monthly basis for work that has been completed.
Labourers	Local labourers: Paid R70 per day for full production, tasked by contractor and paid by municipality every 2 weeks. A min. of 5 labourers supplied by contractor and other 5 sourced by TMC/PSC from the poorest families and rotated every 4 weeks. Only 1 labourer allowed p/hh. Registration of local plumbers encouraged.	Local Labourers: It is a condition in the tender document that contractor employs local labour from the area to form teams of workers. The number of people employed is up to the contractor and the min. pay to local labour should be no less than the min. requirements of SAFCEC. At the end of employment, labourers provided with a certificate of service. N.Hendricks (Interview, 29/01/04) admitted that at the moment contractors were not employing the local community.

(Water Research Commission project progress report by the CWSS Unit, Pentech, 2004)

In terms of technology options, officials and professionals often feel that the community dictates the upgrade process to a large extent. The argument that they refuse to have any other type of sanitation

than the full flush associated with housing has been put forward by consultants and many of the city officials (eg Interviews with Dave Martin, Dave Hugo's view). Therefore even if this is unaffordable and unsustainable to both the users and the Municipality, the city chooses to provide this type of technology.

This argument has the effect of averting trials of other adequate and low-cost types of sanitation technologies apart from that preferred by engineers for its technical off-site efficiency. People will always be influenced by what is promoted and offered to them, and clearly in Cape Town flush toilets are being promoted (by professionals and politically). Attending Public Participation meetings in informal settlements earlier this year, demonstrated that communities are simply not being given information about other sanitation technologies nor making any input into decisions about offered options. Along with the inclusion of more choice, education on the differences in options available needs to be conveyed, including the costs to the user (including purchasing of toilet paper for any waterborne system), the amount of water used and the real costs thereof to the city as a structure that serves the community. It has long been accepted by professionals that effective, adequate and sustainable dry-sanitation options are cheaper to build, maintain and operate.

Table 12 below compares the total annual costs (capital and operating) per dwelling unit for each type of sanitation unit, as reviewed and accepted by the City of Cape Town. Dry sanitation has been listed as the cheapest form of sanitation.

Table 12: Costs of different sanitation systems

Costing of different type of sanitation systems	
Conventional Waterborne	R 2,291
Pour Flush	R 1,233
VIP (sealed vault)	R 2,667
VIP (conventional)	R 963
Ventilated container	R 1,555
Dry Sanitation (urine diversion)	R 704
Dry San in dwelling	R 215
Dry Sanitation (Ecosan)	R 704
Aqua Privey & Soakaway	R 1,223
Septic Tank & Soakaway	R 2,246
Septic Tank & Small Bore	R 2,810

(Illiso Consulting Ltd, for CCT, Feb 2004)

In Ethekwini, Urine Diversion Systems (UDS) are considered a full ("basic" as defined by national policy) service along with the Electronic Bailif Units (EBU) for water reticulation, which accommodates user-friendly control on the quantity of free, and additional, water used by the household. The basic services option that is promoted and subsidized is based on the level of service that the municipality, and the user, can afford to operate and maintain. These conclusions are drawn from trials and the budget utilizes national funding allocated to eradicating the basic services backlog in alignment with national policy guidelines.

While settlements are given a range of technology choices, it is only the UDS and EBU systems that are funded by the Municipality (R325 per household). If the community chooses onsite water and sanitation services (which is the only other option in Ethekwini's rural periphery) it is at their own cost (R2000 for installation and about R15 000 for water system). Cape Town should learn from the attitude and initiatives that have been taken by officials involved in Ethekwini. While there are other issues that come into play in terms of technology choices in Cape Town, and indeed in each specific location within the broader context, in this case the argument that high density prevents innovations is invalid, only serving to undermine initiative in the city to test technologies that are more affordable to the users, and inform communities adequately on the choices of technology. The choice of dry sanitation options allows communities to make decisions in terms of real costs that they can afford and the costs of providing, and using, different technology options. The use of newspaper in flush systems is not only expensive in terms of maintenance but also creates constantly recurring health hazards and frustration at the perceived slowness of response by the city to the inevitable and frequent blockages.

Too often, once informal settlements become part of an upgrade project and are handed over to municipal planners or appointed consultants (generally engineers), considerations such as affordability by users in the settlement is not adequately considered. Providing subsidized formal houses and flush toilets continue, regardless of whether households can afford to contribute the amount required for the housing subsidy (R2 479 must be contributed by home-owners before infrastructure can be installed (DoH, 2003) or whether they can afford buy toilet paper to operate the flush toilets. This is the case in the New Rest Insitu Upgrade project that is presently underway, led by Piet Van Heerden from the Spatial Planning Branch in the CCT (presentation at UCT, 02/07/04). Another current case which demonstrates the need for intervention on this issue is that of Sweet Home (Interview, Dave Martin from the appointed consultancy Illiso Ltd) where when the question on whether affordability to users had been taken into account, there was no answer.

5.1.1.3. Public Participation and Capacity building

In comparison with Greenfield projects, an important difference in Upgrade projects is the community participation process. Since Public Participation meetings are now legally required in Upgrade projects, there is a separate internal system to accommodate the social aspects that run parallel to the technical structure within the Development Support Branch of the City of Cape Town. Both report to the Municipal Manager. This 'social structure' is in place to ensure that effective Public Participation occurs.

Public Participation meetings between communities and the local authority are organised through steering committees. According to the Department of Housing (DoH) Informal Settlement Handbook (2003), an investigation followed by the establishment of a local steering committee is the first step in

In situ upgrading procedures. Community Liaison Officers (CLO's) are delegated to this task as the City's way of creating a social support system in the community. However, as mentioned earlier, the CLO role is limited to information transfer and aims at gaining support for the developer in the wider community and hence does not deal with existing social exclusion effectively. Abbott et al's (2001*) suggestion of using Community Development Workers (CDWs) would be a valid exercise for the CCT to improve on their current approach to Public Participation. Refer to section 4.3.1.2. for the details on what this action would involve.

In terms of a community structure to deal with organizational relationships within the community (community building, involvement in the project and resolving conflicts), Abbott et al (2001*) believe that the best working model in Upgrade projects is the '3-grouped model'. This model comprises a Development Trust that deals with development activities, a Civic Association that deals with political issues and community action, and a collective Community Group that voices concerns and protects the interests of the broader community. Presently in the City of Cape Town there is no effective social structure in place with clear roles and responsibilities that deals with the various interest groupings and functions arising from diversity within communities, although some scattered initiatives by NGO's do provide some insight and experience in this regard. Education and training initiatives that are associated with local capacity building and income generation play a crucial role in enhancing public participation.

The comparison of case study experiences in **Table 6** illustrates that community residents may be more involved with the upgrade process, and that in-house professionals may be effectively dedicated to upgrading in informal settlements. Community training and community-based employment wherever this may replace the appointment of external service providers in the upgrade process is possible, as demonstrated in **Table 11**. When one compares community involvement and capacity building that occurs in Ethwewini (Durban) with the City of Cape Town process, it is clear that communities are not being involved to the extent they could be in the CCT.

Overall, the efficiency of maximising community involvement and capacity building in Ethekwini has involved training and employing community residents as educators and facilitators, contractors, labourers and plumbers to contribute substantially to the upgrade process. Most training is done by municipality itself, except for external professional ISD consultants who train and monitor local emerging ISD consultants. The City of Cape Town can learn much from the training and procurement programme that achieves high delivery rates in Ethekwini.

In the City of Cape Town the Environmental Health Department is in charge of health, hygiene and sanitation awareness in informal settlements. In the informal settlement of Doornbach (the most likely informal settlement to be In situ upgraded in my specific study area), Environmental Health officials are

currently identifying 8 community members who will be formally trained as local health officers by outside training consultants using SETA funds, as part of a Sanitation Skills Programme registered with the LGWSETA. Once trained, the local health officers will be in charge of health and sanitation education and promotion on a local level (Interview, Shamiel, 7/10/2004). This experience must be well documented and reported so that lessons may be institutionally internalized.

The figure below demonstrates the structure currently in place in the Health Department, indicating who reports to whom (Interview, Leander Van Oordt, Jan 2004). However as no program or strategy has been written up in terms of health and sanitation education, training and education in Upgrade projects is often ad hoc and short lived without the correct monitoring and follow up of funding investments from the Health Department (Interview, Leander Van Oordt, Jan 2004). In this case it is not accessing NGO's that is the problem, but capacity within the Health Department. The environmental health officials themselves propose the intervention of drawing up an efficient implementation program that includes a budget.

Fig 22: Environmental Health Department structure



One of the reasons behind capacity building and income generation becoming a crucial element of informal settlement upgrade projects is the realization that without increasing income generation opportunities, the poorest are unable to afford even subsidised services, let alone a formal top-structure. The expanded Public Works initiative is currently the main mechanism intended for poverty alleviation and creating employment in low-income settlements on the South African government's part.

It is interesting to note that the majority of the successful informal settlement upgrade projects listed in **Table 6** had the objective of maximizing community involvement and capacity building. The following lessons on community involvement and capacity building drawn from Table 6 may be applied to Upgrade projects in Cape Town.

As in the Ethekwini (Durban) approach, lessons to inform interventions are drawn from other case studies shown in Table 6, as follows. The lesson from the Hanna Nassif upgrade project in Dar es Salaam is that training and community-based contractors made the project more sustainable. In the informal settlement of Manchieyt in Egypt the key public actions for community participation and capacity building that

created a successful project were identified as the direct interaction and involvement of the broader community in mapping the existing situation and formulating remedial actions, facilitated by physically locating the GTZ offices within the informal settlement (Salem, 2002). These actions helped to establish a local NGO from inhabitants, to ensure that social development occurred in the project. In the Maweni squatter settlement upgrade project in Kenya, new jobs and income were created by encouraging SMME's to sell building materials (UN-HABITAT, 24/6/2004).

A key lesson on community building actions that can be drawn from the Bauleni informal settlement upgrade project in Lusaka (Table 4), as is in the Ethekwini approach, is that a clear program needs to be set out for the community and professionals to know what their roles are. In Bauleni, after settlement was re-aligned to lower densities, a community representative group was elected and field visits to other settlements organised, with clear roles given to the community in the upgrade process. The programme guidelines included a number of man-hours, 2 days of technical advice, 1 month with contractors, 1 month of labor, 2.5 months of sweat equity, 1 day of design systems, and training provided in water supply systems during field visits to other settlements that included operation, maintenance (O&M) and management systems.

Another initiative in Bauleni that could be mirrored by the City of Cape Town is ensuring that residents in upgrade projects conduct field trips, visiting sites where upgrade projects have been successful. It would be important to pick a site that is similar to the desired end result for those residents (for example same type of technology options, levels of service, etc).

For implementation to succeed and be sustainable, the need to identify all stakeholders in the process of public participation is imperative. The specific Ward Council of the area, local politicians, representative

community bodies, women's groups, beneficiary groups, active NGO's, and Ratepayers Associations are some of those to be approached to provide feedback to proposals and contribute their inputs. This action, properly carried out, is to ensure buy-in from residents through adequate participation in the implementation process. Ensuring that all relevant stakeholders are involved in the upgrading process requires the development of a participation strategy rather than the minimal Public Participation process.

The strategy shown in **Figure 23**, based on the Red Book (Housing Department, 2000), highlights this aspect in the context of the statutory framework for participation, the scene for workable partnerships, the framework for a participation strategy, the challenges to empowering stakeholders and the elements needed for the development of an integrated planning framework (Housing Department, 2000). Guidelines exist for municipalities to develop a participation strategy for informal settlement development as part of their planning and implementation procedures. These are available and need to be utilised and applied in approaching the upgrading of informal settlements.

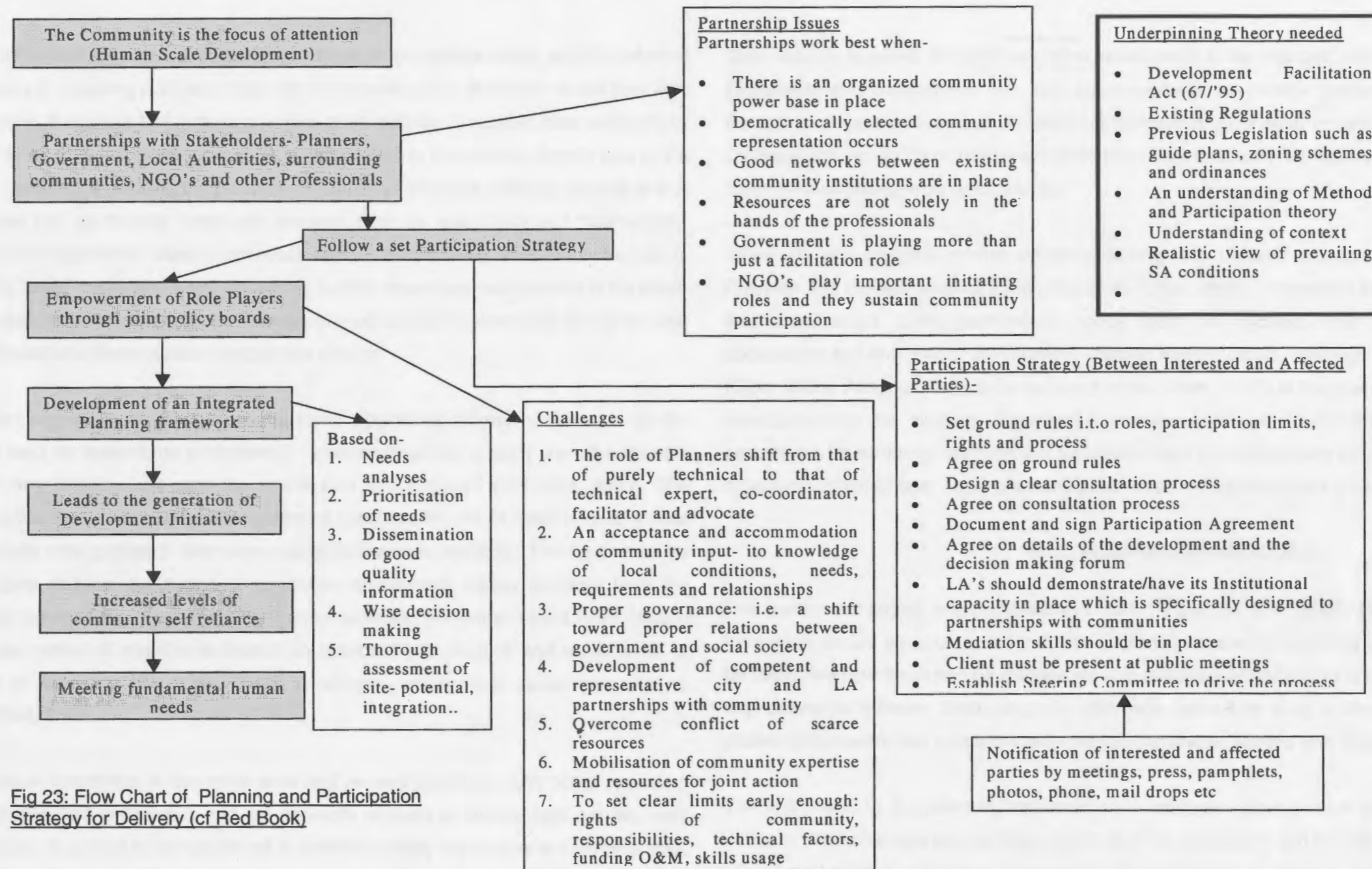


Fig 23: Flow Chart of Planning and Participation Strategy for Delivery (cf Red Book)

5.1.2. LAND ACQUISITION

The positive effects of Insitu Upgrading are that this approach cuts down the need to identify new land and allows existing community networks and relationships to be maintained. However, this Upgrade approach is dependant on land acquisition. While public participation is crucial in Land Use regulations, the use of land may only be changed with the approval of the Land Use Regulator who may be: a Municipality; a Land Use Tribunal; The Minister responsible for land affairs; or The Land Appeal Tribunal Expropriation (Ogle, 2003).

Land that is most readily acquired for informal settlement. Insitu Upgrading purposes is public (municipal or government) land rather than private land. However, informal settlement Upgrading should not be

considered where land is better suited to public open space or public space⁹, land that has environmental significance or is better suited for agriculture, and land that not safe for development (prone to flooding, landfill sites, etc). Unfortunately, the informal settlements in my study area that are situated on public land are in breach of safety restrictions or settled on school sites and must therefore be moved. Du Noon Holding Sites and Du Noon School Site informal settlements are situated on public land that already has a dedicated function, and Rooidakkies and Skandaalkamp are situated within the boundaries of Visserhok landfill site. Sixth Avenue Kensington has already been incorporated into the Kensington Greenfield project.

⁹ Public space includes that designated for education, such as the school site that De Noon is presently settled on.

Acquisition of private land should only be considered when there is no suitable public land for informal settlements, as the process of acquiring such land depends on the willingness of owners to sell their land to the municipality. However, it appears that acquiring land to make suitable Greenfield sites available for low-income settlements is not a line of thinking being yet being applied in this country, largely due to the lack of political initiative towards pre-empting the problem of informal settlements. Instead, a great deal of investment presently goes into inadequate temporary services, such as emergency and 'rudimentary' services with a high ratio of households sharing individual units, to be removed once the settlement is moved. The fact that they "must" move eventually apparently justifies enormous capital costs in the short-term and extended high maintenance expenditures. The decision not to move settlements due to the lack of identification of appropriate land for relocation has become a norm.

In this country, legislation and policy is geared towards In situ Upgrading informal settlements as the solution for establishing land for low-income settlement. It is unconstitutional to evict anyone without a court order or demolish any dwelling unit once the unit is built and occupied (WP DoH, 2003). The Prevention of Illegal Eviction from an Unlawful Occupation of Land Act No. 19 of 1998 is clear in this respect. Eviction is normally only granted if alternative accommodation is available. The Court may be approached with an urgent eviction application if the owner experiences undue hardship from the occupation or feels endangered. Otherwise, in ordinary circumstances, the owner would need to give squatters 14 working days notice of intention to launch an application for eviction and would need to obtain personal details of squatters (ID, ages, health conditions, employment status etc) prior to appearing in court (WP DoH, 2003).

Therefore, due to numerous constraints in the study area and present legislation and policy regarding informal settlement upgrading, the settlements that are presently situated on private land are the most likely to be upgraded. Those on private land that are not in breach of safety restrictions are Morning Star, Doornbach and Wolwerivier. Spoorkamp is within the boundary of an area presently under investigation for a new landfill site, and Ogieskraal is within the 5km Koeberg zone. The Table View Tipsite is a site that needs to be moved for obvious reasons. Therefore it is Wolwerivier, Morning star and Doornbach that fall under consideration for expropriation through negotiation. Of these, Doornbach is making the most progress and is likely to soon be purchased by the municipality.

One good example of land expropriation initiatives was that used in Senegal in the Dalifort Informal Settlement Upgrade project (refer to Table 4). At the conclusion of long discussions with the land owners, the state paid owners by exchanging Dalifort project land for other state-owned plots within the same area (The World Bank (2002).

Once land is acquired, the land use zone would need to be changed, preferably to a mixed-use zone (residential and commercial) that best accommodates low-income settlements. This would be done through a process of rezoning. In certain circumstance, to change to use of a land the Environmental Conservation Act no 73 of 1989 and the National Environmental Act requires that an EIA (Environmental Impact Assessment) must be conducted.

There are two separate zoning schemes dealing with different aspects: the regulations created by Province and By-laws created by municipalities (Ogle, 2003). To remove the zoning scheme restriction, the municipality's public participation policy must be followed. This requires land development applications to follow any of the following options: notices on erf, meetings on site, and public meetings (Ogle, 2003). Although likely to be replaced in the future, LUPO is the main legislation dealing with land development in the Western Cape, as it provides land use control through zoning schemes and procedures for rezoning. Although this legislation does not comply with the new Constitutional allocation of powers, until new laws are in place the procedures set out here have to be followed (Ogle, 2003).

5.1.3. PLANNING FRAMEWORK

This section will largely rely on Abbott et al (2001*) and the DoH (2003) for leads on how the planning framework should be approached in In situ Upgrade projects. Determining where public action needs to be taken and how these can be planned aims to minimise relocations to upgrade informal settlements. A key difference between In situ upgrade sites and Greenfield sites is that In situ Upgrading needs a planning framework that accommodates the existing layout, starting with movement systems.

The first phase in the planning framework is to examine existing runoff patterns and plan movement patterns. Public spaces and facilities should then be associated with the movement network. Since there is less road surface in informal settlements, the contribution of roads to generating stormwater runoff is reduced. Therefore the planning of roads and storm water drainage do not need to be linked. In order to save space, utility services should be associated with the main movement network as well as sanitation and water facilities. Full community participation is needed in the planning framework in order for the plan to be understood, accepted and based on the communities needs.

Once the movement patterns, public spaces and utility services have been planned around existing households as much as possible, and accepted by the community, the necessary relocations will need to occur to enable the framework to be implemented.

5.3.1. Movement Patterns

Once a committee has been established, planners and engineers must work on base maps and aerial photographs to plot routes. The community should be included in the decision making process. Movement routes should be planned around the existing desire line of existing informal movement patterns, but related to the grid system. In low-income settlements, roads are defined as movement corridors as they reflect a multi-functional usage of movement and socio-economic spaces, Pedestrian walkways will remain the predominant form of movement in Insitu Upgrade projects.

The minimum road width in Greenfield sites is 8 meters (DoH, 2000), however, for Insitu Upgrade projects Abbott et al (2001*)¹⁰ noted that this standard of primary routes can be dropped to a minimum of 6m to allow 2 cars to pass. These routes must be able to accommodate emergency vehicles. All the settlements should be within 65 meters from these roads since this is the length of a fire hose in Cape Town (Dewar, 2002). If one of these routes is to be made into an activity route, space must also be given for taxi stops and there should be larger pedestrian pavement space along this.

The informal settlement of Doornbach (**Map 23**) is used as an example of the type of exercise that would be carried out using aerial photographs to identify major movement routes for Insitu Upgrading. The major movement routes must be based on the existing desire lines created by the community to minimize the need for relocations. From tracing the desire lines (existing pedestrian walkways) on aerial photographs, the most likely position of major roads are shown as bold lines on Map 23. The secondary roads don't have to accommodate two cars but there must at least be enough space for small cars to pass at a low speed. There would not be road access to all properties, but footpaths (about 1.5m) are rather used (Abbott 2001*) for access. From the Potsdam road, there are 2 main entry points into the site (refer to Map 23). Potsdam road is the only hard surfaced route that borders the site, and the rest of the roads are un-surfaced farm roads.

Map 23: Desire lines



5.3.2. Public Structures

One of the issues in informal settlements is that they lack higher order public spaces. Some relocations would need to occur although existing public spaces, such as a soccer field, should be incorporated in plans. As noted by Dewar (2002) there are three public spaces that need to be provided. These are the larger gathering or social spaces represented by primary social infrastructure to be landscaped and surfaced for informal trading and meetings, production spaces for community gardening, grazing and corralling animals ideally towards the edges of the settlement, and protective spaces that are linear

¹⁰ based on New Rest upgrade project,

spaces for movement, fire breaks, meeting and playing. These are spaces that generally lack in informal settlements. However, in Insitu Upgrade projects the planning framework for these spaces must work with existing gathering places and meeting places as much as possible.

According to the Red Book, public open space should form 10-17% of the total land use. Deriving sizes of hard and soft open space facilities is to be with due regard for the needs of different user groups (DoH, 2002). The soft (green) spaces include storm water ponds, agricultural land, recreational areas and meeting places, and ecological areas with linkages between spaces to keep a continuity of green space. To save space and money for compaction, flood zones should be included in soft open spaces as much as possible. It is important to note the public space outside of the site boundaries that can also be used by residents. The hard open spaces are mostly roads and open spaces that accommodate facilities and trading. The lack of public spaces in informal settlements contributes to constant fire hazards, which the provision of firewalls and ensuring dwellings are at least 90m from a fire hydrant, would help to mitigate (CCT, 2004). As mentioned earlier, primary routes with enough space for emergency vehicles (8meters) should be within a 130m² from each other, based on the length of the fire hose being 65meters.

Since there are few hard surfaced roads, which results in less runoff, road and storm water systems do not need to be linked as they are in Greenfield projects (Abbott et al, 2001*). Road systems are based on the existing layout rather than existing patterns of runoff from rainfall. To minimize relocations, the over-land storm water problems within the site can be controlled by elevating top-structures by about 150mm above the existing floor levels (DoH, 2002).

Implementation of services in Insitu Upgrade projects should be done in two phases. The first phase consists of linking communal service centres to external bulk connectors that are generally installed along major routes. Communal service centres contain toilets, water dispensers and washing facilities. Once individuals or groups of households can afford individual services, they may be extended off the linking network. In time, communal service centres may become redundant and close down. Flush toilets should not be the only consideration for communal toilets. Especially in my study area alternative sanitation systems should be used at least until the sewage plant has been built and to avoid the constant blockages from newspaper and maintenance. If flush toilets are installed the core road network would be designed with the conventional sewage and water supply pipelines. At an individual level sanitation technology options should be flexible and based on household affordability. The different technology options will be discussed later.

Water services should also be part of a 2-stage design process. A distinction needs to be drawn between emergency or temporary services and permanent supply in the upgrade process. The permanent supply is only installed once the primary movement network has been finalized (Abbott et al, 2001*). Where

waterborne systems are used for public (communal) toilets, consideration must be given to daily management and the necessity of using toilet paper, which means that attendants must be employed at public toilets as part of the operation and maintenance responsibility of the municipality. Especially in my specific study area, alternative sanitation systems can be used that avoid the constant blockages from newspaper and improper use where there are no employed attendants. If flush toilets are to be installed, the core road network would be designed with the conventional sewage and water supply pipelines. At an individual level sanitation technology options should remain open. Different technology options will be discussed again later.

Procurement of local contractors, local facilitators and employment of local labour along with associated capacity building will improve local opportunities for income generation and should therefore be used throughout the upgrade process through the processes mentioned earlier. In terms of on-going maintenance of public structures procurement can continue through community based road sweepers, refuse collectors, plumbers, cleaners, maintenance and attendance of facilities and open spaces. The 3-grouped model public participation approach discussed earlier, along with variations of inclusive participatory actions, will facilitate local procurement procedures and the management of local service providers.

Once the movement patterns and public spaces, facilities and service infrastructure have been planned as much as possible around existing households, the necessary relocations will have to be conducted to allow implementation to occur. De-densification may also be a common cause for relocations, based on community interaction, where applying the 3-grouped model approach will facilitate voluntary cooperation in movement.

5.2. PRE-EMPTING THE PROBLEM: GREENFIELD SITES

Despite the entrenched focus on informal settlement Upgrading, this approach is nevertheless essentially a reactive response to a problem after it has arisen. Negative aspects of this approach are that it is time consuming and expensive, particularly in comparison with planning Greenfield sites to accommodate incoming residents of informal settlements. An alternative and preferable approach would include pre-empting the increasing 'problem' by planning Greenfield settlements. This would go some way towards overcoming the predominant attitude that regards informal settlements themselves as an illegitimate problem, rather than the urbanization of poverty as a public sector responsibility.

In suggesting that the potential of developing Greenfield sites, on land that is planned ahead for informal settlement, is worthy of serious consideration, I base my approach to further discussion of this

intervention on the rules for settlement-making that are suggested by Dewar (2002), as described in Section 4.

5.2.1. INSTITUTIONAL STRUCTURE

Not all agencies involved in Upgrading would need to be involved in the identification of low-income Greenfield sites. The key issue of land identification and acquisition would currently be carried out by Land Affairs, the Department of Public Works, the Housing Department, the provincial offices of these government departments and the Municipality concerned. The planning framework itself would be the responsibility of planners and engineers reporting to public authorities.

Many complex arrangements and funding required for public participation and the process of relocation prior to installing services would be cut out of the Greenfield site identification. As with the institutional framework for Insitu Upgrading, the ideal institutional framework for Greenfield site development would be guided by the principle of '*Efficiency and Fair and good governance*'.

5.2.1.1. Policies and politics concerning Greenfield sites

Existing policies and legislation in place for acquisition of land for low-income settlements, such as the Expropriation Act (63/1975), the Health Act (63/1977) The Constitution (108/1996), the Prevention of Illegal Eviction from an Unlawful Occupation of Land Act (19/1998), the Western Cape Administration Act (6/1998), the Housing Act (107/1997) and more, are geared towards already existing informal settlements, and thus Insitu Upgrading. The lack of legislation directly related to acquisition of Greenfield sites encourages a form of land acquisition that is "illegal" and meant to be avoided.

Eviction of informal settlements that have already built shacks is normally only granted if alternative accommodation is made available. While these laws have been created to solve the problem of land availability for low-income settlements, they tend to encourage land invasion in practice. A better solution for all would be that is acquired and set aside for low-income settlement, purposefully to avoid invasions.

A review of the effects of current legislative framework, in the light of the failure to provide for the reality of increasing informal settlements, should be geared towards the acquisition of unoccupied sites deemed the most suitable for future low-income settlements. I suggest that In order to achieve this, the narrow political focus needs to expand its view from dealing exclusively with existing informal settlements to include the pre-identification of land for low-income settlements.

5.2.1.2. Roles of Professionals

A dedicated team of officials need to form a unit, whichever department this may be based in at local authority level, which deals with acquiring and planning Greenfield sites. In addition, a program should be drawn up where specific roles and responsibilities are assigned.

As noted by Abbott et al (2001*), three sets of professionals are traditionally involved in the development of Greenfield sites: Land Surveyors, Spatial Planners and Civil Engineers. Initially, the Land Surveyor is responsible for the cadastral framework and recording of all site boundaries that provide a number of individuals with their own piece of land. In the process of land sub-division, allocations are also made for other purposes, such as public open space and public space. The Spatial Planner then defines sites/erven, roads and road reserves, communal facilities and public open space prior to residential development. The Civil Engineer plans and design the provision of services based on codes, the design of services together, link roads and storm water, and the individual erf seen as the point of delivery and collection (Abbott et al, 2001*).

Approaching the development of low-income Greenfield sites in the way that Dewar (2002) suggests, changes traditional roles and procedures to a combination with those used in Insitu Upgrade projects as suggested by Abbott et al (2001*). In particular the role of Land Surveyor is to be changed from that in traditional Greenfield sites, to involvement in capturing and recording only after the people have already settled on the site and community infrastructure has been provided as in Insitu Upgrade projects.

One significant point to note is that Greenfield developments are usually privately driven, where it is usually agreed that a small portion of the Greenfield site will be set aside for low-income housing. It is commendable to encourage public-private partnerships, but in the case of low-income settlements the municipality must be more directly and continuously involved to ensure that the site truly serves the needs and interests of people living in poverty.

At the moment, municipal officials dealing with informal settlement upgrade projects steer clear of Greenfield sites, leaving the job to the planner and private developer. Even when assigned responsibility for Insitu Upgrade projects, planners and engineers alike all too often do not adequately consider the income level, affordability of the amount required by the housing subsidy for the top-structure, or whether users can afford buy toilet paper necessary to operate flush toilets. This is the case in the New Rest Insitu Upgrade project that is presently underway led by Piet Van Heerden from the Spatial Planning Branch in the CCT (presentation at UCT, 02/07/04). Affordability to users is, however, an unavoidable municipal responsibility.

* The larger project-based schemes involving a 16 NITE may have declined in importance recently but (presumably) they still continue... ?

** incremental consent... requires some level of participation, as does the provision of community facilities*

Although public participation as it is currently understood would not be necessary in low-income Greenfield sites, capacity building approaches to job creation, upskilling and education would contribute to sustainability and longer-term development of the settlement. The construction of infrastructure is an opportunity to employ poor people from surrounding low-income settlements or informal settlements. Therefore the structures that are associated with capacity building in Insitu Upgrade projects would still apply, although extending beyond the boundaries to outside settlements in the area.

Community awareness-raising, information dissemination and education dealing with the use of services and household responsibilities would be conducted once the site is occupied. Opportunities arise continuously from targeting the first few occupants for training, to be monitored and paid through direct local employment by the municipality. Local organization would develop and be encouraged around activities such as carrying out skills education for ongoing service provision in day-to-day maintenance, until such time as the site has been fully occupied and secured. The role of officials may thus add capacity on the ground, situated closest to the operation and maintenance, monitoring and evaluation services that officials are currently hard-pressed to carry out properly.

5.2.2. LAND IDENTIFICATION

Identifying suitable land for low-income settlements is the crucial step in pre-empting the problems associated with informal settlements. Viewed as the start towards a more detailed identification of land that is best suited for low-income settlement, this section is based on information available to me at this time, in light of imposed time constraints for research and compiling this document. The land identified in my specific study area is large tracts of land that are the most likely areas for low-income settlement. Further internal investigations within these tracts of land would be required.

5.2.2.1. Informants to identify land for low-income settlements

Often settling on unsafe public land or private land as is the case in my study area, informal settlements emerge reactively, surfacing in areas of least resistance, rather than as a result of sound urban or ecological logic (Dewar, 2002). The difficulty of working in these conditions sometimes dictates that the only option is to relocate the whole settlement. Preventing informal settlements from developing on unsafe land, private land, or land designated for public use, requires clear and publicised allocated functions, such as parks or wetlands so they do not appear as empty land, or fenced with signs to state the ownership and clearly announce the safety issues. This should be seen as a public sector responsibility to the public, including ensuring that signage is understandable by illiterate and Xhosa speaking people.

However, low-income and unemployed people still do need to, and will continue to settle somewhere. Since the city has not pre-identified suitable land to accommodate low-income settlements, informal settlements continue to surface on these problematic sites. Related to laws that state that informal settlements may not be moved unless there is somewhere to move them to, informal settlements remain illegally on sites. An attempt to overcome this situation by pre-empting the problem before it is entrenched involves identifying sites that are most suited to accommodate the lowest income residents.

According to Baumann et al (2002), the process of selecting a site for a particular income level housing group requires: the identification of suitable land in terms of location and surrounding development, in particular to avoid the NIMBY syndrome; assessing its legal and institutional constraints; and checking its physical suitability for development. Based on the studies presented in Sections 2 and 3, the following elements are put forward for identifying the most suitable land for low-income settlement.

When deciding to develop large Greenfield sites, it is crucial to ensure that there is sufficient supporting infrastructure available. **Map 24** contains the specific elements that would influence the location of low-income settlements on the mapped area, which includes a combination of existing and proposed activity routes and railway stations, proposed road infrastructure, vacant land that is left over once the major safety constraints, environmental constraints and the existing built environment have been removed, existing low income areas and existing informal settlements. The urban edge discussed in Section 2 and existing informal settlements are included as deciding factors for areas most suitable for future low-income settlements. I will discuss these factors in more detail below.

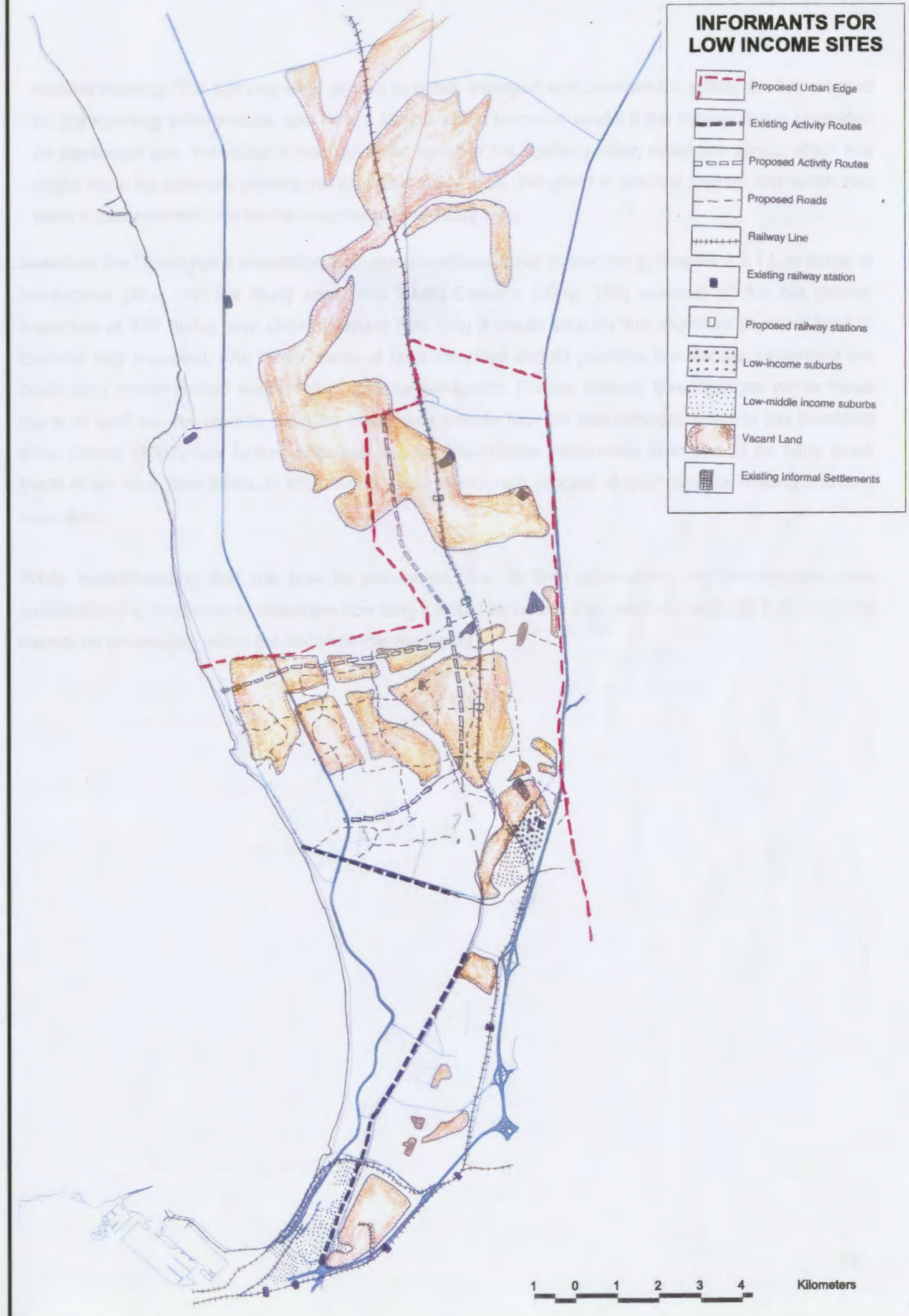
On Map 24, main elements that would encourage economic development and public transport (activity routes and railway stations) and access for low-income residents have been drawn out. The existing and proposed activity routes have been transferred from **Map 17**. Proposed railway stations, shown on Map 24 are selected on the basis that the railway line is changed from goods to a passenger carrying railway line. Railway stations form gateways into and out of the study area. This change would influence the Koeberg safety restrictions in terms of guidelines regarding escape from the study area.

The vacant land left over once the major constraints to development and existing development are removed is also depicted on Map 24. Although the vacant land 'A' is designated for conditional development because most of it falls into the Koeberg 10km restriction area and it contains fynbos in which no rare species have been identified, I have counted it as vacant land that could accommodate development. However within area 'A', the best area for development is within the urban edge as it avoids the Koeberg restriction zone and lies within the proposed urban edge.

In discussing possible land for future low-income settlements I have included the area surrounding the informal settlement Morningstar. This informal settlement is situated on Priority 2 land in terms of constraints, as it has medium soil potential and land with sandplain fynbos where under 5 rare species have been identified. However as most of the factors that make it a Priority 2 site are destroyed by now, it is included as land that could be considered for accommodating low-income settlements.

Vacant pieces of land ^{south of?} ^{north of} the Blouberg hill and above the existing residential development are areas that are associated with proposed transport routes and fall outside the safety and environmental restrictions. There are also various pieces of vacant land south of the M5 and its proposed extension. The biggest of these is Ysterplaat, which I consider a prime site for future low income settlement development. Although there are various small pieces of vacant land within residential suburbs (Milnerton, Tableview etc.), most of these act as or are designated as public space, so that I have not included these as options for future low income settlement development. The NIMBY (not in my backyard) syndrome would also be high within these suburbs.

In terms of combating the NIMBY syndrome, different existing high to low-income areas must be noted as it is preferable to locate low-income settlements nearer to other low-income settlements. Hence, Map 24 depicts the suburbs that are classified as low-income where the majority of are earning below R 3500p/m, which in this case is De Noon. Low to middle-income suburbs should also be considered in this regard. In my specific site this includes the largely industrial residential areas of Paarden eiland, Killarney Gardens and some parts of Brooklyn. In this respect, it would be preferable to locate new low-income settlements near to the railway line. Suburbs tend to increase in income level as they get closer to the coast.



5.2.2.2. Land most suited for low-income settlement

Map 25 shows the most suitable sites for future low-income settlement development, based on my analysis of the informants of land for this type of development - the NIMBY syndrome, access to public transport and economic activity, and land with the least safety and environmental constraints, as discussed above. Details regarding the identification of these sites from analysis are explained below.

1: Land identified to the far North surrounding the railway (Farm 101):

Most of this land is privately owned. The positive factors for low-income development are that both sites are next to the proposed railway station as well as the proposed activity corridor, both of which encourage SMME development. The fact that there is an existing informal settlement, Wolwerivier, situated on the piece of land to the east of the railway adds to the value of the land for low-income settlement. Therefore this is a prime site for the location of informal settlements.

2: Land around Morning Star farm:

This land is privately owned by a farmer. Although it is located further from public transport and activity routes than the other sites, it is still within walking distance of these. The area identified also has an existing informal settlement on it, which adds to its expropriation value.

3: Land associated with proposed roads (East of Table View Tipsite):

This land is well positioned in terms of access to future proposed activity routes and the proposed railway station.

4: Land above De Noon:

This site is nearer to the existing urban fabric and hence opportunities within the study area and the Cape Towns CBD (Central Business District). It is also situated next to the proposed railway station. It is just above the low-income settlement De Noon and therefore avoids the NIMBY syndrome. The existing informal settlement Doornbach, in which the process of negotiation between the City and Private farm owner to buy the land is looking positive, adds to the suitability value of this land for low-income settlement.

5: The piece of land near Canal Walk

Although this piece of land is in a good position in terms of commercial nodes (Canal Walk and other facilities), there is likely to be a high case of NIMBY syndrome from the owners of Canal Walk, offices and businesses dependant on high income visitors and clients.

6: Ysterplaat military site:

This site has been subject to numerous proposals to become Greenfield sites that would incorporate low-income settlements, but there has been no movement that direction as yet. In the most recent Blaauwberg Spatial Development Plan (2002), Ysterplaat is proposed as a new Airport site. I do not however, believe that an airport base in the middle of the expanding city would be appropriately situated. Ysterplaat is a prime spot in terms of residential development and especially attractive for low

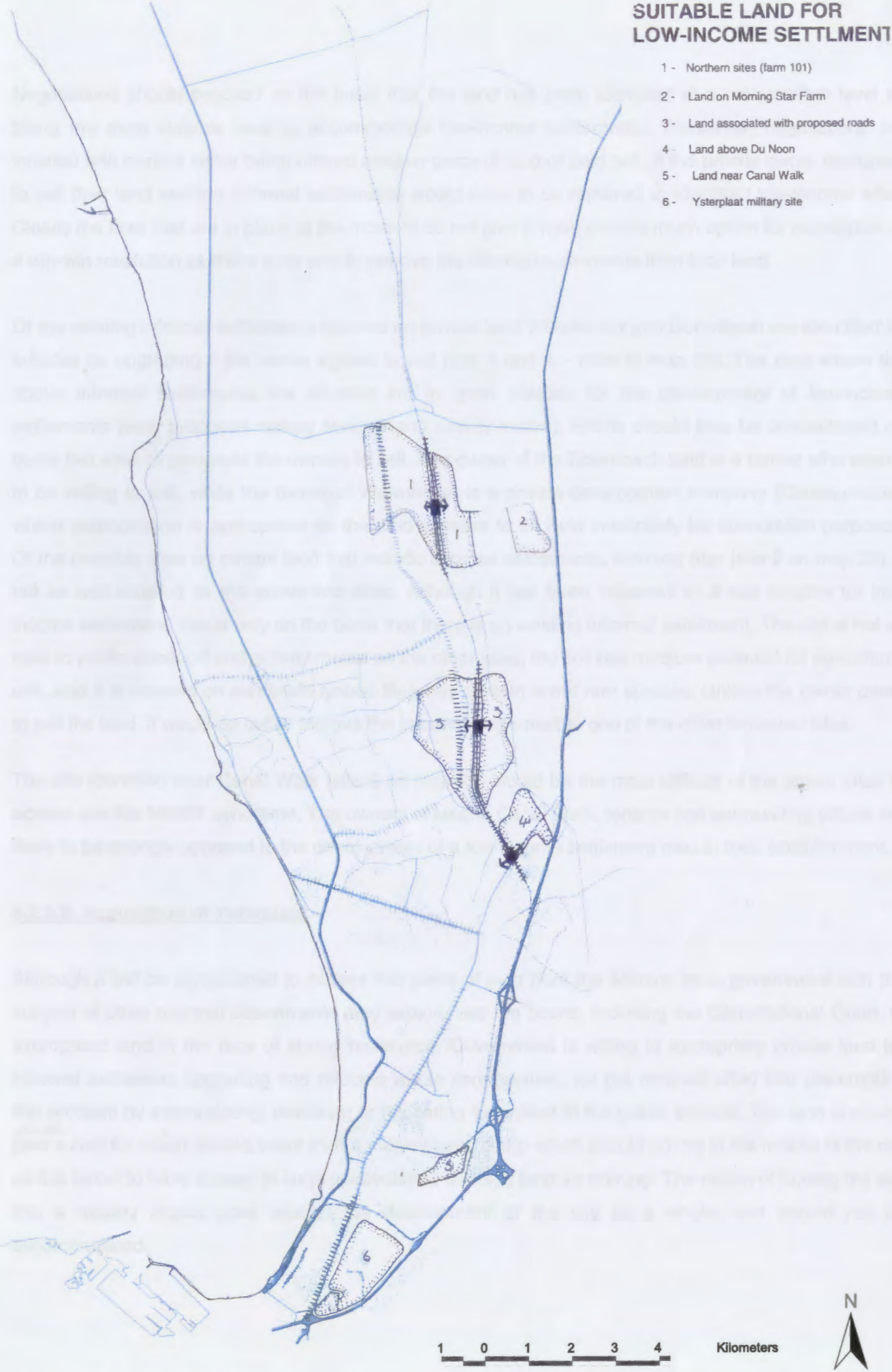
income housing. The site has easy access to public transport and commercial activity as it is situated on the Koeberg activity route, and near a station which becomes useful if the railway line is upgraded for passenger use. Ysterplaat is also out of the range of the Koeberg safety restriction zones, which is a major issue for potential developments in this study area. Wingfield is another military site which has been considered which is on the boundary of the study area.

Based on the Dorrington's population increase projections (refer to Section 2, chapter 2.3.1.), in terms of low-income influx into the study area, and taking Dewar's (2002: 103) estimate of the net density maximum of 120 du/ha, one could estimate how long it would take for the identified tracts of land to become fully occupied. The larger tracts of land identified should prioritize low-income settlement but could also accommodate some higher income settlement. Further internal investigations within these tracts of land are required to estimate how many people may be accommodated within the identified sites. Dewar (2002) has further proposed that for low-income settlements land should be fairly small tracts of not more than 25 ha, to allow for an easier democratic process of local decision-making and land allocation.

While recommending that the task be conducted, due to time constraints, the investigations and calculation of a timeframe to determine how long it would be before the identified tracts are fully occupied cannot be undertaken within the scope of this document.

SUITABLE LAND FOR LOW-INCOME SETTLEMENT

- 1 - Northern sites (farm 101)
- 2 - Land on Morning Star Farm
- 3 - Land associated with proposed roads
- 4 - Land above Du Noon
- 5 - Land near Canal Walk
- 6 - Ysterplaat military site



5.2.3. LAND ACQUISITION

Most sites identified on **Map 26** are situated on private land or owned by the military. The acquisition of well-located private land for housing development is guided and financed by the Department of Land Affairs (National D0H, 2/9/2004).

A problem arising from policies and politics focusing narrowly on informal settlement upgrading is the encouragement of land invasions, since people appear to know this as a means to getting relocated or receiving services. Empty land must be demarcated clearly with proper regulation of laws enforcing safety and legitimate designations for land that is publicly accepted as for the public good. However, more importantly, prevention may be achieved through making sites available for settling in the most affordable manner until people may have enough money to afford better accommodation. Preventing land invasion through a two-pronged approach is the only solution is to plan ahead for this type of settlement that can accommodate even the poorest.

In the new plan for housing delivery, produced by the National Department of Housing (02/09/04), a strategy to facilitate the release of well-located public land to municipalities is supposed to be developed in co-operation with the Department of Land Affairs and Department of Public Works. Suitable public land and land held by para-statal organisations may be transferred to municipalities at no cost. However, this does not include the acquisition of prime well-located private land. Given the urgency and increase of the problem, I believe a strategy for the release of identified best-located land for low-income settlements is needed both for public and private land.

5.2.3.1. Acquisition of private land

Efforts made by the government to release private land with existing informal settlements for Insitu Upgrading is commendable, however just as much effort could be put into acquiring unoccupied public and private land that is best suited for future low-income settlements. The City should continue with negotiations with private owners to sell their land to the city for existing informal settlement upgrades (for example, Wolwerivier, Morningstar and Doornbach). However, private owners could be coerced with incentives to sell, through negotiation as in the Bauleni example rather than forced to sell. } ?!

Private owners of land that has been identified as land most suited for development of low income settlements should be approached by government to sell their land. The approach should not just be based on the fact that an informal settlement exists on the site, but based on strategically located parcels of land identified in terms of access urban opportunities such as activity corridors and railway stations.

Negotiations should proceed on the basis that the land has been identified at a metropolitan level as being the most suitable land to accommodate low-income settlements. Thereafter, negotiations are initiated with owners either being offered another piece of land or paid out. If the private owner disagrees to sell their land existing informal settlements would have to be removed to identified low-income sites. Clearly the laws that are in place at the moment do not give private owners much option for negotiation of a win-win resolution as there is no way to remove the informal settlements from their land.

Of the existing informal settlements situated on private land Wolwerivier and Doornbach are identified as suitable for upgrading if the owner agrees to sell (site 1 and 4 – refer to map 25). The sites where the above informal settlements are situated are in good position for the development of low-income settlements (near proposed railway stations and activity routes). Efforts should thus be concentrated on these two sites to persuade the owners to sell. The owner of the Doornbach land is a farmer who seems to be willing to sell, while the owner of Wolwerivier is a private development company (Communicare) where expropriation is appropriate as the land appears to be held indefinitely for speculation purposes. Of the possible sites on private land that include informal settlements, Morning Star (site 2 on map 25) is not as well situated as the above two sites. Although it has been indicated as a site suitable for low-income settlement, this is only on the basis that there is an existing informal settlement. The site is not as near to public transport and activity routes as the other sites, the soil has medium potential for agricultural use, and it is situated on sandplain fynbos that may contain some rare species. Unless the owner offers to sell the land, it would be better remove the informal settlement to one of the other indicated sites.

The site identified near Canal Walk (site 5 on map 25) would be the most difficult of the above sites to access due the NIMBY syndrome. The owners of land in Canal Walk, tenants and surrounding offices are likely to be strongly opposed to the development of a low-income settlement next to their establishment.

5.2.3.2. Acquisition of Ysterplaat:

Although it will be complicated to access this piece of land from the Military, local government with the support of other national departments may explore use the courts, including the Constitutional Court, to expropriate land in the face of strong resistance. Government is willing to expropriate private land for informal settlement upgrading and relocate whole communities, yet put minimal effort into pre-empting this problem by expropriating, removing or relocating Ysterplaat in the public interest. The land is clearly best suited for urban development than a military base camp which should not be in the middle of the city as it is better to have access to large undeveloped tracts of land for training. The notion of turning the site into a military airport goes against the development of the city as a whole, and should not be accommodated.

If owners agree to sell identified sites through the process of negotiation, the same steps that applied to the acquisition of site with existing informal settlements would need to be taken to change the land ownership and land use zoning rights (refer to Section 5, chapter 5.1.2). In this case land use would have to change either from a military site to a preferably a mixed-use zone for residential and commercial use through a process of rezoning.

5.2.3.3. Rating of suitability

By analyzing the above information on land identification and land acquisition, a rating of suitability can be made on identified sites on Map 25.

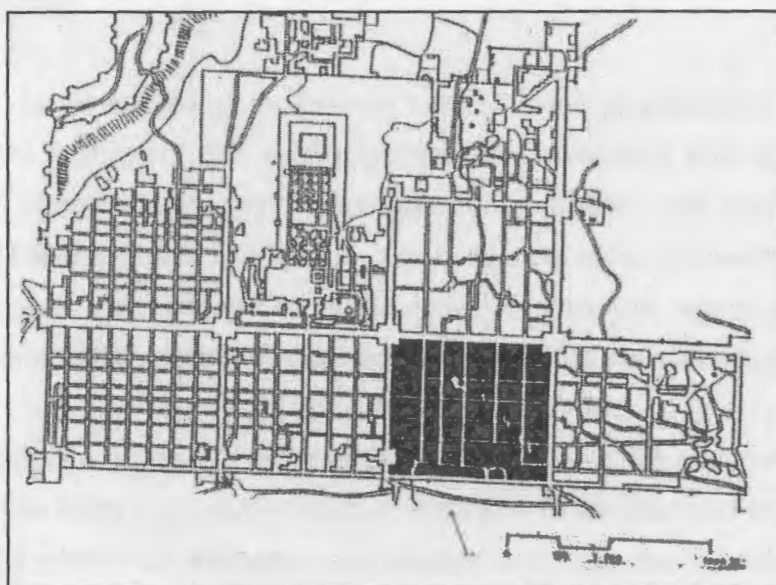
- Less suitable (not as strategically located or high NIMBY syndrome): 2 and 5. If acquisition proves too difficult or is not in the best interest at in terms of the environment, then these two sites should not be considered.
- Highly suitable (strategically located and least NIMBY syndrome): 1,3, 4 and 6. The acquisition of land for these 4 sites, or areas within these 4 sites should be confronted together. Site 4 will probably be accessed first since the land occupied by the informal settlement is likely to be sold to the municipality. This site is also in a good position and not dependent on the development of the proposed transport routes and activity corridors.

5.2.3. THE PLANNING FRAMEWORK

This section will largely rely on Dewar (2002) for leads on how the planning framework should be approached upgrading low-income Greenfield sites.

Local authorities should strive towards integrating informal settlements and community upgrading into a city-wide management programme. One useful international example of an integrated informal settlement with equal access to opportunities in the city, noted by Dewar (2002), is Jaipur, India (see **Figure 24**). Here the external edges of informal settlements are integrated into the larger formal structure of the city and treated in the same way as the more formal areas (Dewar, 2002). Jaipur's framework displays maximum freedom of decision making and is an example on how plan making requires a minimum of actions to maintain desirable relationships and generate opportunities (Dewar and Uytendogaardt, 1991).

Figure 24: Integrating informal settlements: The example of Jaipur



(Dewar, D. and Uytendogaardt, R.S., 1991)

When upgrading Greenfield sites for low-income settlement, the main focus is on publicly provided structures. As Dewar (2002) notes, these are movement structures, public spaces, public facilities and utility services provision. Public spaces, as the primary form of social infrastructure, should be integrated with the primary movement framework, and at least one space should be multifunctional. Public facilities are to be clustered and associated with public spaces by defining their edges, while utility provisions must be associated with major movement spaces and link with higher order public spaces. The important provisions are collective bathhouses/laundries, water points and refuse removal points (Dewar, 2002). It is also important for planners to recognise where flexibility should be applied in plans to accommodate private initiatives.

The argument underlying the upgrading of low-income Greenfield sites is to learn from informality to plan well-functioning low-income settlements. Therefore land regularization should only be applied once the initial settlers have settled in the position that best suits their needs. Once a steering committee is formed, although some form of public sector monitoring should occur, they should be in control of allocating plots to newcomers.

This is the ideal approach to planning for low-income settlement on Greenfield sites. However, in instances when time is constrained and the need is urgent, another approach more closely related to the In-situ Upgrade approach may be applied to Greenfield site preparation for low-income households. In cases where the municipalities do not have the time or resources to supply all infrastructure the simple method of leaving pegs for the basic layout of the settlement is acceptable. Once people have started to settle in the area, a process similar to In-situ Upgrading can be used. Although not ideal, at least in this case poor people will have somewhere to settle that is safe and legal, rather than settling illegally. This

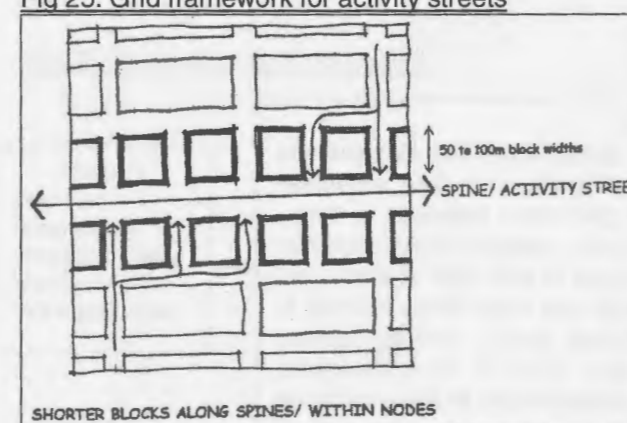
part of the document will deal with the approach that accommodates a planning framework prior to occupation to avoid the lengthy process of public participation and relocations.

Dealing with the approach which allows for infrastructure to be planned prior to settlement is led by Dewar's (2002) report "Working with Informality". His central concern is to work with informal processes of settlement-formation through flexible planning, and to establish what the public and private actors' roles would be in this process.

5.2.4.1. Movement networks

Since professionals would be working with 'unoccupied' sites, the historically ordering device of the grid system should be used. This pattern accommodates flexibility with an ability to respond to growth and change while allowing for (not causing) the development of a dense and compact urban environment. A Grid framework consists of hardened or surfaced main circulation routes incorporating primary and secondary routes that allow access to all parts of the settlement, and accommodate emergency and service vehicles on higher order routes (Dewar, 2002). Routes should be 20m wide to act as public spaces. The scale of grouped dwelling units (neighbourhood blocks) is determined by length of fire hose (approx 80meters) and results in a grid of 160m² circulation mainframe (Abbott, 2002). **Figure 21** shows an example of this type of grid system (Dewar, 2002).

Fig 25: Grid framework for activity streets



(Baumann et al, 2002)

In order to enhance activity streets in the area, urban blocks adjacent to activity streets and nodes must be shorter (refer to **Figure 25**) to enhance pedestrian accessibility (Baumann, 2002). For a full range of activities to be located within walking distance of one another, a higher density is required in such areas (Baumann, 2002).

All the movement routes within the site would be pedestrian friendly and encourage cyclists, with limited vehicular usage. If the site is large enough to contain major activity routes, bus stops would be limited to 500m intervals. When applicable, a 1.5-2km distance between train stations should be applied.

5.4.2.2. Public structures

As mentioned earlier, public spaces as the primary form of social infrastructure are to be integrated with the primary movement framework and public facilities are associated with these. Utility services will parallel the main circulation routes and ensure that public facilities are supplied with electricity and sanitation services. Dewar 's (2002: 91) opinion of the minimum infrastructure that should be provided in a low-income settlement includes: larger public spaces; collective water points; collective toilets; bathhouses/laundries; refuse tips at centralized pick-up points; and electricity to public schools.

As noted by Dewar (2002) existing informal settlements do not as a rule accommodate the higher spatial order public spaces. The lower order public spaces, such as shared courtyard space created by dwellings facing each other, and pedestrian walkways, are created and respected by the community. The lack of higher order spaces requires intervention as this causes a constant fire hazard that spreads very rapidly.

The three forms of higher order public spaces to be planned are: Larger gathering or social spaces represented by primary social infrastructure and integrated with primary movement framework as the highest order space (Dewar, 2002). At least one of these spaces is a multi-functional special place: landscaped, surfaced, and large enough for community gatherings and informal trading. There are to be production spaces towards the edges of the settlement for community allotments, small livestock, communal grazing, corralling of animals and nuisance activities such as hammering. Protective spaces are defined in generous linear spaces for movement, fire breaks, and places of meeting and playing. These are illustrated in **Figures 19 ad 20** where public spaces and their associated facilities (such as spaza shops) that require high accessibility to the broader community are located at the corners of the settlements, and more group specific collective activities (eg. collective water point, bathhouses/laundries, and garbage removal pick-up points) and facilities are placed around internal edges and movement channels (Dewar, 2002).

In terms of sanitation and water facilities, in this section I will only be referring to communal and bulk services. The details on different technology options and individual services will be discussed later.

A network of bulk services (potable water, sewage disposal, electricity, storm water disposal) is associated with major movement spaces and linked to higher order public spaces. Public facilities, commercial and small-scale manufacturing activities thereby gain access to necessary services (Dewar, 2002) and groups of housing units are allowed to opt-in or opt out depending on personal needs and resources. A system of service centres including bathhouses and collective laundries are associated with public spaces and deliberately set up as meeting places. Skips for garbage collection occur along major movement network (Dewar, 2002) while wastewater is recycled to irrigate public spaces.

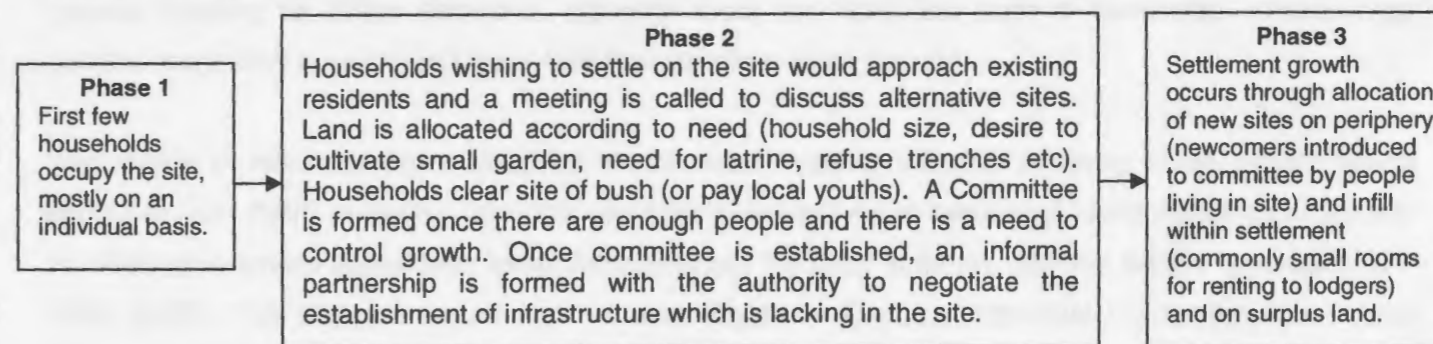
Toilets and taps are placed no more than 100m away from all units. Dewar (2002) used the Figures 5 and 6 to demonstrate how collective activities and facilities should be spatially positioned. The idea is to integrate these public structures through placing them at the most accessible points in the site.

A range of plot sizes according to need is to be encouraged with the maximum of 200 m² plot sizes to accommodate a range of household activities such as second dwellings, spaza shops, small vegetable gardens, outside cooking spaces, and laundry. On average, plot sizes will be in the order of 100m², with net densities not exceeding 120 units per hectare (Dewar, 2002).

5.4.2.3. Process of land occupation

The thrust of Dewar's (2002) document was to indicate to professionals and officials that plans require flexibility in terms of site allocations in order to allow people to position themselves, or to be positioned by a committee according to their needs. **Figure 26** is based on Dewar's study (2002) on the processes of land occupation that occurred on Site 5 in Noordhoek and in other unplanned Greenfield sites (Crossroads; Sun City in Sir Lowry's Pass; Bloekombos in Kraaifontein; and the Waterworks Site in Grabouw). The land occupation process laid out in Figure 26 is can be used as to guide and inform planners and public sector officials.

Fig 26: Process of land occupation



From Figure 26 it is clear that land occupation processes usually reflect a logic and rationality in terms of organization. For example, all the settlements Dewar (2002) studied saw the need to elect a committee to oversee the land allocation process once growth had increased (Dewar, 2002). Through the settlement formation system in all the settlements Dewar (2002) analysed, social organizations emerged. This assumes that the public authority's role in the process of land occupation is limited to monitoring existing land allocation structure. Dewar (2002) mainly deals with the natural process that occurs on sites that were generally not always initially intended as Greenfield upgrade projects. However, this process would

need to be monitored by a professional social worker to ensure that one or a few individuals do not exploit the committee system.

The process of land occupation in Greenfield sites, once there is a formal program set up, needs to contrive to avoid ward/ lord type of controls and perverse incentives for committees. While this issue has not been adequately dealt with by Dewar (2002), studies by Huchzermeyer et al (2004) on informal settlement upgrade projects in developing countries indicates that the common problem of dominance and war-lord type of control was the largest problem. There are however many ways this issue may be addressed once it is acknowledged. Therefore there must be some form of municipal control during the process of occupation.

Adaptations of the following sequence may be applied:

1. Once the site has been prepared, the municipality should have a mobile unit situated in an accessible location, or on site, which allows for people to apply for plots. This would be specifically geared at families or individuals earning below R1600 p/m or those who are unemployed. It has been indicated from the 2001 census and other studies that the majority of households currently living in informal settlements earn below R1600 p/m - refer to Section 2.2.3.
2. Once the first few households are established on the site, an interim committee may be established to discuss alternative sites that new comers should be allocated, and other developments of this phase.
3. As Dewar suggests, once there is more of a need to control growth of the site a steering committee may be established to control this growth. This steering committee should be rotated with new members elected in each rotation to ensure fair decision-making, representation of diversity and maximum involvement.

Local organisation development is best nurtured around tasks and elements of projects as they arise, and while allowing for natural propensities to organise officials must undertake to stay in touch with developments with ongoing participatory investigation that is based on authentic interaction over this matter would be needed prior to a context specific program being drawn up.

5.3. OPTIONS THAT APPLY TO BOTH OF THE ABOVE APPROACHES DEALING WITH LOW-INCOME SETTLEMENT

5.3.1. LAND TENURE AND LAND REGULARIZATION

In term of Insitu Upgrading, as soon as the decision has been made to upgrade the site, people should be given an interim "rights to occupy" land. The local authority keeps a register of occupants through issuing registration cards if they do not already have them, until the fixed boundaries and registration

process has been sorted out (Western Cape Department of Housing, 2003). In low-income Greenfield sites, the "rights to occupy" interim can be applied throughout the process of occupation until the site is at its capacity. This allows freedom to move around the site to the most suitable location. It is at this stage of the project that residents are to be properly informed and educated on potential tenure options so as to understand their rights, obligations and responsibilities.

Once the erf and the shack on it has been officially delegated and given an address, the tenure process can proceed. Some people may choose to remain in this "rights to occupy" tenure status, as it is similar in content to the informal tenure. One necessary condition is that the site must be continuously occupied. People are allowed to rent out part of the site or sell their rights as long as the exchange is properly recorded. At the same time those who want access to a more secure tenure and can afford the rates and service charges that come with it, may at this stage apply for individual ownership or communal ownership

Although communal ownership has advantages and should by no means be discouraged, it is more complex than individual ownership. This takes the form of a contract between the member and the communal ownership body. Rights to occupy may depend on certain conditions; however these rights can be sold so as to accommodate mobility. The preferred form of communal ownership suggested for low income housing in urban areas is housing co-operatives (Western Cape Department of Housing, 2003). In co-operatives, all residents are members of the co-operative and jointly owned property. Members of the co-operative elect a Board of Directors to manage and each household has a vote in the general meeting for major decisions. Although there are risks, this form of ownership enables high density, multi-story housing and lower bulk infrastructure costs per unit.

The choice of tenure is constrained by the National Housing Subsidy scheme, where project linked subsidies, and CMIP subsidies, are only awarded to full individual ownership. Institutional subsidies are an alternative tenure option with fewer limitations but the local authority may not be the developer (WP DoH, 2003). The different tenure options are: Rights to Occupy; Individual Ownership; Communal Ownership (WP DoH, 2003). Community involvement in arriving at tenure options is crucial and changing tenure status can unbalance existing powers. It is important to inform and educate residents on the potential tenure options and the rights, obligations and responsibilities associated with each option. In emergency and temporary infrastructure approaches, settlements have only short-term security, which is the least conducive to well-functioning settlements.

Unlike traditional Greenfield sites, in low-income Greenfield and Insitu Upgrade projects the involvement of the Land Surveyor in formalizing boundaries and plots only occurs after the planning framework has been implemented. Instead of the traditional approach to Greenfield sites where land tenure is obtained

first, in line with upgrade sites, the legal demarcation of cadastre (land tenure) in both low-income upgrade and Greenfield sites should occur after the installations of community level infrastructure has occurred. This allows households to move around the planning framework according to their needs (commercial activity along major routes, nuance work and bigger sites on periphery etc).

Instead of owning a house (top structure), in low-income Greenfield settlements the emphasis is on moving towards owning the land. As raw land is expensive for the city to acquire some form of subsidised payment would need to be made by individuals who occupy raw land in order for them to own this land. In the 2003 'Netreg Housing project' the price of raw land was R 405 per housing unit (Martin, 2003), probably based on the average plot size of 4m x 12m (Abbott et al, 2001*). Other sources of funds and if necessary some of the funds provided for the top-structure in housing subsidy schemes can be used to subsidise land ownership. Household payments could either be in cash or paid off through labour in upgrading the sites, or service provision in maintaining communal infrastructure. In other words, households could earn their land through labour in preparing, providing and maintaining infrastructure and necessary services in Greenfield and Insitu upgrade sites. Social elements that can also provide local employment (eg. social workers) are more frequently required in Insitu upgrade projects. Local service provision for maintenance remains an option to be explored by the CCT municipality.

5.3.2. PROVISION OF INDIVIDUAL INFRASTRUCTURE

When residents of the settlement are sure that they can afford to maintain (operational costs) individual services and a top-structure, then the options and considerations discussed in this section should be made available to them. In terms of individual sanitation and water services and top-structure choices, both of Upgrade and Greenfield approaches may apply a similar strategy.

5.3.2.1. Individual water and sanitation options

Which individual services can be provided, and the level of service that is provided, should be based what the city can afford to provide and what people can afford to pay. It is at this service level that users should have the most choice which requires that they are well-informed to make a choice that best fits their needs and income level, as well as not exceeding the given limitations of the real budget.

The provision of water, as with sanitation facilities, will be at a communal (public) level until people can afford to pay for their own connections and take the initiative to do so. The idea is that eventually the public sanitation and water services will be replaced by individual services once people are willing to invest in their site. A water connection fee will apply and household labour will be used as a contribution, in lieu of finances, wherever feasible.

In the specific study area, until another Sewerage Plant is built, sanitation infrastructure for low-income residents both at an individual and communal level should only be on-site dry-sanitation or VIP systems depending on density and geo-physical factors. Waterborne sewerage and individual or shared flush toilets cannot be an option due to excessive capital and operation and maintenance costs, as well as daily expenses to people living in poverty not being affordable. The health hazards created by blocked sewers are extremely serious, defeating the purpose of sanitation provision, as are any facilities that are overloaded with a high ratio of households sharing. People should be made fully aware about all the costs and consequences (including toilet paper and water bills if using a flush toilet) so that they may review their assumptions as to whether it is indeed affordable and desirable to have an individual flush toilet.

The concept that flush toilets are more efficient does not apply in informal settlements, mostly due to the common use of newspaper instead of toilet paper. Frequent blockages require constant maintenance and cause health hazards. Only with full time attendants can public toilets be reasonably maintained and an excessively high ratio of households to individual units is impossible to maintain hygienically. The **Figure 27** below shows how flush toilets are reduced to health hazards if they do not receive constant maintenance. Typically, the door is broken and the toilet is blocked with newspaper. Presently in the City of Cape Town flush toilets are the only toilets considered for the provision of permanent services (refer to Table 1 in Section 1.3) while pour flush toilets and VIP toilets are considered rudimentary service provision.

Figure 28-30 show alternative sanitation options that are not connected to waterborne sewerage systems. The only alternative sanitation option offered by the City of Cape Town as a rudimentary/intermediate service is VIP toilets. Figure 29 is the version of VIP toilets that were previously supplied by Gys White from the Health Department. Archloo top structure on the VIP system (Figure 28) are now being supplied to informal settlements in my study area by Maketha consultants. To date the provision of VIP toilets in the City of Cape Town is mainly being provided in the rural periphery of the Northern suburbs.

The dry sanitation options are not part of the Insitu Upgrade strategy of Cape Town. As can be seen from **Table 12** in Section 5.1.1.2, which compares the costs of different sanitation options, dry-sanitation systems are the cheapest system to provide, operate and maintain. An example of an effective dry sanitation system is the Urine Diversion System such as the one being provided to individual households by Ethekwini municipality in Durban Metro, where of this system is considered as full service provision (Figure 26). The best known UDS (Urine Diversion System) systems are working well in Sweden, Mexico, Namaqualand (where there is no water to flush away) and Durban. It has also been tested in some

Informal settlements in Cape Town (eg. Vredehof, Khayalitsa), but on no significant scale. One of the issues preventing the CCT from testing these systems is the density issue.

UDS toilets in Durban are installed in rural periphery areas and are thus believed to require more space. However, trials in Cape Town at the moment (Michael Page in Red Hill informal settlement - a bag system with a bucket that gets disposed elsewhere in a container to dry on their site) could prove that with some deviations the system can operate under higher density urban conditions. Another more expensive option that avoids use of the main water sewage plant but maintains a normal flush system is where the waste gets transferred into a soak away that needs to be de-sludged every 8 yrs or so. Due to this sanitation system being the most expensive system it is generally avoided for and by low-cost households.

Figure 27: Flush toilets



VIP toilets: Figure 28 Figure 29



Figure 30: Urine Diversion System (Dry sanitation)



Pedestal and Urinal of UDS

The City of Cape Town's "rudimentary" level of services has standpipes within 200m walking distance and water is being provided for free. Water is metered but only to see how much water is being used not to control or promote the sustainable use of water. As the city is already at a point of crises concerning water resources this lack of management can only have negative results on the capacity of the city to

provide free water to those who need it and creating bad precedent. While the 6kl of free water will remain available, standpipes that are provided must be metered using systems of control that do exist, such as pre-paid (first 6kl free) cards.

Illegal connections to water pipes remain a problem in terms of controlling water usage in low-income settlements. One-way that has been demonstrated to limit illegal connections to water pipes effectively is through a metered water system provided to each household, based on a prepaid water tank system – the electronic Baillif Electronic unit. This is a system that has been operating in Durban (Ethikwini) successfully as an alternative to the provision of communal standpipes and has proven to be more cost effective. It allows for controlled individual connections (through a water connection fee) and cuts out municipal inputs to follow up for payments.

Figure 17 and its associated text can be referred to demonstrate how this system is planned and operated. In Ethekwini the provision of UDS toilets and Electronic Baillif units for water provision is considered a full service provision in alignment with national policy guidelines. This alignment allows Ethekwini to access the under-expended and generous annual national funding allocations to eliminate the sanitation backlog in the country.

5.3.2.2. Top-structure options for individual households

A difference between Insitu Upgrade projects and Greenfield projects, in relation to the shape and size of the top-structure, is density. One of the main issues in urban upgrade projects is that these are high-density settlements and de-densification has to occur to allow communal infrastructure to be installed. In rural areas density is not as much of an issue. In Greenfield sites, in the beginning the size and location of plots would be defined by individuals themselves and then later by a local committee. Therefore it is likely that the later settlers will have smaller plots as density increases.

In terms of the dwelling top structure, the most important provision is that of a slab to situate dwellings and a firewall to prevent the spread of fires. Thereafter, people have the option of whether they want to further invest in a top structure utilizing the housing subsidy scheme, whether they build their own formal house through the PHP or build their own shacks informally to their own standards. In terms of storm water, the floor levels of structures must have a 3% rise above footways (DoH, 2000).

There are two main routes for low-income residents in South Africa who are ready and able to invest in a formal top-structure, as explained below:

- The Housing Subsidy Scheme employs a contractor to provide an RDP type house. Currently the housing policy provides a housing subsidy scheme with 6 funding options to all those eligible in

the income bracket of R3500 per month and below. The options are: project linked subsidies; individual subsidies; Consolidation subsidies; Institutional subsidies; Relocation assistance; and discount benefit schemes (DoH, 2003). All subsidy beneficiaries must contribute R2 479 before infrastructure can be installed (Dept of Housing, 2003).

- The People’s Housing Process (PHP) where the top-structure is designed by the community recipients using local labour and a material voucher system (voucher is exchanged for material supplies). In this case a Housing Support Centre oversees implementation, including administration, material ordering, and monitoring (DoH, 2003).

It should also be mentioned that the provision of low-income houses is included within Greenfield projects by private developers, through public-private partnership (eg Melkbosstrand and Parklands 4th developments).

Formal houses built by developers, such as the privately driven Greenfield developments in this area that included a section for low-income settlements, or contractors as in the housing subsidy scheme, are subject to the Housing Consumer Protection Measures Act (Act 95 of 1998) and covered by the warranty scheme of the National Home Builders Registration Council (NHBRC) (DoH, 2003). The PHP is not covered by the NHBRC warranty scheme, however, the Western Province Housing Development Board have approved a minimum standard for PHP projects.

Both the Housing subsidy scheme and the PHP include the provision of service infrastructure. My argument for the Greenfield approach is based on separating the provision of services (at least at an individual level) from the provision of the top-structure and on optional individual water and sanitation services. It should be allowed that the top-structure and individual sanitation technologies are decided at an individual level at people’s own time and according to affordability.

If individuals decide on a formal top-structure, I do not believe that the subsidised RDP-type housing is a feasible an option. In the case of RDP houses, people not being able to afford to pay off and/or sell or rent out as soon as possible has now been recognised as a significant problem. The Peoples Housing Process is a better route for low-income settlements in terms of sense of ownership and preferred quality. Most of the people I spoke to in the various informal settlements in my study area did not like the RDP-type house, but preferred living in their shacks. Figures 31 and 32 below taken in the upgrade site of Du Noon reflect the substantial differences between results in the RDP-type house and the self-built alternatives.

Useful lessons may be drawn for the provision of top-structures from the Maweni informal settlement upgrade project in Kenya, and the Bauleni upgrade project in Lusaka, Zambia. Both case studies had the

goal of facilitating the provision of decent low-cost housing to squatters through a self-help approach (refer to Tables 6, numbers 2 and 7).

In Maweni, community members relied on friends for labour and other resources so that 77% of finances were mobilised from member’s contribution to building of the top-structure. Most houses were built with basic materials made available by an income generating branch, and were constructed informally, outside the formal Framework of Kenya building by-laws. Building was incremental, starting with a 10 by 10 foot room with additions made by residents according to their resource abilities. The manufacture of bricks was by a local SMME and selling of building materials was marketed by the Maweni Development Group (MDG). This contributed to increasing new jobs and local income. In this case, every member had to abide by decisions taken by the MDG on the levels of infrastructure provision. Using a Building–Together Approach (BTA), groups of squatters agreed by majority vote for raising any additional finances required to provide supplementary services within their own area.

In the Bauleni informal settlement upgrade project house improvements were made available through community revolving funds, micro-loans and use of low-cost building materials. Alternative sanitation options were used throughout the development with some technical options built by home-owners themselves. There was a 75:25 percentage split of material supplied by the donor and homeowner.

Figure 31: PHP



Figure 32: RDP house



My argument is that people should be allowed to live in shacks within ‘formal’ settlements. The piece of land would be primarily owned, leaving the choice open as to whether to live in a shack or invest in a formal house. Figure 33 shows the difference in the types of shacks that emerge in informal settlements (Skandaalkamp and Ogieskraal). On a field visit I observed odd double storey shacks. The figure to the right is an example of how individuals can use their own initiative to build a shack that is not an eyesore to the space. This individual was particularly proud of her family’s shack and did not like the idea that it may be destroyed if the site was to be formalised. People would generally invest more value into their shacks knowing that they may stay on the land permanently.

Figure 33: Informal shacks



Formal top-structure options: Once individuals or groups are ready to acquire formal top-structures (based on the self-help approach), various options would be formulated and tabled for stakeholder consolidation. Some include:

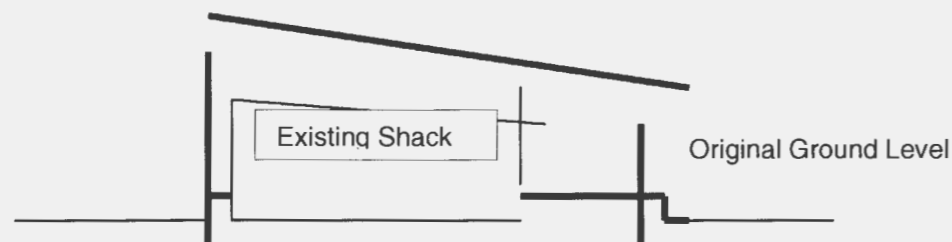
a) The Eco Beam concept

This concept allows people in informal settlements to erect new dwellings over their existing shacks, to allow incremental upgrading of their dwellings. Ecobeams are designed locally by Mitek SA, to support a second storey over an existing shacks. The beams comprise a lattice of galvanised iron metal strip between two planks.

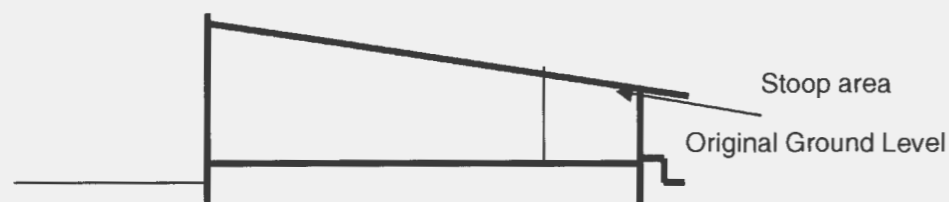
The Ecobeam framework holding up the second storey can be used to hold walls made of sandbags, which can be plastered and painted. The other advantage are that it can be constructed by local labour, is cost effective, time saving and builds community self-reliance. (UCT: Monday Paper Vol 17 No 11 May 4 - 11, 1998.) The one disadvantage is added surcharge on poor ground bearing capacities due to the two-story structure.

b) Other concepts

Phase 1: Install 'Econ-frame' over existing shack with brick step. Place fill material to new floor level and compact. Build sandbag shell (except stoop area) and plaster



Phase 2: Remove existing shack, complete compacted infill floor, lay concrete screed and construct stoop wall



This concept is promoted by the following aspects-

- The need to control storm water around the house
- The stoop space encourages a community/ social ethos and surveillance of front community court areas
- Durability and sustainability if harsh Cape weather

c) Development security

The arrangements of top structures and the definition of space around them will assist in enhancing neighborliness and reducing crime (www.lgc.org/)-. Hence the following configurations are proposed for further stakeholder consolidation-

- 5.9.1. Low rise buildings with central courtyards
- 5.9.2. Stoops
- 5.9.3. Clearly defined public and semi-private space
- 5.9.4. Defined ownership (who owns what space)
- 5.9.5. Community ethos (need to create place and reason to get together- small play grounds, corner shops, community rooms, recreation areas, toddlers play park, community gardens, stoops, front porches, presence of trees and grass etc)
- 5.9.6. High maintenance ethos (well-maintained property reduces crime)
- 5.9.7. Windows to surround POS (surveillance reduces crime, also residents need to know and watch out for each other)

d) Governance

- Responsibility to share and care for agri-strips, toddler play areas
- Responsibility for maintenance and placing of communal toilets
- Responsibility for construction and maintenance of secondary and tertiary sanitation and water supply lines, rodding eyes and manholes
- Equity share i.t.o female involvement and payment of services
- Community construction and maintenance of top structure upgrades
- Community decision-making: wrt top structure designs sizes, stoop orientation etc. This ensures community buy-in

('Not one size fits all': (W.Smit, Program Director : DAG, mail Guardian on line: 22 July 2004)

e) Cost determination of Top Structures

- Maximise the benefit from available funds- trade offs with community priorities
- National Housing Subsidy
- Sweat Equity
- Micro-financing from Private Sector and non-profit organizations
- For two options mentioned, costing is based on –
 - Cost of 'eco-frame'
 - Cost of bagging and plastering
 - Cost of roof cladding
 - Cost of infill material and compaction
 - Cost of floor slab
 - Cost of stoop rails
 - Cost of dealing with geotechnical and founding problems
 - Cost of step(s)
 - Cost of windows
 - Cost of house utility connections (water, electricity)

5.4. SUMMARY OF PROPOSALS

This section summarises the main proposals that I have made to deal with existing informal settlements and plan for future informal/low-income settlements.

5.4.1. INSTITUTIONAL CHANGES

5.4.1.1. Policy and political changes

The policy and political changes needed to support a more effective and efficient approach are:

- Prepare and legislate an informal settlement policy that is based on the provision of services as an option, rather than an exclusive focus on formal housing;
- Policies and legislation to enable the acquisition of unoccupied land for informal settlements/low-income settlements needs to be provided for the development of strategies to release well-located public and private land;
- Politicians must desist from spreading overblown and undeliverable promises such as 'housing for all' and support actions on a local level to address a growing basic services backlog;
- Decentralisation needs to occur through capacity building at a municipal level to enable municipal expertise and practitioners to inform and negotiate with politically led endeavours, so as to ensure that sustainability issues are not neglected. To be taken seriously, the municipality needs to produce plans and programs for future developments that deal with implementation, operation and maintenance, and monitoring and evaluation.

5.4.1.2. Financing proposed developments

The National government, which provides funds, and provincial governments, which administer subsidies, have led housing development since 1994 (Robinson, 2004). Subsidized finance is allocated to local housing agencies in accordance with the National Housing Fund, which is a form of revolving fund supported by the Treasury from the general tax revenue (Western Cape DoH, 2003). One of the key issues that require coordination across government levels is related to the processes by which Local Government receives funding for low-income settlement upgrades.

Cape Town is a category 'A' municipality, whereby local authorities receive CMIP (Consolidate Municipal Infrastructure Program) funds from Provincial authorities of the Western Cape Housing Department. The procedure for acquiring funds requires the municipality to produce a Business Plan 3 years in advance, for improvement programs in specific financial years. This is part of the IDP requirements (Western Cape

DoH, 2003) that the Municipality is responsible for and needs to action to finance an effective planning framework for dealing constructively with informal settlements.

On a local level, financial issues must take affordability by users seriously into account. A large portion of funds within the housing subsidy goes towards service provision, which expenditure is based on the norm that only high levels of conventional services are considered with formal top-structures. Many more affordable sanitation solutions (both at a municipal and community level) are not considered for formal provision of services. If site and service schemes and a firewall were considered as full service provision, alternative sanitation technologies may be based on affordability and sustainability, such as dry on-site sanitation options. Therefore, for CCT to meet its backlog in a sustainable manner the final focus of funds needs to shift away from housing towards services.

5.4.1.3. Responsibilities of professionals

The role of professionals and officials is presently inadequate to meet the challenge posed by existing and increasing informal settlement. Roles and responsibilities that require re-examination are as follows:

- Responsibilities assigned to the Housing Department to upgrade informal settlements should be shifted permanently to another dedicated department suited to meeting the needs of informal settlements. This dedicated function may remain in the Development Support Branch, but more social and capacity building expertise would then need to be appointed to strengthen the team. The alternative would be for the Housing Department to shift its focus away from housing to service provision.
- In-house professionals should be used, rather than external consultants, for managing Insitu Upgrading and to ensure that community-based procurement occurs.
- A program must be developed that clearly sets out the roles and responsibilities of professionals and community members involved in Insitu Upgrading. These roles and functions should be based on the lessons learnt both within and outside of South Africa and pilot projects.
- Assignment of specific roles to professionals involved in identifying and upgrading Greenfield low-income sites is a gap that must be filled. The Municipality must be more involved in monitoring low-income settlements within privately driven Greenfield developments.
- The community as a whole should be properly informed and educated about the different technology options for services by the municipality or those whom they manage. The actual costs associated with each of the options must be effectively communicated, such as the fact that toilet paper has to be purchased and used, and higher water bills accrue for a flush toilet. Professionals and officials need to acknowledge that less costly technologies allow money to be invested elsewhere in the home, the community and the project.

- Infrastructure provided must be affordable to individual households within the community. If the households cannot afford to maintain RDP houses and flush toilets, then alternative options must be made available.

5.4.1.4. Public Participation and Capacity Building

The City of Cape Town's approaches need to be improved through the following actions:

- Replace the Community Liaison Officer's function of information dissemination and gaining support for municipalities with Community Development Workers who deal with social exclusion and support responsive and adaptable local organisation that is appropriate to the tasks at hand.
- The community must be given access to formal training and employable skills such as health and hygiene education and community-based contractors for local level services provision. Such a program must be based on a set training program and timeframe, and be formally assessed and evaluated.

5.4.2. LAND IDENTIFICATION AND ACQUISITION

A package of plans needs to be developed that identifies and prioritises land that is most suitable for low-income settlements. While this document suggests the initiation of such a process within the specific study site, a more detail examination of the identified sites is needed. Current policies and legislation needs to shift the narrow focus away from acquisition of public and private land for Insitu Upgrading towards a legislative framework that supports strategies for the release of identified best-located public and private land for Greenfield low-income settlement sites.

Once the most suitable Greenfield sites for low-income settlements have been identified, an estimation of how long it would take before there is a need to search and identify more land may be calculated by using Dorrington's population growth projections.

5.4.3. PLANNING FRAMEWORK AND LAND REGULARIZATION

The planning framework described for both the Insitu Upgrading and Greenfield approaches to low-income settlements are adequate for planning to accommodate low-income settlements, if not exclusive of each other. The difference in approaches is that of allowing site and service sites to be the end-result in Greenfield sites, which moves away from the narrow and exclusive provision of formal top-structures and townships as the immediate objective.

** currently not within CC's jurisdiction. SARCC & Metropolitan Governance.*

In combining approaches to settlement development, land tenure and regularization can be acquired without a formal house and high levels of services on the plot, such as the associated individual flush toilets.

5.4.4. INDIVIDUAL SERVICE INFRASTRUCTURE

Unaffordable high levels of services, such as flush toilets, should not be the only technology option considered for the provision of adequate, safe, hygienic and acceptable full services. People should be allowed to choose technology options and the regulation of free, basic water supply based on affordability to the individual household. More investigation and pilot projects need to be conducted by the City of Cape Town to expand on alternative and appropriate technologies, such as dry on-site and other effective low-cost sanitation systems, that are affordable to both the city and individuals within low-income settlements.

5.4.5. PRECONDITIONS FOR THE DEVELOPMENT OF LOW-INCOME SITES

Proposed infrastructure that the Municipality should undertake to develop in the interests of accommodating existing and future informal settlements, are:

- Build new roads and widen roads to accommodate public transport to enable development to continue;
- Build the planned sewerage plant to enable flush toilets to be provided where needed;
- Change the use of the railway line to a passenger rail to take pressure off the roads and Koeberg safety restrictions;
- Build new railway stations;
- Build landfill site;
- Identify and acquire vacant land for low-income settlements.

Refer to **Map 25**

5.5. IMPLEMENTATION: PROGRAMMES OF ACTION

In order to implement the changes that need to occur as proposed above, the following questions need to be addressed:

- Who will take responsibility for what? (Municipalities, Provincial or National government, NGOs, etc),
- With what resources? (public, private, national or local money),
- Through which institutions? (involving all stakeholders, public participation processes)

- Using what legislation?
- Over what timeframe?

Some of these questions, such as legislation, have already been addressed and discussed extensively in earlier sections. I will attempt to address the questions that call for more detailed response over and above that which has already been fully addressed.

5.5.1. BUDGET AVAILABLE TO THE CITY OF CAPE TOWN

While the City of Cape Town usually has a total annual budget of R9 billion, in the 2003/4 Budget its highest ever allocation of R10.1 billion placed particular emphasis on targeting expenditure for the benefit of those people in living poverty.

This budget is divided into a Capital budget and an Operational budget. The Capital budget of R1.7 billion is much less than the Operating budget (intended to be covered by internal revenue) and constitutes investment in new buildings, pavements, streetlights, vehicles and equipment, among many other assets. The Operating budget of R8.4 billion will be spent on maintaining high levels of service that are paid for by those who can afford the tariffs in established areas. Municipal income also covers the salaries of 27 000 staff and the cost of running all the activities of the Council (CCT, 14/10/04).

Capital expenditure of the annual Budget allocation is intended to benefit the 15% of Cape Town's population living in poorer areas. A particular target is the upgrading of informal settlements. Since the area that has reached a critical stage of crisis regarding road capacities and sewage plants is the Northern Suburbs, I suggest that an important investment of the Capital budget, for this year and the following few years (at least up to 3years), should be in the Northern Suburbs. Expenditure will be discussed below.

5.5.2. PRIORITY ACTIONS, TIMEFRAMES AND RESPONSIBILITY FOR ACTIONS

The City of Cape Town is the main implementation agency for low-income upgrade projects. The Provincial and national Departments of Housing aim to provide support to this initiative via (inter alia) facilitating access to land; unlocking and mobilising funding; streamlining regulations and fast tracking applications; and, fostering an enabling and empowering implementation environment (Islanda Institute, 2004).

Firstly, the area that selected as my specific study site should be given more attention than other areas in the City of Cape Town as it has been sidelined in the past. Such neglect has led to the inexcusable problems that this site is presently experiencing. Development has had to be put on hold until the road improvements and extensions have been built to alleviate the congestion and to comply with Koeberg safety restrictions and until a new Sewerage Plant has been built.

There is also an additional problem in that informal settlements are situated illegally, on land that is unsafe or has already been designated another function. Therefore, although no further residential settlements can be developed until the public transport and road infrastructure is improved and sewage plant built, this problem should not be set aside especially since the city is supplying these sites with flush toilets, despite the interdict.

It should thus be a priority of the city to identify and acquire suitable land to accommodate existing and future low-income settlements. Some of the existing informal settlements have been incorporated into privately driven Greenfield sites (Melkbosstrand, Kensington and Parklands 4th development), however there are still existing and future informal settlements that need to be accommodated. It also remains to be seen whether these private Greenfield developments will be affordable to the low-income residents living in the targeted informal settlements, or whether only higher earners within these settlements will be included. Timeframes for public actions affecting the study area will be discussed in more detail below.

The public actions that must take priority are set out below in a sequence that is related to the timeframe for the action, while the institutions responsible for ensuring that the action is taken are indicated alongside each proposed element with an arrow (→).

Priority Public Actions: Short- term actions – within the next 3 years:

- Complete the new Sewage Plant → delay severely affects the study area and it is a Municipal responsibility to provide this public service.
- Upgrade existing roads to accommodate public transport and build road links to alleviate present congestion levels (refer to Section 4.3.3.). The CCT Transport, Roads and Stormwater Directorate (2 March 2004) made a list of the following actions that need to occur prior to any major developments: M12 related extension - Sandown Road to Potsdam Road (incl. Diep River bridge) (at an estimate of R25.2 million); Potsdam Road to Contermanskloof Road (incl. M12/N7 Interchange) (R48.7 million); Sandown Road related extensions - extend Brazelton Road to Parklands Main Road (R13.1 million); and Parklands Main Road to the M12 (R 6.5million). Parklands Main Road must be extended Eastwards to Sandown Road (about R6million) and Wood Drive needs to be extended to future East-West Activity Route (R9 million). Link portions of road to Koeberg Road falling within area north of PM Road (about R12million) and create a dual carriageway on Blaauwberg Road (R27 to Marine Drive at

the cost of R13million). Finally the R27/West Coast Road must be widened between Sandown Road and Porterfield Road (estimated cost of R4 million).

→ Relevant Transport Officials should be consulted in order to put in new roads to compliment new housing infill and create continuity through the area (roads owned by Provincial government)

- Improvement of public transport on roads is another priority, discussed in detail in Section 4.3.3., that includes: Public transport high occupancy vehicle (HOV) lanes along Otto du Plessis Drive Corridor, with associated park and ride areas; Provision of public transport lanes along Koeberg Road; the Provision of bus embayment along Parklands Main Road activity spine and future accommodation of public transport lane along this route (MLH Architects and Planners et al, 2000).
- Make and submit a land identification proposal to accommodate low income settlements
→ Municipality and Department of Land Affairs.
- Fence and put signs up on open spaces that are designated for public use or are unsafe to settle on
→ Municipality.
- Obtain the rest of Site 4 for low-income settlement orientated developments (refer to Map 25)
→ Municipality and Department of Land Affairs.
- Upgrade Doornbach informal settlement as soon as owner sells land to the city but without flush toilets (this has started happening anyway) – use either UDS or VIP toilet. Obtain and Insitu Upgrade Wolwerivier in the same manner→ Municipality.
- Start serious negotiations to obtain Ysterplaat military site for low-income settlement orientated developments → Municipality.
- Ensure that no more informal settlements occur in this site until the above factors have been provided
→ Municipality.

Priority Public Actions: Short to medium term – within 5 years

- The new landfill site should be built as this would serve the whole municipal area, and therefore has metropolitan significance. → Municipality is responsible for ensuring the landfill site gets built.
- Start building railway stations and change railway line from goods to a passenger rail. The plan would need to persuade the state that it is worth making this a passenger rail. → At the moment these actions would be the responsibility of the National Government (Transnet Rail).
- If Ysterplaat has not been acquired through negotiations more stringent actions should be taken (court application and order sought). If it has ensure the site is prepared for low income settlements
→ If the Municipality has not managed to acquire this land the matter should be taken to the High Court for a verdict (Provincial and/or National government decision-making).
- Apply legislations and policies to Greenfield sites identified as being the most suitable at a metropolitan level to accommodate low-income settlements. → National Government is responsible for creating new legislations and policies.

Priority Public Actions: Medium term actions – within 10 years

- Finish building railway stations→ Municipality
- Build the new roads shown on map 17 with priority given to the proposed activity routes
→ Municipality and Provincial Roads authority.
- Acquire and prepare vacant land 3 and 1 (refer to Map 25) for low income settlement orientated development→ Municipality

5.5.3. INCOME GENERATION AND CAPACITY BUILDING

The upgrading and installation of public structures should meaningfully include all relevant stakeholders and maximize income generation opportunities. Capacity building among the unemployed and low-income individuals further justifies investments on public communities through educational spending and skills development programmes. The development of these types of programmes would help entice the private sector to invest in these areas, thereby enhancing low-income settlements.

As cross subsidisation of social welfare projects by large private sector projects is gaining momentum in recent years (Chitten Nicks De Villiers, 2001), this avenue may also be explored while public interventions and investments demonstrate enhance the value of areas.

5.5.4. OPERATION AND MAINTENANCE

In terms of operation and maintenance, low-income and unemployed individuals must be incorporated into the city's operation and maintenance program as much as possible. This would include the employment of community-based road sweepers; refuse collectors, plumbers, cleaners, management and servicing of facilities, maintenance of open spaces and so on. Many opportunities exist at a local level.

5.5.5. MONITORING AND EVALUATION

To realize the goals and objectives in this framework, there needs to be continuous monitoring and evaluation of the processes and activities associated with the strategic directions. Policies, strategies and implementation must regularly be reviewed by the appropriate public authority, and the results fed back into planning and decision-making processes. This will reveal rate of progress towards intended outcomes therefore ensuring accountability (Dept of Housing, 1997).

CONCLUSION

The aim of this document is to achieve sustainable growth, efficient, good and fair governance, and good quality environments associated with the growth of low income settlements in the Northern administration area. To achieve this, two strategies to overcome the problems associated with informal settlements were proposed. The first was the insitu upgrade strategy in which the existing inadequacies and proposed improvements were discussed. The second strategy attempts plan ahead of the problem by identifying, acquiring and building basic infrastructure on Greenfield sites meant for low-income settlements.

The document discusses the background of current approaches, inherent planning theories and precedents that have evolved over time in order to explore alternatives and seek improvements. Local authorities facing the challenge of accommodating the rapid urbanization of poverty are confronted by a steep learning curve. Given the reality that rapid urbanization of people who are unable to invest in formal housing or pay for associated services, is likely to continue, planning ahead for the projected influx is necessary. Integrating the fact of informal settlement into the urban fabric may effectively include pre-identification of appropriate and suitable Greenfield sites that are prepared in advance of the projected increase in the urbanization of poverty.

My suggestion that transition areas, in which people are allowed to put up shacks as long as they pay a subsidised amount for a fire wall and basic services, over and above what is provided as a free basic service, is proposed to facilitate a more gradual and realistic development. This has been referred to as the "incremental approach" to housing (Wilkinson & Andrew, 1979). However, it may be argued that the assumption that graduation to formal top-structures is not necessarily the next phase in such a continuum, as there appear to be options that are more feasible for the majority of the informal dwellers.

At the moment services, other than the basic and emergency services that are considered temporary, are provided only to communities who have agreed to take on the housing subsidy. Therefore it can be deduced that the thrust of implementation is towards an end result of a formal top-structure. While housing subsidy options should remain available to those individuals who are able and choose to take it on, land tenure will still be crucial issue.

Academics and authorities in all tiers of government must come to terms with the fact that we are not a first world country and do not have the same resources to offer the poor, not to mention far greater numbers of poor people that need to be accommodated. In this regard I don't believe that top-structure should take precedence over basic services.

Therefore, my main argument is that: the focus of public funds should shift from being on the provision of top-structure to the provision of basic services; the present insitu upgrade strategy needs to be change in the ways that were mentioned earlier; and a lot more focus needs to be dedicated to identification, acquisition and preparation of low-income Greenfield sites.

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CWSS unit

Practitioners Workshops (16/08/2004) run by the CWSS unit at Peninsula Technikon

Chaired by Alvin Lagardien and Deborah Cousins.

City officials involved in implementation that attended and presented at workshop:

Denzil Fourie from the CCT; Jacque Rust, Ednick Msweli from Ethekwini (Durban) Municipality; Sharon

Dauids from Johannesburg Water utility.

City Officials in Durban (Ethikwini)

Jacque Rust and Ednick Msweli (16/08/2004) "Practitioners Workshops" at Peninsula Technikon