DRAFT FOR COMMENT

Table Bay
District Plan

Spatial Development Plan & Environmental Management Framework
Technical Report

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Public participation process

2007/2008
Advertising and registration of interested and affected parties

2008
1st PUBLIC CONSULTATION
Awareness, vision and principle issues

(We are here)
2009
2nd PUBLIC CONSULTATION
Content of SDF

2010
3rd PUBLIC CONSULTATION
Final draft of SDF

APPROVAL
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Users guide

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1 INTRODUCTION

The District Spatial Development Plan (SDP) and Environmental Management Framework (EMF) have purposely been integrated to improve alignment in planning and environmental decision making processes. Both components of the document have particular purposes, some of which overlap.

1.1 Purpose

The District SDP is a medium term plan (developed on a +/- 10 year planning frame) that will guide spatial development processes within the district. It will pursue the several strategic actions including:

- Aligning with and facilitating the implementation of the National Spatial Development Perspective (NSDP), Provincial Growth and Development Strategy (PGDS) and Spatial Development Framework (PSDF), Cape Town’s integrated Development Plan (IDP) and City SDF within the district;
- Performing part of a package of decision support tools to assist in land use and environmental decision making processes;
- Delineating fixes and sensitivities which will provide an informant to such statutory decision making processes;
- Clearly giving direction to the form and direction of areas for new urban development in the district in a manner that is in line with the principles and policies of higher level planning frameworks;
- Providing a basis for land use change within the existing footprint at well as strategic public and private investment initiatives which will assist in achieving the principles and policies of higher level planning frameworks;
- Informing the development of priorities for more detailed local area planning exercises and frameworks that should provide detailed guidance to land use management and public and private investment.

In this context, the City SDF and 8 District SDPs provide a basis for rationalising the planning system in the city and in particular enabling the basis for the withdrawal and replacement of out of date structure and policy plans at the city and district scales whilst leaving in tact useful spatial plans.
Within a hierarchical system of plans, the district plans form an intermediate or sub-metropolitan frame of reference for decision making. These plans are aligned, but subservient to the provisions of the City SDF and will inform and be supplemented by a detailed local level of planning for particular / selected areas within the City.

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<td>Will replace or complement pre-existing policies</td>
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To compliment the move toward alignment in planning across spatial scales, the EMF has been developed to promote an integrated consideration of environmental imperatives within the planning process. The intent is to ensure that the proposals of the SDP and land use and environmental decision making are informed by an understanding of environmental sensitivity and significance of various attributes and priorities for their management. (see also section 5.1.1).

1.2 Legal status and validity

Whilst the City SDF will be approved both in terms of the Municipal Systems Act (MSA) and Land Use Planning Ordinance (LUPO) section 4(6), the District Spatial Development Plans will be approved in terms of section 4(10) of LUPO. The City SDF will lead to the withdrawal of the Cape Metropolitan Urban Structure Plan (Vol.1-3) through its promulgation in terms of section 4(6) of LUPO. The district plans will operate as section 4(10) plans in terms of LUPO.
The withdrawal of selected sub metropolitan and local urban structure plans will occur as a result of their review and / or lapsing of their period of validity and as part of the process of promulgating the District SDPs.

The district plan is unique in that it incorporates two frameworks governed by different sets of legislation. Whilst the District SDP will be approved in terms of the LUPO, the EMF will be approved under section 24 of the National Environmental Management Act. (see also section 5.1.2). The EMF is structured as an input to the SDP and lays basis for greater harmony in the land use and environmental decision making process.

1.3 Key components of the District SDP and EMF

In order to fulfil its role, the District SDP and incorporated EMF consist of a number of targeted plans and policy guidance related to:

- **Environmental Impact Management (EIM) Zones**: This is a shared EMF/SDP decision support tool linked to suitable uses in areas with similar environmental attributes and sensitivities (EIM Zones). It includes EIM zone plans linked to table of potentially suitable/unsuitable activities and guidelines for environmental authorisation and land use decision making.

- **New development areas (NDA)**: This plan and associated policies/guidelines provide direction in terms of achieving spatial planning imperatives in relation to new development areas (green field locations). This includes considerations around the location and form of new development.

- **Urban restructuring and upgrading (UR&U)**: This plan and associated policies/guidelines provides direction with regard to changes in use associated with existing urban areas. These includes where significant changes in land use / intensity should be supported as well as key public interventions associated with public environments and infrastructure.

- **Consolidated SDP**: This is the consolidated plan / SDP, which indicates broad spatial structure across the district and informs the overall distribution of activities and land uses for the area.

1.4 Process

A comprehensive review of existing spatial planning frameworks was undertaken in 2005/6. The district planning process was initiated as part of this review. A rigorous public and stakeholder engagement process is critical to the compilation of robust District SDPs and EMFs. The public participation process consists of three phases:

**Phase 1**

In February 2008 the City initiated the first phase of public engagement process in the 23 sub-council areas of the City. The purpose of the first round of public consultations was to:

- Launch the process publicly
- Create a sense of public/stakeholder ownership and involvement in the process
- Elicit the public/stakeholders’ views on the development issues facing metropolitan Cape Town and the development principles and strategic goals that should be guiding the preparation of the SDF and District SDPs/EMFs.

**Phase 2**

This report is the subject of the second phase of public consultation. The purpose of this second phase is to table and discuss the proposals contained in this integrated District SDP/EMF, particularly those pertaining to:

- Environmental impact management (EIM) zones;
- The City SDF aligned conceptual framework;
- Urban restructuring and major upgrading areas;
- New development areas.

In parallel, this process will serve as a platform to table and discuss the city-wide spatial concept and policy statements contained in the SDF Technical Report. Particular attention will focus on the proposed urban edge amendments, the coastal edge and coastal protection zone, densification strategies and the revised schedule of guidelines and standards for the provision of community facilities, public institutions and public open space.

**Phase 3**

The third public engagement will take place when the second drafts of the District SDPs/EMFs (and City SDF) have been prepared. This engagement will be in the form of a notice in the press inviting comment on the second draft of the plans. Following from this, the city-wide SDF and 8 District SDPs/EMFs will be finalised and submitted for approval.

**1.5 Study Area**

The District A boundary extends from Paarden Eiland at the mouth of the Black River along the coastline to just before Llandudno, thereby including the CBD and the Atlantic Seaboard. At Llandudno the boundary cuts across the Table Mountain National Park to the M3 at Groote Schuur Estate. The eastern boundary runs along Settler's Way (N2) to Vanguard Drive and up to the N1 freeway at Wingfield. The district also includes Robben Island. District A is bordered by District B (Blaauwberg) to the north, District D (Tygerberg) to the east, District G (Klipfontein and False Bay) to the south-east and District H (Southern) to the south.
2 DIRECTIVES

2.1 National and Regional Planning Informants

The District plan is developed within the legislative framework of the Municipal Systems Act and Land Use Planning Ordinance and seeks, through its alignment with the City SDF to give effect to:

- The principles of the Development Facilitation Act;
- The policy directives of the National Spatial Development Perspective and Provincial Growth and Development Strategy and Provincial Spatial Development Framework;
- Various Regional Planning Initiatives (including the Cape Town Functional Region Report).

2.2 Regional Planning Informants

Cape Town’s Spatial Development Framework needs to align with national and provincial initiatives to ensure optimal impact from the combined efforts of government. In this regard the following is relevant:

2.2.1 Western Cape Provincial Spatial Development Framework

The Western Cape Provincial Spatial Development Framework (WCPSDF) was approved in 2005 as a policy aimed at addressing the legacy of inefficient and inequitable spatial development in the province.

It provides broad guidelines to enable a more sustainable development path. The WCPSDF aims to address urbanisation pressures on natural resources, and economic and social divisions within the cities and towns of the province, and provides a policy context for urban development and environmental resource protection.

The WCPSDF is in line with the National Spatial Development Framework and lower order spatial plans (i.e. the City’s District Spatial Development Plans and Spatial Development Framework) should in turn be consistent with the principles of the WCPSDF.

2.2.2 Provincial Growth and Development Strategy (iKapa Elihlumayo)

The Provincial Growth and Development Strategy (PGDS) includes a vision, strategy, informants, programmes and projects to ensure inclusive growth and sustainable development in the province and is based on the four key pillars of growth, equity, empowerment and environmental sustainability.

Critical issues addressed in the strategy include poverty and unemployment, quality of life, the existence of the second economy, housing delivery and supply, and the skills mismatch.

Eight strategic goals or outcomes guide the activities and interventions towards the envisioned shared growth:

1. Broadening economic participation through targeted skills development and higher rates of human, infrastructural and financial investment.
2. Investing in efficient ‘connectivity infrastructures’ to stimulate and sustain economic growth (transport, energy and ICT).
4. Creating liveable communities that foster the well-being of all residents.
5. Fostering resilient and creative communities that are interconnected through webs of social solidarity.
6. Ensuring greater spatial integration embedded in a drive to protect and develop public places and the natural resource base.
7. Nurturing a culture of tolerance and mutual respect.
8. Creating and protecting effective governance institutions.

2.3 Metropolitan Planning Informants

2.3.1 Draft Integrated Development Plan 2007/08 – 2011/12

The Integrated Development Plan (IDP) is a plan to help set the City’s budget priorities for the next five years. During consultation processes between local government and residents, three top priorities emerged - jobs, housing, and safety and security.

To encourage the creation of more job opportunities, the City must provide effective service delivery such as clean water, refuse removal and electricity together with well-maintained roads and infrastructure, and corruption-free administration to create a city where investors and entrepreneurs will want to do business. Regarding housing, the City’s responsibility is to provide the necessary service infrastructure such as access roads, water, electricity, sewage and waste disposal. In the case of safety and security, the City’s constitutional role, through the metro police, is to enforce by-laws and traffic regulations.

From the above, it is clear that the main goal should be infrastructure-led economic growth to promote job creation. The IDP outlines key areas of intervention and where resources must be focused in order to achieve this goal.

2.3.2 Planning Cape Town – Draft Spatial Development Framework

The overall intention of the City Spatial Development Framework (SDF) is to guide and manage change and urban growth in Cape Town towards a more sustainable, integrated and equitable city for its citizens, investors and visitors.

The following principles describe the values which underpin international and national best practice for the successful planning and management of cities and should be used to guide the future development of Cape Town:

- The public good should prevail over the private good.
- The city should work for all, especially children.
- Work harmoniously with nature, reduce the City’s ecological foot print and change unsustainable patterns of resources use.
- Adopt a precautionary approach to resource utilisation.
- Improve urban efficiency and align planned growth with infrastructure provision.
- Maximise access to the City’s opportunities, resources and amenities.
- Celebrate diversity (living environments, cultures and lifestyle)
- Redress spatial imbalances.
- Create high quality living environments.

The SDF is premised on three over-arching spatial starting points that should give overall direction to the future spatial form and development of Cape Town. The first relates to the positioning of the city within its broader region, the second relates to the ‘green anchors’ that frame or give direction to where the city can grow, and the third relates to the primary urban elements that structure or shape the built area of the city in terms of where and how development and growth in the city should be focussed.
The SDF seek to bring a number of actions together in a long-term, logical development path based on 5 key strategies and supporting policies that underpin the spatial form and structure of a future Cape Town. These are:

1. The protection and enhancement of valuable natural resources and green spaces
   For social, economic and environmental reasons it is critical that Cape Town’s valuable natural resources and green spaces are defined, protected, enhanced and that access to them is improved. The sustainability of these natural resources also depends on the protection and enhancement of natural ecosystems.

2. The establishment of an integrated grid based movement system
   Cape Town must have a movement system that works for all and provides access to the city’s resources and amenities. The movement system connects people and it connects people with opportunities. Its infrastructural components (pedestrian routes, bicycle lanes, roads and rail) and their patterns of interconnection have a profound impact on spatial patterns and accessibility and hence on economic and social opportunity.

3. Consolidate and intensify development on the accessibility grid
   The City should ensure that Cape Town’s growth and land management strategies and policies enhance its position in the global and regional economy. Economic, social and higher intensity development should be steered to the locations which offer the greatest opportunity to the entrepreneur and have the highest positive impact on peoples’ quality of life, especially that of the poor. These locations are on the accessibility grid.

4. Direct urban growth and promote compact, integrated development
   A compact form of development with settlement growth directed towards areas suitable for development and away from important resource areas and hazards will be actively pursued. The future spatial development of Cape Town also needs to be informed by the infrastructure capacity and maintenance challenges facing it.

5. The creation of more great people places
   What makes Cape Town special and unique and, more importantly, what will continue to give it an edge as an attractive place to live in and visit, in the decades ahead, is its high quality destination places. Some of the destination places are of cultural and heritage value e.g. Robben Island and Groot Constantia, others capitalise on the city’s natural assets e.g. Kirstenbosch and Cape Point whilst others are attractive public places where people can be and see people e.g. the V & A Waterfront and Sea Point Promenade. These destinations need to be consolidated into a citywide network of destination places and access to them needs to be improved.

2.3.3 Scenic Drives Network

Scenic drives provide a means of preserving and experiencing prime portions of Cape Town’s natural and cultural landscapes. A network of Scenic Drives across the metropolitan area has been identified. A number of these routes fall within District A and is subject to specific guidelines and regulations.

2.3.4 Cape Metropolitan Area Guide Plan (1988)
The Guide Plan was developed to co-ordinate the growth and development of the Cape metropolitan area as a functional unit. It focussed on four geographical areas – the Peninsula, Stellenbosch, the Hottentots- Holland Basin and Paarl/ Wellington.

Volume 1: Peninsula contains a co-ordinated overall spatial development policy for the future of the peninsula area and is therefore particularly relevant to District A. The development of this district largely reflects proposals as set out in the Guide Plan. The District A Spatial development Plan highlights a number of areas where a different development approach is more suitable at present than that proposed in the Guide Plan.

2.3.5 Peninsula Urban Edge Study, Urban Edge Report (2001)

This report forms part of a series of urban edge studies, which set out to demarcate a metropolitan-wide urban edge for Cape Town with the aim of containing urban sprawl and protecting valuable surrounding landscapes and resources.

The study area includes the entire peninsula mountain chain and the abutting land from Signal Hill in the north extending to Cape Point in the south. With respect to District A the urban edge follows the cadastral boundary of the outer limit of urban development, excluding major public open spaces e.g. Van Riebeeck Park and conforms generally to the Table Mountain National Park and Cape Peninsula Protected Natural Area boundaries.

Further pressure on this urban edge should be resisted with the possible exception of allowing limited interventions in specific places to improve access to the mountain.

2.4 Local Planning Informants

Apart from the 1988 Cape Metropolitan Guide Plan (now the Cape Metropolitan Area: Peninsula Urban Structure Plan) and the Metropolitan Spatial Development Framework (approved as an interim policy in 2001), no structure plans pertaining to District A have been approved in terms of section 4(6) of the Land Use Planning Ordinance of 1985. The above-mentioned plans, together with the Municipal Spatial Development Framework (1999) and other local spatial plans have been reviewed for the purposes of this district plan.

There are a large number of local spatial planning policies and frameworks dealing with District A. None of these have section 4(6) approval, while a number has been approved by Council (although none of them as section 4(10) approval) with one document approved through environmental legislation and processes (the Cape Peninsula National Park Conservation Development Framework). Many of the plans are outdated or no longer relevant. The district plan will supersede these, although its contents have drawn on and are aligned with previous planning intentions that remain of consequence. Scale appropriate policies have been considered as part of the district planning exercise, to ensure that relevant proposals contained in these policies are included in the district plans.

Local area plans that remain relevant include the following:

- Cape Peninsula National Park Conservation Development Framework
- Cape Town Central Waterfront: Draft Contextual Framework
- Culemborg-Black River Contextual Framework Spatial Development Framework
- District Six Contextual Framework
- District Six Development Framework
- Langa Local Area Spatial Development Framework
- Lower Gardens Policy Plan
- Maitland Local Area Plan
- Two Rivers Urban Park Contextual Framework and Phase 1 Management Plan
- Upper Table Valley Policy Plan
- Victoria / Houghton Road & Camps Bay Drive: Camps Bay Guidelines
- Woodstock - Salt River Revitalisation Framework
3 STATE OF THE DISTRICT

3.1 Summary of Environmental Attributes

3.1.1 Natural environment and resource base

District A covers approximately 10 750ha (107.5 km²) and incorporates the Central Business District (CBD) and the Port of Cape Town, as well as the Atlantic Seaboard to just north of Llandudno and the suburbs of Observatory, Pinelands, Maitland and Langa, which lie to the east of the City Bowl. It includes the Epping industrial area and a significant portion (approximately 27%) of the district falls within the TMNP, which form part of the Cape Floral Region Protected Areas World Heritage Site. The TMNP is managed by the South African National Parks (SANParks) in terms of the National Environment Management: Protected Areas Act No. 57 of 2003. SANParks manages all properties included in the TMNP (including those under private ownership), but there is cooperative management between SANParks and CoCT on aspects that transcend the City/ Park boundaries.

The following section provides a brief summary of the environmental attributes of District A, with a more detailed description included in Annexure B.

a) Geology, Topography and Soils

Geology

The geology of District A is spectacularly dominated and displayed in the form of Table Mountain. Table Mountain is formed by horizontal layers of Table Mountain Sandstone, underlain by bands of Cape Granite and Malmesbury shale.

The late-Precambrian age Malmesbury Group is the oldest rock formation in the area, underlying much of District A. The Peninsula Granite formation is a huge batholith (a rock mass formed by the upwelling of magma) intrusion into the Malmesbury Group that has been exposed by prolonged erosion. The contact zone where the Malmesbury Group was intruded by molten granite can be seen at Sea Point; the site was declared a national monument in 1953 and bears a plaque explaining its significance.

Younger sedimentary rocks of the Table Mountain Group were deposited on granite exposed on the surface by prolonged erosion. The basal Graafwater Formation, the Peninsula Formation and the Pakhuis Formation occur within this group. The most recent geological formations include the Springfontyn and other Quaternary (~2 million year old) formations (Reid et al., 2001).

Topography

The topography of District A is dominated by Table Mountain, Cape Town’s most prominent and famous feature. The ‘table’ itself, an approximately 3 km-long, level plateau, runs in an east-west direction. The plateau is flanked by Devil’s Peak to the east and by Signal Hill and Lion’s Head to the west, all of which form the dramatic backdrop to the city and the Table Bay harbour. These mountain features drop off rapidly to form the natural amphitheatre of the City Bowl. The Twelve Apostles, an impressive range of peaks that run southwards along the Atlantic coast from of the back of Table Mountain, are separated by deep ravines created by natural erosion where faults occur in the underlying rock.
Soils

Three main soil types occur in District A:

1. **Red and yellow apedal soils** occur over the south-eastern section of the district, i.e. predominantly over the plateau and eastern slopes of Table Mountain, where fynbos has adapted to the harsh growing conditions.

2. **Shallow, non-hydromorphic soils on weathering rock or clayey substances** occur over the western and northern mountain slopes, usually in moister areas or where parent material is acidic and little lime exists.

3. **Soils with a diagnostic ferrihumic horizon** occur in the northern section of the district (underlying the City itself) and the eastern extreme of the district (Observatory, Pinelands, Maitland). The low-lying nature of the environment in which they typically occur means that these soils are often subject to waterlogging during the winter months (Macvicar, 1999).

Mineral Resources

The eastern portion of District A contains an economically significant sand resource, which underlies Pinelands, Kensington and parts of Maitland, Thornton, Epping Industrial and Langa (DME, 2000). Urban development has taken place on virtually all of this deposit, and it is thus not available to mine.

b) Hydrology

Surface Water

The district contains a number of rivers, including the Salt, Liesbeek, Black and Elsieskraal Rivers, as well as a number of small streams and rivers flowing from the Table Mountain Range. No significant wetlands are located within District A, but a number of dams are found on top of Table Mountain.

The eastern portion of District A is dominated by the Salt River system with its tributaries, namely the Liesbeek, Black and Elsieskraal Rivers. All four rivers are prone to flooding after heavy rains and in poor condition. They flow through densely urbanised, industrial and agricultural areas and large stretches of the river courses have been canalised, leading to habitat loss and severely reducing their ecosystem functioning. The Black River in particular receives wastewater from the Athlone and Borchards Quarry WWTW, and has been invaded by invasive alien aquatic weeds (water hyacinth).

The western portion of the district contains numerous streams that drain Table Mountain, and flow into the Atlantic Ocean, including the Camps Bay, Diep, Kasteelpoort and Lekkerwater Rivers. These are all small, short rivers, which have been less severely encroached on by development and fall partly within the protected area of the TMNP. Several streams that drain Table Mountain northwards towards Table Bay flow under the CBD mostly in underground storm water canals.

There are no significant wetland systems within District A, but there are riparian wetlands associated with the Black and Liesbeek Rivers within the area known as the Two Rivers Urban Park (the Raapenberg, Pallotti and Valkenberg wetlands). Additional smaller wetland areas, consisting of natural or semi-natural wetlands, stormwater depressions and stormwater detention ponds, are located throughout the eastern part of the District, notably in the Windermere/Acacia Park and Wingfield areas.
Five moderately-sized, in-stream dams are located within District A on top of Table Mountain, namely the Woodhead, Hely-Hutchinson, Victoria and Alexandra Reservoirs and the De Villiers Dam. The five dams yield approximately 4 million m³/annum and currently provide approximately 1.2% of the total water supply to the greater Cape Town area. The Molteno reservoir is located in the De Waal Park on the foot of Table Mountain and supplies water to Cape Town.

**Groundwater**

Various small, mostly lower-yielding aquifers are situated within District A. These include a fractured aquifer with moderate yields in most of the western part of the District (west of the Salt River system), a low- to moderate-yielding, coastal intergranular aquifer to the east of the Salt River and a low-yielding intergranular and fracture aquifer in the western coastal part of the District, which is underlain by the Cape Granite Suite.

Groundwater quality in the District is generally moderate to very good. Due to the proximity of the aquifers to the sea and frequent extension to below sea level, coastal aquifers are vulnerable to saline water intrusion, especially if there is excessive abstraction or mismanagement of groundwater. Careful control of abstraction rates is thus important to preserve the quality of the groundwater (DWAF, 2000).

c) **Biodiversity**

**Vegetation**

The CoCT falls within the extreme south-west of the Cape Floral Region (CFR), one of the smallest but richest plant kingdoms of the world. The biodiversity of the CFR is of international significance. The fynbos biome comprises some of the remaining tracts of some of South Africa’s rarest vegetation types, namely Sand Fynbos and Renosterveld. Within District A, these vegetation types include Cape Flats Sand Fynbos and Peninsula Shale Renosterveld (both Critically Endangered). These vegetation types are exceptionally high in species diversity and have a high incidence of vulnerable and endangered Red Data plant species. A brief description of the vegetation types in District A is provided below:

- **Cape Flats Dune Strandveld** is endemic to Cape Town but supports few endemic species compared to fynbos. This vegetation type is considered Endangered and about 56% of it has been transformed. In District A, it occurs in a small, isolated patch at the confluence of the Liesbeek and Black Rivers.

- **Cape Flats Sand Fynbos** is exceptionally high in species diversity and has a high number of Vulnerable and Endangered Red Data plant species. It is listed as Critically Endangered and most (85%) of this vegetation within the City has been transformed. Many of the remaining patches are small pockets surrounded by urban areas, e.g. at the Wingfield military base and along the Black River in District A.

- **North and South Peninsula Granite Fynbos** are endemic to the CoCT. These vegetation types are conserved in the TMNP and the Kirstenbosch National Botanical Garden, but much of the conserved fynbos has transformed to Afrotemperate Forest due to fire protection policies. In District A, North Peninsula Granite Fynbos occur on the lower, north-western slopes of Table Mountain and around Lions Head. South Peninsula Granite Fynbos occurs in the Oranjekloof area above Hout Bay.

- **Peninsula Sandstone Fynbos** is endemic to the CoCT and is extremely rich in species that are endemic (146 known species) and/or Red Data-listed (65 known species).
Although the vegetation is considered Endangered, about 90% of it is conserved in the TMNP.

- **Cape Winelands Shale Fynbos** (incorporating **Peninsula Shale Fynbos**) occurs in District A on the steep north-eastern slopes of Table Mountain (Devil’s Peak), above De Waal Drive. The vegetation is well-conserved but considered Vulnerable.

- **Peninsula Shale Renosterveld** is also endemic to the CoCT and occurs on Signal Hill and the lower slopes of Table Mountain and Devil’s Peak. Approximately 10% of the vegetation type is conserved in the TMNP, but 89% of it has been totally transformed by urban sprawl, cultivation and road infrastructure. The conservation target of 26% is therefore unattainable and the vegetation is considered Critically Endangered.

- **Southern Afrotropical Forest** occurs in small patches in the TMNP. Only about 0.4% of this vegetation type occurs within the boundaries of the CoCT with most occurring in the southern Cape. Virtually all of this vegetation type occurring in Cape Town is conserved.

For two of these vegetation types, namely Cape Flats Sand Fynbos and Peninsula Shale Renosterveld, it is too late to achieve the necessary conservation targets for adequate conservation of this vegetation within the City. It is therefore crucial to conserve and/or manage all remaining areas of these vegetation types to ensure that this biodiversity is not lost (LAB, 2008).

**Conservation areas**

Conservation areas in District A include the following:

- The **Raapenberg Bird Sanctuary** is a Local Authority Nature Reserve of approximately 0.15km² located along the Liesbeek River north of the N2. Raapenberg is known as an important breeding site for many species of duck. The reserve forms part of the area known as the Two Rivers Urban Park, an area where the CoCT recognises the need to protect and rehabilitate ecological systems and where mutually beneficial relationships between people and the natural environment are encouraged.

- About 16% of the **Table Mountain National Park** (TMNP) falls within District A. The TMNP is managed by SANParks and is considered to be the heart of the Cape Floral Kingdom. The highest concentration of plant biodiversity within the Cape Floral Kingdom is found within the TMNP.

**Fauna**

**Fish** – Two indigenous freshwater fish species occur in the CoCT, and are expected to be found in the rivers in District A. These are Cape Galaxias (Galaxias zebratus) and Cape Kurper (Sandelia capensis). However, Cape Galaxias has been shown to comprise of at least 13 different taxa and preliminary results have placed the Galaxias from the Liesbeek area in District A in the “mollus” lineage. Similarly with the Cape Kurper, what was previously thought to be one species is now known to represents a species complex of at least five different taxa and is not presently clear which of these occur within District A. Although little information is available regarding these taxa, they are all considered to be of high conservation significance.

**Mammals** – Of the 83 species of indigenous mammals found or presumed to occur within the CoCT, 18 species (excluding marine mammals) are included within the latest Red Data Book of the Mammals of South Africa (Friedmann & Daly, 2004). Eleven of these are found
or could be expected to occur within District A, including several insectivores and six species of bat. Within District A, the Bat Cave on the Back Table in the TMNP is the only known roosting site of the Egyptian Fruit Bat. With regard to the larger terrestrial mammals that still occur within the District, all were assigned the conservation status of Least Concern in the 2004 South African Red Data Book. This indicates that the species are currently not threatened nationally, but on a City or District scale the species may be very close to becoming locally extinct.

Avifauna – There are numerous threatened bird species in District A. Some of these are pelagic seabirds that breed in the southern ocean, which are not associated with the mainland. However, there are also a number of threatened bird species that roost or feed along the coastline and/or on Robben Island (including the Endangered Bank Cormorant), some of which are very sensitive to disturbance (e.g. African Black Oystercatchers). There are also a some bird species that are dependent on wetlands (e.g. the Near Threatened Old World Painted Snipe) and others such as the Near Threatened Secretary bird and Vulnerable Blue crane that are found in agricultural areas in the northern parts of the district (Dorse, 2008).

Herpetofauna – Four threatened amphibian species are known to occur in District A; the Critically Endangered Table Mountain Ghost Frog (Heleophryne rosei), the Endangered Western Leopard Toad (Amietophrynus pantherinus), the Vulnerable Cape Rain Frog (Breviceps gibbosus) and the Near Threatened Cape Peninsula Moss Frog (Arthroleptella lightfooti). The Cape Peninsula Moss Frog and the Table Mountain Ghost Frog are also endemic to the Cape Peninsula and the CoCT’s only endemic vertebrates. The latter is found mostly in District H, but has been recorded in the cave systems of the Back Table and historically in Platteklip Gorge within District A. The Western Leopard Toad occurs in the low-lying wetland areas (e.g. the Raapenberg Bird Sanctuary) of District A. In addition, three Red Data-listed reptile species could potentially occur in District A, namely the Near Threatened Yellow-bellied House Snake (Lamprophis fuscus, a secretive species which can be expected to occur in wetland areas), the Vulnerable Cape Sand Snake (Psammophis leighton!, which inhabits Strandveld and Sand Fynbos vegetation and the Near Threatened Gronovi’s Dwarf Burrowing Skink (Scolites gronovii), which is found on Robben Island.

Invertebrates – Little is known about the invertebrate fauna in District A. One butterfly species endemic to the Table Mountain Range now appears to have become extinct. The Peninsula Scarce Mountain Copper (Trimenia malagrita malagrita) was recently known to occur in two areas. The colony in the vicinity of Apostle Buttress above Llandudno was destroyed by a Eucalyptus plantation, while the last colony on Lion’s Head appears to have been destroyed by frequent fires (Jonathan Ball, pers. comm.).

For more detailed information regarding fauna in District A please refer to Annexure B.

d) Dune and Coastal Systems

District A is situated on the Atlantic Coast and its coastline is included in the South Western Cape Marine Bioregion which extends from Cape Columbine to Cape Point. This bioregion forms part of the Benguela Current Large Marine Ecosystem (BCLME). The area has extremely high primary productivity, which supports a high biomass of fish and other marine

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1 A conservation assessment of South African reptiles is currently underway, so the status of some of the species found in the CoCT may change.
organisms. The region is globally recognised as an important commercial and subsistence fishing area. Despite the high biomass, the region is characterised by low marine species richness and very low rates of endemism, mainly as a result of the cool Antarctic waters (Griffiths and Robinson, 2007).

The southern part of District A (south of Mouille Point) falls within the TMNP’s 1 000km² Marine Protected Area (MPA) around the Cape Peninsula. A portion of this coastline (south of the Twelve Apostles) falls within the Karbonkelberg Restricted or “no-take” Zone within the MPA, where no fishing or other extractive activities are allowed. This is an important breeding and nursery area for marine life and is intended to facilitate and increase in marine stock and protection of threatened species.

The western coastline of District A is dominated by rocky shores, backed by steep mountain slopes that drop off into the sea. The rocky shoreline is interspersed with occasional sandy beaches, notably at Clifton and Camps Bay. The beaches along the western coastline of District A are very popular among beachgoers, despite the cold Atlantic Ocean. Two of these beaches – Camps Bay Beach and Clifton Fourth Beach – currently have Blue Flag status. Table Bay, at the northern end of the coastline of District A, is a log-spiral or “half-heart” asymmetric bay anchored by the rocky headland of Mouille Point in the south and Blouberg Rocks in the north. The coastline of District A in the south of Table Bay comprises the Port of Cape Town (and V&A Waterfront) and consists of artificial shore protection and breakwaters.

**Dunes**

The coastline of District A is mostly rocky and/or developed and there are very few dunes and no dune systems. The dunes found on the coastline of District A are embryo dunes consisting of partially vegetated or bare hummocks. Embryo dunes are a “pioneering” dune system, usually found along the coastline and just above the high water mark. They represent the earliest stage of dune formation, occurring as small mounds to low hummocks at the coast, often supporting isolated plants (Low and Pond, 2004). Embryo dunes are the most dynamic stage of dune formation. If they are disturbed, further dune formation may be halted with associated impacts on related coastal processes such as beach nourishment. These dunes can therefore be considered highly sensitive (Low and Pond, 2004).

Embryo dunes are found in three locations along the coast of District A. Two dunes along the coastline of Table Bay (at Paarden Eiland and Granger Bay, respectively) are fragmented and highly impact on by urbanisation and road infrastructure, as well as parking (at Granger Bay) (Low, 2008). The more extensive embryo dunes at Koeëlbaai (between Camps Bay and Oudekraal) are moderately impacted on by roadside parking and infestation by invasive alien acacias (Low, 2008).

e) **Heritage and Cultural Resources**

Archaeological evidence, such as Stone Age hand axes found in the Table Bay harbour and two Khoekhoen burial sites found in Green Point, testify to long history of human occupation in the Table Valley. Pre-colonial archaeological remains are, however, not well preserved.

District A includes the earliest settlement areas of Cape Town. Cape Town originated as a refreshment station for the Dutch East India Company (Vereenigde Oost-Indische Compagnie – VOC) in 1652. The settlement was focused around the Company Gardens. A VOC outpost was established on Robben Island and mainly used for breeding of livestock, but also as place of imprisonment. Roodebloem (1661) and Zonnebloem (1707) were amongst the early freeburgher farms granted in District A, while the bulk of the early freeburgher grants were situated along the Liesbeeck River in District H. In the late 18th
century, a number of market gardens were granted in the Upper Table Valley. By the start of the 19th century, the areas surrounding the original urban core consisted of small farms and market gardens (Fransen, 2004:63).

The urban core of Cape Town remained fairly contained between Buitengracht and Buitenkant streets until the early 19th century, when larger garden lots were subdivided for additional residences and the City expanded into Green Point and Sea Point. In the 1830s, discrete villages developed in the less affluent areas such as Bo-Kaap and District Six to accommodate emancipated slaves. Cape Town was declared a Municipality in the 1840s.

The road network was formalised during the 1850s, facilitating movement into the Cape Flats and the rest of the interior. Large scale improvements were made to the Table Bay Harbour the railway network was developed, resulting in the industrialisation of Salt River in 1861.

The discovery of diamonds and gold in Kimberley and Witwatersrand led to a boom in the influx of immigrants and resulted in a boom in the development of Cape Town. The SA College campus was established at the UCT Hiddingh campus to provide skills for the new mining industry.

During the Anglo Boer War 1899-1902, Green Point Common became camping sites for British soldiers before they were deployed, while Boer Prisoners of War were held in a camp inside the neighbouring Athletics Track.

An outbreak of bubonic plague in 1901 lead to the first forced removals in Cape Town under the name of slum clearance and sanitation. Black migrant dock workers living in District Six were removed to the Uitvlugt camp, which later developed into the Ndabeni Native Location (Bickford-Smith, 1999).

The periods surrounding the two World Wars were characterised by increased industrialisation. The high demand for housing in the post war period provided the impetus for the planning of the Apartheid city with separated residential areas for the different race groups, well before the Group Areas act was passed. Ndabeni was established as a ‘native location’ in 1901. Langa was laid out in 1927 to accommodate the residents from Ndabeni who were to be removed to make place for the planned ‘garden city of Pinelands’. Windemere, Crawford and Maitland were planned as coloured residential areas (Bickford-Smith, 1999).

The Group Areas were delineated from 1957. Virtually all of the residential areas of the City Bowl were declared White Group Areas, with the exception of the Bo-Kaap (Malay area). Woodstock, owing to its high degree of racial integration, defied declaration and remained a mixed area. The most poignant of the forced removals sites remains that of District Six, which was demolished in the 1970s as a slum area and has remained undeveloped. Tramway/Ilford Roads, Sea Point, Salt River and Observatory were affected and people were moved to the Cape Flats (in District G).

\[ f \] Pollution and Waste

Air Pollution

The CoCT has an ambient air quality monitoring network comprising 11 monitoring stations, and two of these are located in Central Cape Town within District A (near City Hall). The CBD has been identified as an air pollution ‘hot spot’ in the City’s Air Quality Management Plan, with particulate matter ($PM_{10}$) as the principal pollutant (CoCT, 2005). The number of annual $PM_{10}$ exceedances in the City Centre has been significantly lower than that in other parts of the City.
**Effluent (Liquid Waste) Management**

Sewage and industrial effluent are the main components of liquid waste generated. District A is serviced by two large waste water treatment works (WWTWs) outside of the district’s borders (Cape Flats and Athlone WWTWs) and an additional small WWTW (Oudekraal WWTW) that is located within District A. Sea outfalls, where fine screening and discharge of effluent to sea takes place, are located at Green Point and Camps Bay.

Managing sewage collection, treatment and discharge is a critical issue and several challenges face the authorities in this regard:

- The high costs of collection and treatment;
- Increasing sewage generation and pressure on existing WWTW capacities;
- Servicing informal housing areas;
- Ensuring outfall water complies with legislative requirements;
- Ensuring sewage sludge disposal complies with regulations; and
- Recent power outages, which have increased the number of pump station overflows and rising sewer incidents.

The standard of compliance for effluent leaving WWTWs is measured using *Escherichia coli* (*E. coli*) as an indicator and is set at 1 000 *E. coli* /100 ml. In the City in general, including District A, overall compliance of effluent quality is low and is declining (CoCT, 2008). Ongoing initiatives are taking place to improve effluent quality e.g. rehabilitation of upgrades to the Green Point sea outfall, the Cape Flats WWTW and the Athlone WWTW.

**Rivers and Wetland Pollution**

The pollution and degradation of rivers and wetland systems within District A, and the Western Cape in general, are critical issues. Many of the rivers in District A have been impacted by effluent discharged from WWTW and canalisation.

The City monitors *E. coli* as an indicator of water quality for public health and total phosphorus as an indicator for the health of the ecosystem\(^3\). The Salt River and its tributaries (the Elsiekraal, Black and Liesbeek Rivers) form the major river system in District A. Only 1% of 14 water samples taken by the CoCT in the Salt River between April 2007 and March 2008 complied with the DWAF Water Quality Guidelines for intermediate contact recreation\(^4\). This is the worst performance of all rivers tested by the City during this time frame. The median concentration of phosphorus in the samples showed hypertrophic\(^5\) conditions and hence bad ecosystem health in the Salt River system (CoCT, 2008).

The main causes and/or sources of pollution for rivers and wetlands in District A include:

- Insufficient service provision, particularly in informal settlement areas, leading to, e.g. contaminated stormwater;
- Polluted run-off from industrial and other urban areas;
- Release of treated effluent from Athlone and Borchards Quarry WWTWs; and
- Sewer overflows (pump stations and sewage blockages).

\(^2\) 1 000 indicator organisms

\(^3\) Note a range of physical, chemical and biological constituents are monitored. *E. coli* and phosphorus have been selected for general reporting purposes.

\(^4\) Water contains equal to or less than 1 000 counts of *Escherichia coli* (*E. coli*) in 100 ml.

\(^5\) Excess accumulation of nutrients in a body of water.
Coastal Water Pollution

Trends show there has been a slight overall decline in coastal water quality along the Atlantic coastline between 2007 and 2008. Reasons for coastal water pollution include the discharge of sewage into stormwater systems (recently exacerbated by power outages and aged infrastructure), high rainfall events and hence higher volumes of potentially contaminated run-off and higher levels of beach usage with associated pollution and degradation (CoCT, 2008).

In District A, coastal water quality is monitored at 17 sites along the Atlantic coastline between Granger Bay and Oudekraal. For the year ending March 2008, results showed that four sites did not meet the 80th percentile guideline6 (the more stringent criterion), including Granger Bay, Three Anchor Bay, Sunset Beach pool and Bakoven Bungalows. All monitored sites met the 95th percentile guideline7 for the year ending March 2008 (CoCT, 2008).

Solid Waste Management

District A, together with the other districts in the City, is confronted with waste management challenges driven by increasing waste generation and limited suitable space for disposal and treatment. Current trends from the available data indicate that the increasing waste volumes are outstripping population growth by 5% (CoCT, 2006). Increasing waste generation leads to cumulative contamination and pollution in the long term as the receiving environment has limited capacity to assimilate and breakdown waste.

In District A, 1.76% of households have no regular formal refuse removal service (CoCT, 2007), which is significantly lower than the City average.

The CoCT runs six waste disposal sites, of which only three are currently operational (one of these sites, Vissershok, accepts hazardous waste). None of these sites are located within District A, but the district does have one transfer facility located in Athlone and two drop-off sites, one at the Athlone Transfer Station and one in Woodstock.

The CoCT has recently adopted an Integrated Waste Management Policy to try to minimise and effectively manage waste.

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6 80% of samples must not contain more than 100 \( E_{coli} \) per 100ml.
7 95% of samples must contain no more than 2000 \( E_{coli} \) per 100ml.
Map E3: Hydrology
3.1.2 Socio-economic environment and profile

District A comprises the main commercial and tourist area of the city. It includes the Central Business District, the City Bowl and the Atlantic Seaboard - all of which are prominent and globally recognised features of Cape Town - as well as the significant economic infrastructure of the Port of Cape Town and the V&A Waterfront, one of the most visited tourist attractions nationwide. It also includes middle and lower income residential areas - parts of Woodstock, Salt River and Langa, and some important industrial land parcels like Epping and Paarden Eiland. The District population is approximately 170 671 (which is 5.9% of the total population of the city), and more than half of all households have either 1 or 2 members. The average age is 29 and the area represents the District with the lowest percentage of children in the City. The population data suggests that a large proportion of housing units in the district could cater for households of a smaller size with associated facilities suited to the needs of the population.

a) Population

District A has a population of 170 671 people (based on 2001 figures) which comprises only 5.9% of the total population of the City of Cape Town and reflects the lowest population after District B. In general, residential densities in the district are relatively low; the highest densities are evident in areas of Langa, Windermere and Sea Point.

<table>
<thead>
<tr>
<th>AGE</th>
<th>Male</th>
<th>%</th>
<th>Female</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5</td>
<td>6,800</td>
<td>3.98</td>
<td>6,693</td>
<td>3.92</td>
<td>13,193</td>
<td>7.91</td>
</tr>
<tr>
<td>6 – 12</td>
<td>7,637</td>
<td>4.47</td>
<td>7,829</td>
<td>4.59</td>
<td>15,466</td>
<td>9.06</td>
</tr>
<tr>
<td>13 - 17</td>
<td>5,822</td>
<td>3.41</td>
<td>6,135</td>
<td>3.59</td>
<td>11,957</td>
<td>7.01</td>
</tr>
<tr>
<td>18 - 34</td>
<td>29,886</td>
<td>17.51</td>
<td>30,365</td>
<td>17.79</td>
<td>60,251</td>
<td>35.30</td>
</tr>
<tr>
<td>35 - 54</td>
<td>19,501</td>
<td>11.43</td>
<td>21,833</td>
<td>12.79</td>
<td>41,334</td>
<td>24.22</td>
</tr>
<tr>
<td>55 - 64</td>
<td>5,750</td>
<td>3.37</td>
<td>6,771</td>
<td>3.97</td>
<td>12,521</td>
<td>7.34</td>
</tr>
<tr>
<td>65+</td>
<td>6,390</td>
<td>3.74</td>
<td>9,259</td>
<td>5.43</td>
<td>15,649</td>
<td>9.17</td>
</tr>
<tr>
<td>Total</td>
<td>81,786</td>
<td>47.92</td>
<td>88,885</td>
<td>52.08</td>
<td>170,671</td>
<td>100.00</td>
</tr>
</tbody>
</table>

The average age of people in the district is 29 years, and the district has the lowest ratio of youth and aged dependant on the potential labour force in the city. It also has the lowest percentage of youth (23.9%) of all districts. There are more females (52.08%) than males (47.92%) in the district.

<table>
<thead>
<tr>
<th>Table 3.2: Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependency Ratio</td>
</tr>
<tr>
<td>Index of Ageing</td>
</tr>
<tr>
<td>Median Age</td>
</tr>
</tbody>
</table>

Over half of the households (56.3%) in District A have either 1 or 2 people.
Table 3.3: Household size

<table>
<thead>
<tr>
<th>HOUSEHOLD SIZE</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>17,794</td>
<td>30.64</td>
</tr>
<tr>
<td>2</td>
<td>14,948</td>
<td>25.74</td>
</tr>
<tr>
<td>3 to 4</td>
<td>15,584</td>
<td>26.83</td>
</tr>
<tr>
<td>5 to 6</td>
<td>6,751</td>
<td>11.62</td>
</tr>
<tr>
<td>7 to 8</td>
<td>1,960</td>
<td>3.37</td>
</tr>
<tr>
<td>9+</td>
<td>1,043</td>
<td>1.80</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>58,079</td>
<td>100.00</td>
</tr>
</tbody>
</table>

b) Economy

District A: Table Bay is the main area of economic opportunity in the city with the largest concentration of economic activities - including most of the higher order services. It has by far the greatest value of all economic property (34%) and nearly 40% of all commercial properties. Tourist accommodation is particularly significant with hotels and guest houses in the district accounting for 14% and 1% of all economic property respectively. In terms of turnover, the district represents R62.9 million - which is 22.1% of the total in the city (City of Cape Town 2007a).

Major changes have taken place within the Central Business District (CBD) - many previous office blocks have been converted to residential and office occupancies have decreased to some of the lowest rates in recent years. It has also seen major development of new office, residential and hotel developments on the Foreshore, especially the area closest to the Waterfront, including the new Cape Town International Conference Centre. It is home to the Cape Town harbour and one of South Africa's top tourist attractions, the V&A Waterfront. The Waterfront still has significant bulk rights available and it is the intention of the owners to realize this development opportunity in future. Aside from the CBD, the district also includes other significant commercial and industrial areas like Epping, Paarden Island, Maitland, Salt River, Green Point and Sea Point. New residential and commercial development has also taken place in Woodstock and Salt River. This trend is likely to continue due to the relative low property values and close proximity to the CBD.

According to Census data 2001, most formal development (applications for residential and commercial) in the district took place in Langa, Pinelands and Sea Point. Commercial properties account for 26.1% (in terms of value) and industrial properties 19.8% in the district (see Table 23) (City of Cape Town 2007b).

Table 3.4: Commercial and industrial property values

<table>
<thead>
<tr>
<th>Commercial Properties</th>
<th>Count %</th>
<th>Total Property Value (R mill)</th>
<th>% Value</th>
<th>Building Value (R mill)</th>
<th>Land Value (R mill)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Properties</td>
<td>2,066</td>
<td>R 10,954</td>
<td>38.5%</td>
<td>R 8,325</td>
<td>R 2,616</td>
</tr>
<tr>
<td>Industrial Properties</td>
<td>1,116</td>
<td>R 2,697</td>
<td>23.0%</td>
<td>R 1,572</td>
<td>R 1,125</td>
</tr>
<tr>
<td>Commercial and Industrial Properties (Sum of above 2 tables)</td>
<td>3,182</td>
<td>R 13,651</td>
<td>34.0%</td>
<td>R 9,897</td>
<td>R 3,741</td>
</tr>
</tbody>
</table>

Source: City of Cape Town 2007a

Most of the economically active people in the district are employed (52.9%), while 15.5% are unemployed.

Table 3.5: Employment status
EMPLOYMENT STATUS | Male | % | Female | % | Total | %
--- | --- | --- | --- | --- | --- | ---
Employed | 34,713 | 28.28 | 30,247 | 24.64 | 64,960 | 52.92
Unemployed | 9,549 | 7.78 | 9,496 | 7.74 | 19,045 | 15.11
Economically Active | 44,262 | 36.06 | 39,743 | 32.38 | 84,005 | 68.43
Not Economically Active | 15,064 | 12.27 | 23,686 | 19.30 | 38,750 | 31.57
Grand Total | 59,326 | 48.33 | 63,429 | 51.67 | 122,755 | 100.00

Source: City of Cape Town, 2007b

**c) Crime**

A quarter of the reported business crime in the city in 2005/2006 occurred in this district. The reason for the high level of business crime in the area may relate to the fact that the majority of economic activity in the city takes place in this district (City of Cape Town 2007b). It should be noted, however, that since the Central City Improvement District was created in 2000, crime in the CBD has decreased significantly. The hiring of private security firms to patrol business areas has also had a significant impact on the business areas in the district.

d) **Housing**

The majority of dwellings in this district consist of formal dwellings (76.71%), compared to 13.8% informal dwellings (Table 6). The area in the district with the most informal dwellings is Joe Slovo, Langa, with significant numbers also in District 6/ Zonnebloem area. The district is relatively well serviced, except for areas in Langa and Maitland Garden Village which have the lowest service levels in the district.

**Table 3.6: Types of dwellings**

<table>
<thead>
<tr>
<th>TYPE OF DWELLING</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal Dwelling</td>
<td>44,550</td>
<td>76.71</td>
</tr>
<tr>
<td>Informal Dwelling in back yard</td>
<td>3,042</td>
<td>5.24</td>
</tr>
<tr>
<td>Informal Dwelling NOT in back yard</td>
<td>5,017</td>
<td>8.64</td>
</tr>
<tr>
<td>Other</td>
<td>5,470</td>
<td>9.42</td>
</tr>
<tr>
<td>Total</td>
<td>58,079</td>
<td>100.00</td>
</tr>
</tbody>
</table>

City of Cape Town, 2007b

e) **Human and social development**

The district has some of the highest income areas in the city, which reflect in the property values of particularly the Atlantic Seaboard and City Bowl. This is in contrast to other less affluent areas in the district and metropolitan area. In District A Langa is the area worst off in terms of socio-economic indicators, followed by areas like Zonnebloem, Woodstock, Salt River, Maitland, Kensington, Factreton and Maitland Garden Village (See Map P2). It is however difficult to generalise as this district is characterised by a wide range of income bands and associated development patterns in close proximity to each other.
Map x: Informal Settlements: District A

Source: City of Cape Town (2007)
Map x: Service level index: District A

Source: City of Cape Town (2007)
Map P2: Socio-Economic Status Index: District A

Source: City of Cape Town (2007)
f) **Economic and Urban Settlement Characteristics**

District A has the second-smallest population in the CoCT (170,671 people) and average population density of 1,551 people per km² (2,989 people per km² in urban areas). A significant portion of the district falls within the TMNP and is therefore not populated at all. Informal dwellings account for 14% of all dwellings in the district, predominantly found in Langa and District Six. More than half (56%) of the households consist of only one to two people (CoCT, 2007).

The population of District A is approximately evenly split between the Black African, Coloured and White communities, with a small Asian community also present. The average age of people in District A is 29 years, which is three years above the median age of the population across the entire CoCT (CoCT, 2007).

There are great disparities in socio-economic well-being within the district. While some areas within District A, such as Camps Bay and Clifton, are home to some of the wealthiest people in South Africa, there are other areas where people are markedly worse-off. Such disparities are largely a relic of apartheid economic and planning policies. People residing in District A have a better level of service delivery than the City average; the lowest service levels in the district are found in Langa and parts of Maitland (CoCT, 2007).

With regards to violent crimes, District A ranges in the midfield amongst the eight CoCT districts. The district has the fourth-lowest murder and rape rates, but the by far highest incidence of business crime when compared to all other City districts. Drug-related crime in District A has increased sharply, in line with all other CoCT districts (CoCT, 2007).

Cape Town’s Central Business District is located at the heart of District A and is the most important commercial and business area of Cape Town. It also acts as a major draw card for national and international tourists. More than 26% of all commercial properties in the CoCT are located within District A, accounting for 38.5% of total CoCT commercial property value. This is more than double the value of commercial property in any other district (CoCT, 2007a).

Industrial areas are mainly located in Paarden Eiland, Maitland and Epping. District A has the second-highest number of industrial properties (19.8% of CoCT total), which have the third-highest property value amongst CoCT districts (CoCT, 2007a). The District also accommodates the Port of Cape Town which has high regional, national and international importance.

About 68.5% of the people in District A are economically active (i.e. working or actively looking for work). Of these, 77% are employed. Only 15% of the labour force of the district works in unskilled occupations, which is the second lowest ratio of all districts (CoCT, 2007a).
3.1.3 Settlement patterns

a) Land use patterns and development trends

District A is a relatively small district but with significant growth and development pressure due to its locational and economic attributes. The investment focus remains largely on the central city area, while other portions of the district are characterised by insufficient investment in the public realm. Continuing pressure for residential as well as office development exist primarily due to the locational qualities of the CBD and the proximity to employment opportunities within this district. The impact of the current economic climate on this trend is yet to be seen. However it is expected that the exceptional amenity value and tourism potential of the district will always result in a high level of redevelopment that is not experienced elsewhere in the metropolitan area.

The following settlement patterns are evident:

- District A is primarily characterised by the well-developed urban context of the central city. It includes areas with characteristic built fabric like the Bo-Kaap, Woodstock, Salt River and Observatory. While much of this urban environment is the result of gradual development, the severe impact of apartheid planning is clearly evident in an example like District 6. The modernist interventions that brought about the car-oriented foreshore and freeways system have also considerably changed the character of the area.

- The district reflects a range of residential neighbourhoods of varying character and residential densities. The highest population density is in Langa followed by portions of Maitland and Observatory. Noticeably high densities are evident in Sea Point and Green Point. The form of the urban fabric has been greatly influenced by the natural context, with a band of intense development around the Atlantic Seaboard as a result of topographical constraints. Oranjezicht and Higgovale are characterised by a slightly lower density residential pattern that provides in the demand for single residential housing in proximity to the central city. Predominantly single residential land use also feature in the established Garden City suburb of Pinelands. (See map P3)

- The provision of affordable housing in this district has always been limited and continues to be problematic. Very little public housing stock exists and available land is limited. Parts of this district experience international demand which subsequently reflects in land and property values. There are relatively few informal settlements, despite the proximity to employment opportunities. The vacant land map (see Map P4) gives an indication of the relative scarcity of housing opportunities in this district due to the topography and environmental assets that need to be protected.

- Industrial land use is concentrated in Epping, Paarden Eiland and Salt River and extends along Voortrekker Road towards Maitland. The CBD and V&A Waterfront is the main focus of commercial activity in the district. (See Map P5)

- There is a need to balance private investment that results in exclusive, upmarket facilities or precincts with the need for an integrated urban environment that provides equitable access to all the district’s amenities. The public realm and open spaces play an important role in this regard.

Redevelopment trends include the following:

- The majority of development pressure in this district is experienced in the CBD and central city area (roughly stretching from Green Point in the west to Woodstock and Salt River in the east). There is a trend in development applications for buildings that require significant departures in terms of existing height and bulk restrictions. This not only has
an impact on the built form and character of the area but also increases pressure on services capacity.

- In terms of the local economy, District A and in particular the Central City (which makes up 22.3% of the regional economy), displays four key focus areas - finance and business services, the visitor economy, creative and cultural industries and iconic/legislative institutions. These sectors, together with wholesale and retail trade, should be retained and attracted by developing and protecting the necessary spatial conditions. The interrelationships between these are influenced by planning decisions related to the character of the built environment, land use mix, public environment and facilities as well as public transport, parking and access.\(^8\)

- Investment in the public realm has been extensive when compared to other districts, with a number of historically significantly public spaces and pedestrian linkages having been upgraded. These not only contribute to spatial legibility but also play a tourism and amenity role by creating an image for the city and providing multi-functional open spaces. The potential to extend this is significant and should not be limited to the already well-establish urban environment of the CBD.

- As the focal point of tourism in Cape Town, the district will continue to play a key role in tourism development in the city, especially relating to the 2010 Soccer World Cup. Considerable public and private spending on urban development and infrastructure upgrading has already taken place largely as a result of this event. This includes the ongoing upgrading of Cape Town Station.

- Large-scale greenfield development opportunities are limited. Small pockets of vacant land that might be suitable for infill development are scattered in areas of the CBD and Woodstock. The exception to this is the large developable land parcels of District Six and Wingfield. Both of these have the potential to significantly alter the urban landscape of the district and provide in the need for well-located residential and mixed use precincts. Although processes relating to the development of these sites have been on-going over many years, it is becoming increasingly important to find sustainable solutions to address the need for inclusionary housing and integrated urban settlements in this district.

- Major investment in high-end residential units and business/commercial buildings is taking place and is expected to continue in areas like the V&A Waterfront, the Roggebaai Canal area and foreshore and the eastern city precincts towards Woodstock.

- Areas stretching along Victoria and Albert Roads in Woodstock and Voortrekker Road towards the east have until recently been characterised by a degraded public environment and mostly industrial type activities. A gradual shift is taking place towards more business/commercial land uses and high density residential apartments. There is a tendency of redevelopment aimed at creative industries, with the development of for example the Old Biscuit Mill precinct and buildings occupied by advertising agencies and art galleries.

- As in Woodstock and Salt River, the existing characteristic building stock of the East City lends itself to redevelopment with an emphasis on creative and cultural industries that is supported by a quality public environment.

- As a result of its location close to the coast and the central city, Paarden Eiland is beginning to experience redevelopment pressure. It is expected that there will be a shift from the current industrial land uses towards a greater provision of mixed use with commercial and residential opportunities. This requires a re-evaluation of its character and potential built form.

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Map P3: Settlement and Density
Map P4: Settlement Development and Undeveloped Land
Map P5: Economic Activities
b) Movement systems

The existing movement pattern in the district and surrounds is characterised by increasing congestion of private vehicles as well as competition by a large amount of road-based freight movement. A strong commuter traffic flow towards the Cape Town CBD occurs during the morning peak period while routes operate far below capacity in the reverse direction during this time. The afternoon peak period is the reverse of this. There is a significant reliance on public transport for work-related travel towards the district from other areas. The need to improve these services is well-known and programmes of investment are underway for various integrated transport initiatives. Within the central city area, pedestrian movement is widespread but can be improved and extended with increased investment in non-motorised transport networks and related facilities.

i) Road infrastructure and its functioning

The road network in the study area is characterised by a strong provision of mobility oriented routes converging on the CBD. The most significant routes in terms of the road hierarchy are the two urban freeways of the N1 and the N2, the main arteries into the area. The N7/ Vanguard Drive (the eastern boundary of the district) and the M5/ Black River Parkway form important north-south linkages that connects across into other districts. The connectivity of the district, particularly the CBD, with the wider metro area remains problematic as a result of its location and geographic constraints. This would have to be addressed by extensive improvements in public transport infrastructure together with a general shift towards the provision of mixed land use that is less car-dependant.

Two major road infrastructure upgrades, the Koeberg interchange upgrade and the Hospital Bend pre-selection scheme, are currently underway to improve the operational efficiency (of largely private vehicles) into the CBD.

Several proposed route connections are supported to strengthen connectivity and general mobility in the District:

- Granger Bay Boulevard
- Berkley Road extension (Berkley Road with a proposed extension that connects with Malta Road/ Albert Road (Lower Main) as part of a inter-district development route.
- Aerodrome Road
- Wingfield internal circulation
- Frans Conradie extension (Frans Conradie Road, continuing from Goodwood in the east, with a proposed extension through the upper end of Wingfield along an extension of Sable Road that would link into Koeberg Road in the Rugby area)

ii. Public transport infrastructure and its functioning

In terms of public transport the district is well served by taxi operators and bus services. These operate along the main routes in the area, notably Victoria Road from the southern suburbs and Sea Point Main Road as part of an inner city circulation system. Cape Town Station functions as a major public transport interchange for trains and minibus taxi’s in close proximity to the bus terminus in Strand Street.

As part of the City’s initiative to upgrade public transport, a number of routes are proposed for the district. These include both trunk (T) and feeder routes (F). It is intended that services along the trunk routes will take the form of Bus Rapid Transit (BRT) services as part of the proposed Integrated Rapid Transport system. The routes indicated below are those that
impact on District A during the proposed Phase 1A implementation. These are subject to change as the operational planning of the various routes continue.

Table 3.7: Proposed BRT routes

<table>
<thead>
<tr>
<th></th>
<th>Proposed BRT routes</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Doornbach / Du Noon - Cape Town Waterfront</td>
<td>Du Noon - Potsdam Road - Blaauwberg Rd - R27 - Milner St - Paarden Eiland disused rail siding - New N1 busway - Old Marine Dr - Civic Lane - Hertzog Blvd - Heerenbrach St - Hans Strijdom Ave - Granger Bay Blvd - Breakwater Lane - V &amp; A Waterfront</td>
</tr>
<tr>
<td>T2</td>
<td>Airport - Cape Town CBD - Seapoint</td>
<td>Airport Terminal - Airport Approach Rd - N2 - Hertzog Blvd - Heerengracht St - Adderley St - Riebeek St - Somerset Rd - Main Rd - Three Anchor Bay Rd - Beach Rd - Queens Rd Circle</td>
</tr>
<tr>
<td>F1</td>
<td>Hout Bay - Camps Bay</td>
<td>Hout Bay Beach - Main Rd - Imizamo Yethu - Llandudno - Victoria Rd - Camps Bay Dr</td>
</tr>
<tr>
<td>F2</td>
<td>Camps Bay - Cape Town Waterfront</td>
<td>Camps Bay Dr - Kloof Nek Rd - Kloof St - Long St - Wale St - Adderley St - Hans Strijdom Ave - Lower Long St - Duncan Rd - V &amp; A Waterfront Clock Tower</td>
</tr>
<tr>
<td>F3</td>
<td>Seapoint - Waterfront - Foreshore</td>
<td>Queens Rd Circle - Queens Rd - Regent Rd - Main Rd - Three Anchor Bay Rd - Beach Rd - Breakwater Lane - Port Rd - South Arm Rd - Duncan Rd - Lower Long St - Coen Steytler Ave - Heerengracht St - Table Bay Blvd - New Table Bay Blvd Parking Facility</td>
</tr>
<tr>
<td>F4</td>
<td>Camps Bay – Seapoint - Cape Town CBD</td>
<td>Camps Bay (Bakoven) - Victoria Rd - Queens Rd - Queens Rd Circle - Queens Rd - Regent Rd - Main Rd - York Rd - Western Blvd - Hans Strijdom Ave - Adderley St - Riebeek St - Long St - Hans Strijdom Ave</td>
</tr>
<tr>
<td>F5</td>
<td>Bantry Bay - Cape Town CBD</td>
<td>Queens Rd Circle - Queens Rd - Kloof Rd - Ave Fressnaye - High Level Rd - Strand St - Long St - Riebeek St - Adderley St - Fountains Circle</td>
</tr>
<tr>
<td>F6</td>
<td>Vredehoek - Cape Town CBD</td>
<td>Deer Park Dr &amp; Highlands Ave - Highlands Ave - Gorge Rd - Mill St - Annandale Rd - Orange St - Long St - Wale St - Adderley St - Heerengracht St - Table Bay Blvd - New Table Bay Blvd Parking Facility</td>
</tr>
<tr>
<td>F7</td>
<td>Tamboerskloof - Cape Town CBD</td>
<td>Bond St / Camden St couplet - Camden St - Brownlow Rd - Burnside Rd - Kloof Nek Rd - Kloof St - Camp St - Upper Orange St - Annandale Rd - Mill St - Buitenkant St - Darling St (turn around using Adderley - Longmarket - Parliament - Darlinging)</td>
</tr>
<tr>
<td>F8</td>
<td>City Bowl Circle Line</td>
<td>Kloof St - Hof St - Rayden St - Molteno Rd - Montrose Ave - Upper Orange St - Sidmouth Ave - Highlands Ave - Exner Ave - Davenport Rd - Bellair Rd - Nordelik Ave - Barnham Ave - Gardenia Ave - Chelsea Ave - new Brandweer St / McKenzie St couplet - de Villiers Rd / McKenzie St couplet - Tennant St - Keizergracht - Darling St - Adderley St - Hans Strijdom Ave - Long St - Kloof St</td>
</tr>
</tbody>
</table>

The implementation scope of works in the first phase comprise nine closed trunk stations, three closed feeder stations and more than two hundred open feeder stops. The trunk routing has the potential to generate economic and densification opportunities around its stations. This requires careful thought when dealing with possible land use changes.

In addition various non-motorised transport initiatives are linked to the Integrated Rapid Transit system. The proposals for the inner city in particular include a number of dual pedestrian and bicycle lanes with supporting facilities.
c) Community and public facilities and public open space

(To be informed by CSIR facilities assessment)

District A reflects a relatively high level of investment in a range of community and public facilities. At a district scale, there are tertiary educational institutions, a number of major public and private hospitals as well as district level sports facilities and open spaces. The central library in the recently renovated Drill Hall is an example of an outstanding facility available to the wider community.

Most of the residential areas are reasonably well-serviced in terms of schools, libraries, community halls and sports facilities. In general these are easily accessible and located along major transport routes. Facilities are generally well-maintained although there is a concern around the maintenance and utilisation of the more local parks and public open spaces. Often open spaces have poor connections and interfaces with the surrounding context resulting in under usage and inadequate passive surveillance. A rationalisation of the open space system in this district is necessary to identify areas where spatial reconfiguration can improve its functioning and amenity value.

In District A, a clustering of community facilities are evident in a number of locations. This spatial configuration is to be reinforced where possible by locating additional facilities in close proximity to support improved access to public facilities and to promote a sense of civic identity.
d) **Utilities network and infrastructure**

This district, similar to other older parts of Cape Town, are facing increasing urban infrastructure constraints. Although the extent of this is not easily quantifiable in respect of all services, large portions of district A might be affected within the next 5-10 years. The need for increased infrastructure spending should be considered in during development processes. Bulk water provision and reticulation issues in this district would have to be addressed within the next 5 years. Capacity constraints also exist in the waste water reticulation system. For the majority of urban areas in this district this might have an effect within the next 5 years, while the remaining areas might be affected within 5-10 years. The waste water treatment works (WWTW) serving this area are functioning at capacity and would have to be upgraded to enable further urban development. Electricity capacity would also have to be addressed within certain areas of this district over the next 5 years. In terms of storm water management, a portion in the south-east of this district faces serious capacity constraints within the next 10 years.

Within the central city area (stretching from Green Point to Woodstock and incorporating the city bowl) a more detailed infrastructure capacity assessment was done. The findings of this study (CoCT 2008) are summarised below.

**Bulk Water**

The bulk water supply system for the purpose of this investigation refers to the part of the water supply system that supplies treated potable water from the Tygerberg Reservoir to the Molteno Reservoir via the Paarden Eiland Booster Pump Station. The water distribution system is defined as the pipe system that distribute potable water from the bulk water system to each consumer in a metered connection. In the case of the central city area the bulk water and distribution system are interconnected and therefore the distribution system forms an integral part of the bulk supply system to the Molteno Reservoir.

Currently there are no immediate problems with the bulk supply system in terms of both the infrastructure nor water as a source. The mechanical, electrical and civil infrastructure requires ongoing maintenance to ensure that the system can continue to operate effectively. The biggest future challenge will be to increase the potable water treatment, conveyance and reservoir storage capacity of the system to be able to supply future water demand. Augmentation of the bulk system will increase capacity over broad areas of the city; the central city however will benefit from increased overall capacity i.e. increased assurance of supply across the network. The expansion in the Atlantic Seaboard area should be looked into from a bulk supply perspective. The ability to continue to provide an adequate bulk supply to the Molteno/Oranjezicht/ Kloofnek/Campsbay/Sea Point tank bulk supply system should be investigated and would be an outcome of the current tender for metro wide master planning for water. There are a few pipe reinforcements required on the bulk pipelines supplying the city centre.

**Water Distribution**

Currently the water system is performing adequately but ageing. Performance is measured on the ability of the water infrastructure in the ground to deliver water to consumers in the designated area. Pressure recordings, taken hourly every day at fixed pressure monitoring points do not indicate any cause for concern. A key determinant in the effectiveness of the performance of this reticulation is the strictly controlled valve operation in this area. This performance is also monitored via pressure recordings. Soundness of the local water reticulation is measured by the number of burst water mains. Whilst, the infrastructure is ageing, burst main records do not indicate cause for alarm. An increased incidence of burst water mains is noted on occasions when the main booster station serving the area, Paarden
Island Pumpstation is operated. Sections of water mains are relaid as and when required as part of the metro's mains replacement programme.

The current trend of re-developing retail and office blocks into a combination of retail, office and residential uses may lead to future water supply and distribution demands. These re-development trends significantly alter water demand volumes, patterns and peak flows. The impact of this is that it may affect the water distribution system in terms of meter sizing, as these developments are using existing meters. There may also be possible future assurance of supply, which may cause localised problems due to the pipe diameters of the existing distribution system being too small to convey water demands.

**Stormwater**

The Stormwater drainage system serving the central city area consists of an underground pipe network discharging into Table Bay at 16 separate outfalls. The underground pipe network is supplemented by the roads acting as outfall flow channels during larger and less frequent storm rainfall events. A number of storm gulleys/watercourses that drain the upper steep slopes of Table Mountain discharge directly onto the drainage system serving the central city.

Problems are mostly experienced in the central CBD and Sea Point areas. Capacity of systems is satisfactory but litter and debris clogs up gullies and connections. The proposed Culemborg development site is likely to give rise to stormwater drainage problems due to the flat topography of the area and the lack of stormwater conveyances in the vicinity of the site.

In general the stormwater drainage system is able to manage runoff generated by storm rainfall events. The protection of entrances to basements and the ground floor levels of structures during 1 in 50 year and 1 in 100 year storm events needs to be investigated. The discharge of litter and debris with stormwater into the harbour is the cause of regular complaints by the National Ports Authority.

**Sewerage System**

The sewerage system in the central city area is a conventional waterborne sanitation system. The bulk of the area gravitates via the reticulation system in Cape Town to the major Green Point trunk sewer and is pumped to sea. District Six gravitates via the reticulation system to the Woodstock pump station which discharges towards the Athlone Waste Water Treatment Works.

The sewerage system in the area experiences few problems, largely as a result of the reasonably steep gradients, and nature of the wastewater from predominantly commercial and residential property. There are some sewers which do suffer from deposits of fat discharged from some hotels and restaurants and resultant blockages. The very old brick outfall sewer which runs from Woodstock via the Golden Acre and Adderley Street to Green Point is in need of regular cleaning (silt deposits). The connector 225mm earthenware sewer in upper Adderley Street is likewise in need of regular cleaning and maintenance.

The Upper City Bowl sewerage system suffers from water ingress during storms, with surcharge and overflows occurring regularly. Part of the central city catchment area drains towards the Woodstock Sewage pump station. This area suffers from increased solids content and also storm water ingress. Water ingress from incorrectly designed storm water drainage from individual erven, particularly in the Woodstock and Oranjezicht areas, is discharged into the sewer system, particularly via sewer inspection chamber covers that are lifted during storms.
The pipes are generally old throughout this catchment. While earthenware pipes are extremely durable, they do suffer from failure of the cement caulking or rubber ring joints allowing ingress of groundwater, particularly during the rainy winter months. This weakness also allows roots to grow into the sewers, resulting in blockages.

The Green Point sewage outfall pump station has adequate hydraulic capacity, with peaks of 490l/s handled over short periods. The permit conditions limit the total amount of flow that can be pumped to sea to an average of 30Ml/d, while the average flow in 2007 was in the order of 27.6Ml/day. As the flow increases due to growth, the City is to submit an application to increase this limit. The Woodstock sewage pump station is currently running at capacity, and will require upgrading. The sewerage system has several other, smaller pump stations. Most of these are lift stations, delivering into the nearby trunk outfall sewer. No systemic problems with these sewage pump stations have been reported, other than the lack of flow meters. The Council has set up a computerised database to record problems in the sewerage system for assisting in identifying sections of pipe that are becoming less serviceable due to age, and requiring more frequent attention. There are some separate sewerage systems which discharge into the municipal system – these include Portnet, V&A Waterfront, and the Roggebaai Canal tourism precinct currently under construction.

**Electrical**

The electricity network in the CBD is owned and operated by the City of Cape Town. Bulk electricity is purchased at Eskom’s Acacia substation at 132kV and is then transferred to the City’s Montague Gardens main substation via 2 x 132kV overhead lines. From Montague Gardens main substation it is transferred to various main substations within the CBD via 132kV underground cables. At the main substations within the CBD the electricity is stepped down from 132kV to 11kV and then transferred via the 11kV medium voltage underground network.

Many of the main substations are close to capacity as a result of the on-going high growth in demand and there is a recognised need to upgrade the high voltage capacity in the central city supply area to cope with this rapid development. Observatory, Tamboerskloof and Green Point main substations are close to firm capacity. Roggebaai main substation is over firm capacity. A number of main substation transformers and switchgear has reached the end of its operating life and needs to be replaced. The existing Eskom intake point at Montague Gardens main substation is at firm capacity. Capacity available on Eskom’s network (Acacia Substation) is constrained.

There is a recognised need to replace ageing infrastructure on the 132kV high voltage and 11kV medium voltage networks. Well-defined plans and budgets are in place for the high voltage network and no additional work is required. There is also a recognised need to upgrade the medium voltage network to cope with the growth in demand. At this stage there is no integrated long-term master plan to address the load growth on the 11kV network and capacity is installed as and when required. Plans and budgets to address network constraints and capacity problems on the medium voltage network are not well defined and additional work is required in this regard.
Map P8: Bulk infrastructure and exclusion zones
e) **Heritage and cultural resources**

(See EMF component for further detail)

i) **Natural environment**

The prominent natural features of this district - Table Mountain, Robben Island and the Atlantic coastline together with other natural areas, river systems and open spaces – contribute to a unique environment. Integral to the character of the district, these attributes are valued both locally and as part of the metropolitan identity of Cape Town. Effort should be made to integrate these elements into the urban context to allow them to function as visual and recreational amenities that is accessible to the broader public while still protecting it for the future. View corridors, vistas and scenic routes are also important considerations in this district.

ii) **Cultural and heritage resources**

District A, where the first formal urban settlement originated, has areas of tremendous heritage value. Its characteristic urbanscapes and cultural landscapes provide an indication of the diversity of physical and cultural expression throughout history. The historic built fabric of the Bo-Kaap and Woodstock for example, contribute to the unique character of the district and city as a whole that should be protected and enhanced.

A number of central city Heritage Areas falls within the study area. The central city was declared an Urban Conservation Area (now a Heritage Area) in 1997 together with other local historic areas. This provides a mechanism of control as specific alterations to built fabric within these areas require special consent in terms of the zoning scheme. Additional protection is required for other heritage areas not yet formally recognised, for example elements in Langa that relate to the struggle history.

iii) **Initiation sites**

The most prominent initiation site in this district is located in Langa, between the Athlone power station precinct and Bhunga Drive. It is likely that this area will come under increased development pressure. The importance of the site should be recognised and the potential development of for example the adjacent Athlone Power Station site would require careful consideration of protected portions and interface areas.
3.2 Key issues and priorities

Based on the summary of environmental attributes, the following are seen as some of the key developmental issues and priorities facing the district.

3.2.1 Significant environmental and heritage assets

The character of District A is greatly influenced by its prominent natural features. Table Mountain, a World Heritage site and part of the Cape Floral Kingdom, is foremost in this regard, both in terms of its natural resource value and its iconic status as an outstanding symbol of Cape Town. The district is also home to other areas of critical biodiversity value that require protection and careful thought with regard to development proposals that might impact on them. These, together with the coastal landscape of the Atlantic Seaboard and the unique habitats related to the Salt River system (Black and Liesbeeck River) and a number of smaller open spaces, need to be protected and act as informants to development in this district. Similarly the heritage value of some areas and the character and identity of the built environment need to be considered. There is a need to balance the conflicting demands of conservation while allowing appropriate access and the creation of amenity value.

3.2.2 Development pressure

As is the case in most areas, District A is facing continuous pressure for development and a demand for land. Given the extent of the existing built footprint and the environmental and geographical constraints, it is becoming increasingly complex to accommodate further urban development in a manner that is of equal benefit in social, economic and environmental terms. The trend towards exclusive environments, expensive housing and gentrification should be balanced with a focus on appropriate residential densification and affordable housing to ensure equal access to the district’s amenities and natural assets.

As a node of metropolitan significance, the CBD in particular needs to be carefully considered in terms of design parameters and urban form. A development strategy has been initiated to deal with the central city area in greater detail. Diverse local precincts are promoted, the development of which would be guided by policies that respond to the unique character and economic role of each. The impact of continued development on infrastructure also has to be taken into account.

3.2.3 Appropriate and sustainable development

Given the conflicting demands outlined above (protection of the natural environment and development pressure), there is a need to find a balanced approach in this district. This necessitates an emphasis on the quality of the overall urban environment - the built form and its integration with green spaces. A balanced provision of land uses is to bring employment opportunities and residential areas closer together. Similarly an improved public transport system is to assist in reducing car-dependence and harmful emissions.

A move towards greater sustainability would require policy decisions on all of these aspects – land use mix and form, protection of the natural environment, public transport improvement, infrastructure provision, equitable facility provision and a focus on the public environment with a pleasant street level experience and quality open spaces available to all.
Map P9: Development Informants
3.3 Strategic spatial development opportunities

In order to address a number of the issues facing the district, there are some strategic spatial development opportunities to be concentrated on.

- The protection of the outstanding natural features like Table Mountain, the coastline and river systems and ensuring suitable public access to these elements;
- The important economic, social and cultural role of the Cape Town central city;
- Undeveloped, but potentially developable pockets of land within the district;
- The improvement of movement systems and continued roll-out of public transport connections between the central city and the wider metropolitan area;
- The adequate provision of community facilities and public open space across all areas of the district;
- The potential associated with natural systems and open space environment, but also created amenities of a more urban nature.

It is important to acknowledge the role of the Cape Town central city as an important spatial component with a range of issues that cannot be dealt with comprehensively in this document. Given its strategic importance, a separate process is underway to establish guidelines for the management of growth and change for a defined area stretching from Green Point to Woodstock including the city bowl and foreshore. This Central City Development Strategy aims to establish a preferred development path and will function as an implementation action plan and an agreed basis on which the public and private sector can make decisions.

Table 3.8: Summary of key issues and strategic spatial development opportunities

<table>
<thead>
<tr>
<th>Issue</th>
<th>Strategic spatial development opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant environmental &amp; heritage assets</td>
<td>Protection of and access to environmental/heritage resources</td>
</tr>
<tr>
<td>- Natural assets</td>
<td>- Suitable protection and maintenance</td>
</tr>
<tr>
<td>- Protection vs access/amenity value</td>
<td>- Improved access &amp; linkages</td>
</tr>
<tr>
<td>- Protection vs access/amenity value</td>
<td>- Interface between natural &amp; built environment</td>
</tr>
<tr>
<td>Development pressure</td>
<td>Management of growth &amp; urban form</td>
</tr>
<tr>
<td>- Demand for well-located land</td>
<td>- Strategic and infill sites</td>
</tr>
<tr>
<td>- Role of Central city</td>
<td>- Urban form</td>
</tr>
<tr>
<td>- Access to public facilities and amenities</td>
<td>- Infrastructure capacity</td>
</tr>
<tr>
<td>- Strategic and infill sites</td>
<td>- Sustainable development</td>
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<tr>
<td>- Urban form</td>
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<tr>
<td>- Infrastructure capacity</td>
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<tr>
<td>- Sustainable development</td>
<td></td>
</tr>
<tr>
<td>Appropriate and sustainable development</td>
<td>Enhanced urban quality and open space</td>
</tr>
<tr>
<td>- Quality of urban environment</td>
<td>- Investment in special places</td>
</tr>
<tr>
<td>- Open space systems and public space</td>
<td>- Open space systems/ linkages</td>
</tr>
<tr>
<td>- Balanced provision of land uses</td>
<td>- Access to facilities &amp; amenities</td>
</tr>
</tbody>
</table>
4 VISION, OBJECTIVES AND CONCEPTUAL FRAMEWORK

4.1 Draft Spatial Development Vision

The draft spatial development vision developed for the district reflects the desired spatial outcome for the area. It has been informed by the specific locational attributes and spatial opportunities in the district within the context of a spatial vision for the greater metropolitan area. It has further been influenced by the results of a public consultation process as well as processes related to formulation of the SDP. The vision for District A:

*It is to be a district in which locals and visitors can enjoy the remarkable natural and coastal environment and scenic beauty while having the opportunity to benefit from continued economic growth and extensive social and cultural amenities. It is a district where people can work, live and relax in a world renowned setting where intense mixed land uses and natural areas complement each other. Its broad range of employment and recreation opportunities are accessible by means of efficient public transport linkages, while a focus is maintained on the provision of well-located affordable residential opportunities. The district is characterised by quality open spaces and pedestrian linkages that tie its diverse precincts together to create a liveable and vibrant area.*

4.2 Conceptual Framework

In order to strive toward the realisation of the City SDF strategies and spatial vision for the district, the conceptual framework identifies the key spatial ideas (conceptual and structuring elements) which inform detailed spatial development and management proposals as part of the planning package (section 6).

4.2.1. Spatial strategy 1: Enhance the value of the natural and rural environment and green spaces

The Metropolitan Open Space System (MOSS) is the key spatial concept guiding development and the maintenance of green elements within the district. Several imperatives, as expressed by City SDF strategies, are central to the concept:

- **Linkage and continuity**: The aim is to promote a linked and continuous open space system to support integrity of natural systems and provide an opportunity for accessible and linked multifunctional active/passive open space systems;
- **Access, order and typology**: The aim is to ensure that open space is provided in a manner that promotes access to a range of levels and types of open space (from local to metropolitan and natural/passive to active) that supports a wide range of activities (e.g. sports, walking, meeting, events).
In this context, several spatial structuring elements as part of the MOSS are highlighted. The district spatial concept supports:

- **At the city scale:**
  - Managing urban development impacts on natural resources appropriately, including the interface with biodiversity and development along the coastline and river systems.
  - Improving access to a quality metropolitan open space system that includes a range of facilities and resources with appropriate development where relevant.
  - Protecting and enhancing the rural environment by ensuring that conventional urban land uses are limited to urban areas.

- **At the district scale:**
  - Protecting the Table Mountain and managing the interface with urban development;
  - Protecting and enhancing access to other biodiversity assets;
  - Ensuring the adequate provision of smaller, multi-functional open spaces;
  - Retaining and developing continuous open space corridors associated with the storm water system;
  - Developing and reinforcing accessible district level sport and recreation facilities as part of the open space network – Green Point Urban Park and Two Rivers Urban Park;
  - The strengthening of green linkages from the mountain to sea – De Waal Park link and Trafalgar Park link;
  - Ensuring the public accessibility of the coastline and re-establishing the central city’s connection with the water’s edge;
  - Protecting the Liesbeeck and Black rivers systems and de-canalise where possible.
  - Promoting the formalisation of the Two Rivers Urban Park as a component of a coast-to-coast green system.

The concept supports rationalisation of the open space system, where contextually appropriate in order to promote safety through improving interfaces, as well as viability by reducing the amount of unmanaged open space where its provision is excessive.

**4.2.2. Spatial strategy 2: Establish an integrated grid based movement system**
The establishment and reinforcement of a multidirectional accessibility grid is the key spatial concept that will inform development within the district. In this regard, two considerations are central:

- **Linkage and access**: The aim is to set up a grid of accessibility that facilitates convenient access and multidirectional movement between the district and other parts of the city ("primary accessibility grid") and within the district ("secondary accessibility grid") which will feed the primary grid.

- **Order and typology**: The aim is to establish a suitable hierarchy of routes which provide varied, but complimentary roles in terms of accommodating a continuum of mobility and accessibility functions. This in turn will inform a system of public transport which provides a high quality line haul service on higher order development and activity routes, whilst lower order activity streets and other structuring routes will accommodate feeder services. The hierarchy will also inform a positive land use response reinforcing public transport routes. At a level of principle, non-motorised transport should be accommodated in relation to this typology of structuring routes.

In this context, several spatial structuring elements in relation to the accessibility grid are highlighted in the district spatial concept and include:

- **The reinforcement of the “primary accessibility grid” informed at the city scale by:**
  - The north-south routes of Koeberg Road and Victoria Road leading to the southern suburbs and an east-west linkage along Voortrekker Road continuing into the city centre.

- **In addition to the above, reinforcing the development of a secondary and tertiary “accessibility grid”, in some cases by means of new road linkages, includes:**
  - A system of north-south linkages within and across the district in order to move away from the existing radial movement system focussed on the CBD;
  - Lower order structuring and connector routes that enable efficient local movement.
4.2.3. Spatial strategy 3: Consolidate and intensify development in the accessibility grid

The multidirectional accessibility grid and associated areas for intensification (economic armatures that may present mixed use/ industrial/ commercial economic opportunities) are the key spatial concepts that inform development within the district. Several considerations are key in this regard:

- **Order and significance**: The aim is to promote areas associated with the primary accessibility grid (and high levels of exposure) as the focus of more intense urban economic activity;
- **Typology/ areas for intensification**: The aim is to promote more intense, space intensive commercial/ mixed use activity in relation to the accessibility grid.

The spatial structuring elements highlighted in the district spatial concept include:

- Significant areas for intensification/ economic opportunity areas associated with the primary accessibility grid:
  
  - In this district intensification is largely concentrated along the primary accessibility grid comprising Voortrekker Road and Victoria Road. The Voortrekker Road corridor in particular lends itself to a renewed emphasis on economic activity that is supported by higher residential density.
  - It is suggested that this band of economic and mixed use opportunity is extended to the central city by incorporating Paarden Eiland, Culemborg and the northern Foreshore precinct.
  - A less linear approach towards intensification is suggested for the Victoria/ Main Road corridor. The focus should vary along the route, with areas of greater intensity related to intersections of major routes and public transport interchanges.

- A hierarchy of urban civic precincts associated with the accessibility grid, focussing on the following areas:
  
  - Public space network and pedestrian environment of the CBD
  - Woodstock Town Hall precinct
  - Observatory
  - Wingfield/ Voortrekker Road

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*Draft technical report 1: SDP / EMF DistRICT. For comment August 2009*
At the “community scale” the principle of clustering should be reinforced through the co-location of public facilities that serve a few neighbourhoods (e.g. primary school, local/community play park, crèche, food garden, religious institution). These are not, however, reflected in the district concept plan.

4.2.4. Spatial strategy 4: Direct urban growth and promote compact, integrated development

The re-inforcement of the urban edge as a resource management edge is a key spatial concept that will inform settlement expansion within the district. Several spatial considerations are critical with regard to reinforcing the City SDF statements within the district including:

- Resource protection and hazard avoidance: Urban development should be directed away from significant resources (e.g. nature and agricultural areas) and hazards (e.g. flood prone areas)
- Integration and directed growth: spatial growth should occur as a priority within the existing footprint and where it expands beyond this into areas of settlement/developmental opportunity, it should be as part of a phased, coordinated growth process associated with infrastructure and facility provision.

In this regard, the urban and coastal edge directs growth of the settlement footprint in the district away from key environmental resources, including:

- Sensitive coastal areas;
- Biodiversity Areas (Table Mountain National Park);
- Metropolitan Open Space System;
- Flood prone areas.

District A has limited capacity to cater for new settlement growth and expansion, but provision is made for development in the form of:

- Large-scale land parcels within the urban edge in order to accommodate city growth (District Six and Wingfield)
- Infill opportunities on vacant land within the settlement footprint
4.2.5. Spatial strategy 5: Develop more great people places

With regard to this strategy, the multidirectional accessibility grid and associated system of destination places form the key spatial concepts.

The conceptual framework proposes a series of urban, natural and coastal special places. These are areas or locations of unique significance which are public by nature and which should receive public investment to create places with high amenity value. In this district the following are highlighted:

Natural special places
- Table Mountain
- Signal Hill
- Two Rivers Urban Park
- Maitland Cemetery

Coastal special places
- City/sea interface (V&A Waterfront)

Urban special places
- Grand Parade and public spaces network in the central city
- Athlone Power Station

4.2.6. Consolidated SDP Conceptual Framework

The following graphics incorporate the above mentioned strategies to give an overall spatial vision for the metropolitan area and district respectively.
5 ENVIRONMENTAL MANAGEMENT FRAMEWORK

5.1 Introduction

The unique attributes, drivers and pressures facing District A of the City of Cape Town (CoCT) provide a challenge to developers and planning authorities when trying to achieve a balance between environmental sustainability, social equity and economic development. The need for an Environmental Management Framework (EMF) is therefore critical in ensuring that the CoCT and other relevant authorities integrate environmental and heritage imperatives, at a strategic level, in the planning and authorisation of new development.

District A comprises the core part of the City, including the Port of Cape Town, Central Business District (CBD), most of Table Mountain and a portion of the Table Mountain National Park (TMNP, as well as the residential areas along the Atlantic Seaboard, the City Bowl, Pinelands and Maitland. It is bounded by the Atlantic Ocean to west and north-west, District B to the north-east, District D to the east and Districts H and G to the south.

5.1.1 Purpose of the EMF

The Environmental Impact Assessment (EIA) Regulations promulgated in terms of the National Environmental Management Act 107 of 1998 (NEMA) provide for the development of EMFs which are intended to inform planning and environmental management. The intention is that in the future, EMFs will help to streamline the environmental assessment and authorisation processes by geographically determining sensitive areas where certain activities require Environmental Authorisation and other less sensitive areas where authorisation is not required.

The CoCT has integrated the EMFs (for all eight districts comprising the CoCT) into their Draft Spatial Development Plans (SDP) in order to ensure the EMFs effectively inform, and respond to, the future plans and programmes for the City. The EMF therefore forms a component of the SDP report.

The integrated SDPs/EMFs will be submitted to the Provincial Department of Environmental Affairs and Development Planning (D:EA&DP) for approval in terms of the National Environmental Management Act (NEMA, Act No. 107 of 1998). Thereafter the CoCT’s SDPs will be submitted for approval as structure plans under section 4 (6) of Land Use Planning Ordinance (LUPO, Act No.15 of 1985) and provide spatial direction and guidance to the City’s Integrated Development Plan (IDP).

Public participation is a legislated requirement in the development of both EMFs and SDPs. The CoCT is conducting an integrated public participation process for the SDPs and the associated EMF’s, which complies with the legal requirements under both NEMA and LUPO.

The broad objectives of this EMF are as follows:

- To inform and guide spatial planning and land use management in District A of the CoCT;
- To help facilitate good investment (including investment in infrastructure);
- To assist in the adjudication of development proposals and applications; and
- To guide sustainable development in the area and determine the environmental management priorities.
This has been achieved through the identification and description of the environmental attributes or characteristics of District A; the delineation of geographically sensitive areas based on these attributes and the identification of the types of activities that are suitable and unsuitable within these areas or zones.

The EMF includes:
- Environmental attributes (summarised in section 3.1).
- Environmental management priorities (section 5.2) which have fed into a consolidated statement around the key planning and environmental management issues facing the district (section 3.2)
- Environmental Impact Management Zones (described in section 6.1) including detailed guidance in terms of areas and their suitability in terms of accommodating different types of activities.

5.1.2 Legislative Background

The NEMA (as amended) aims to “provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment”. Section 24 (3) of NEMA permits the Minister to “compile information and maps that specify the attributes of the environment in particular geographical areas, including the sensitivity, extent, interrelationship and significance of such attributes which must be taken into account by every competent authority” (NEMA Amendment Act No. 8 of 2004). This information and associated maps make up the Environmental Management Framework (EMF).

The EIA Regulations promulgated in terms of NEMA provide for the development of EMFs which are intended to inform planning and environmental management. Section 70 of the 2006 EIA Regulations stipulates that a draft EMF must be subject to a public participation process and Section 71 of the Regulations provides specific information of what an EMF is required to include:

“A draft environmental management framework must –
(a) identify by way of a map or otherwise the geographical area to which it applies;
(b) specify the attributes of the environment in the area, including the sensitivity, extent, interrelationship and significance of those attributes;
(c) identify any parts in the area to which those attributes relate;
(c) state the conservation status of the area and in those parts;
(d) state the environmental management priorities of the area;
(f) indicate the kind of activities that would have a significant impact on those attributes and those that would not;
(g) indicate the kind of activities that would be undesirable in the area or in specific parts of the area; and
(h) include any other matters that may be specified” (Government Notice R385, 2006).

The Department of Environmental Affairs and Tourism’s (DEAT) Draft EMF Guideline (Guideline 6, 2006) states that … “EMFs should not conflict or be in competition with land use plans for an area but should rather be structured to also provide the necessary environmental inputs into such plans (including SDFs and IDPs)” (DEAT, 2006). It is recognised that EMFs assist the planning process to identify the opportunities and constraints and to provide guidance regarding the nature and scale of development which should occur in an area whilst retaining a sustainability focus.
Section 24 (2) of NEMA permits the Minister, and every MEC with concurrence of the Minister, to identify “(b) geographical areas based on environmental attributes in which specified activities may not commence without environmental authorisation from the competent authority; and (c) geographical areas based on environmental attributes in which specified activities may be excluded from authorisation from the competent authority” (NEMA Amendment Act No. 8 of 2004). The process to identify such geographical areas will start in the EMF compilation process, but will only be completed (as a separate process) once the EMF is complete.

5.2 Environmental Management Priorities

5.2.1 Introduction

The Cape Town City district faces a number of critical environmental and social challenges. Since the financial and institutional resources to address these challenges are limited, it is important to identify the key environmental management priorities for the District.

The following section outlines the key environmental management priorities that have been identified for the District, based on the Strategic Environmental Assessment (SEA), the CoCT’s State of the Environment Reports, the environmental attributes for the District and other relevant documentation. These issues will be made available for comment and discussion as part of the integrated public participation process for the SDPs.

5.2.2 Biodiversity

a) Status

With the exception of those areas falling within the TMNP, most of District A is highly developed and transformed, and very little natural vegetation remains. However, the district does contain some of the remaining tracts of two of South Africa’s rarest vegetation types, namely Sand Fynbos (very small and isolated patches) and Renosterveld (within the TMNP on Signal Hill). Both these types are exceptionally high in species diversity, and have a high incidence of vulnerable and endangered Red Data plant species and many endemic faunal species. Biodiversity in District A is under threat from rapid development, frequent veldfires, infestation by invasive alien species and overexploitation of water and marine resources.

b) Management Priorities

- Conserve remnants of sensitive and threatened vegetation types (refer to Zone Map A4) and control development pressure in the key sensitive areas such as at Wingfield, along the Black River (in the Two Rivers Urban Park area) and along (outside) the edges of the TMNP, e.g. at Tamboerskloof and Bo-Kaap on the lower slopes of Signal Hill;
- Where these remnants conflict with areas earmarked for industrial and residential development, (e.g. at Wingfield) ensure adequate botanical and faunal impact assessments – identifying appropriate mitigation measures – are undertaken before these activities are approved;
- Rehabilitate and maintain areas of sensitive natural vegetation and high biodiversity value (refer to Zone Map A4) and establish “green corridors” where possible (particularly running east-west and north-south);
• Ensure cooperative governance with SANParks to ensure sustainable resource management at the Park-City interface and common areas of interest (e.g. maintaining and enhancing the tourism potential of Cape Town, special planning along TMNP boundaries, integration of TMNP into general city landscape, SANPark management of city-owned land, catchment and runoff management, fire management, alien clearing etc);
• Ensure effective implementation of the Two Rivers Urban Park management plan(s);
• Avoid development outside of the urban edge;
• Maintain and enhance mountain to sea linkages, e.g. at Oudekraal and between Bantry Bay and Clifton, and especially along water courses, e.g. the streams through Camps Bay;
• Control and remove invasive alien vegetation in line with the City’s Invasive Alien Species Strategy (and particularly in and close to nature conservation and biodiversity priority areas, e.g. in the TMNP, areas around Acacia Park and Wingfield, the Two Rivers Urban Park and the stream corridors through Camps Bay);
• Implement effective veldfire management strategies in line with the City’s Veldfire Management Guidelines;
• Control illegal dumping, particularly in and adjacent to important biodiversity sites and wetland areas; and
• Control and prevent the illegal removal of terrestrial and marine species.

c) Pressures and Constraints

• Invasive alien species are found in many of the open areas throughout the district as well as in residential gardens. These areas maintain a seedbank of invasive plants which pose a threat to important biodiversity sites;
• Invasive alien marine species (mostly introduced by ballast exchange from incoming ships) pose a threat to the indigenous marine species along the coast (e.g. black mussels);
• Invasive alien plants and fish (e.g. wattle, river gum, banded tilapia), particularly in the Black River, but also affecting most other rivers in the district to some degree, threaten aquatic biodiversity;
• Natural fire regimes have been altered in the district due to an increased incidence of fires resulting from human activity and negligence. If fires become too frequent, Fynbos is not able to regenerate itself in between burning episodes;
• Private ownership of many of the high priority biodiversity sites, particularly within the urban edge, make management of these sites difficult for the City to control;
• Illegal dumping and land-based pollution;
• Climate change and sea level rise are exacerbating erosion and flooding along the coastline, particularly at the Foreshore/Woodstock, Mouille Point and the rest of the Atlantic coastline of District A;
• Private ownership of river systems reduce the potential for the coordinated management of these systems and their associated biodiversity.

d) Opportunities

• Tourism (particularly eco-tourism and botanical tours in the TMNP);
• Establishment and maintenance of ecological corridors (particularly from Table Mountain to the Cape Point within the TMNP, but also along rivers flowing from Table Mountain to the sea, particularly on the western border of the district);
• Integration of biodiversity with the Metropolitan Open Space System;

9 The TMNP and the City of Cape Town make use of a Bilateral Forum to align their land use and environmental management activities.
5.2.3 Rivers, Wetlands and Groundwater

a) Status

Most of the rivers and small wetland areas in District A, with the exception of those on Table Mountain (and within the TMNP) have been severely impacted on by urban development. The Salt River system (including its tributaries the Black, Liesbeek and Elskieskraal Rivers) flows through densely urbanised, industrial and agricultural areas and has mostly been canalised. As a result, these rivers have lost much of their natural riparian habitat and their environmental functioning has been seriously compromised.

Pollution from urban stormwater run-off, treated effluent from WWTW, overflows from malfunctioning pump stations and gravity sewer systems and new industrial areas as well as infestation by alien invasive vegetation are very evident in the Salt River system, which is considered one of the worst systems in the CoCT (see Rivers and Wetland Pollution). Remnants of threatened natural vegetation occur along the Black River in the vicinity of its confluence with the Liesbeek River.

Some areas along the banks of the Black, Liesbeek and Salt Rivers are also particularly prone to flooding.

b) Management Priorities

- Establish and maintain appropriate river and wetland buffers and prevent inappropriate land uses in these areas;
- Complete mapping of flood prone areas;
- Prevent/control inappropriate development in flood prone areas;
- Improve water quality especially in the Salt River system (see Section 5.2.8 Pollution and Waste Management);
- Identify and implement measures to prevent E.coli contamination of rivers and wetlands (this is particularly bad in the Salt River system). Measures should include the provision of basic services to informal settlements (e.g. at Langa);
- Improve river systems (particularly the Salt River system) by providing further detention pond facilities, de-canalising the rivers, introducing natural vegetation filtering where possible and by ensuring that future developments apply more restrictive building setback lines and require all new developments above 4000m² to comply with the City Of Cape Town's Management of Stormwater Impacts Policy;
- Ensure that proposed new commercial developments take advantage of the amenity value of rivers or waterbodies, where they can enhance the greater public good, and do not compromise the ecological functioning of the system. Identified suitable areas

10 River and wetland buffers have only been determined for a few rivers and wetlands in the CoCT. Where these have not yet been determined they need to be calculated using the criteria and methodology as contained in the CoCT’s Floodplain and River Corridor Management Policy.

The Management of Stormwater Impacts Policy sets criteria and targets for the management of stormwater quality and quantity on site.
include the Black River through Mowbray and Observatory and its confluence with the Liesbeek River (the Two Rivers Urban Park);

- Investigate and implement measures to reduce flooding along the Salt River system, particularly at the River Club and Paarden Eiland areas.
- Control illegal dumping and littering, particularly in areas where dumped material can enter or alter stormwater and river systems;
- Ensure effluent from industrial development is not discharged in the stormwater system or directly into rivers;
- Ensure stormwater is managed according to the requirements of the City Of Cape Town’s management of Stormwater Impacts Policy (see footnote 10).
- Discourage and monitor unfavourable practises leading to the contamination of stormwater (such as the washing of surfaces containing oils and other chemicals);
- Require all future development to treat water quality and quantity at source, according to the criteria set out in the CoCT’s Management of Stormwater Impacts Policy.
- Prevent inappropriate land uses in identified flood prone areas (see Zone Map E3);
- Manage reed growth where it becomes problematic;
- Remove invasive alien vegetation (particularly along the Black River and within the green corridors along the water courses that flow from Table Mountain through Camps Bay) and restore indigenous riparian vegetation;
- Control stormwater quantities to prevent erosion and sedimentation of downstream channels;
- Consider introducing a nutrient stripping project at the WWTWs; and
- Carefully control groundwater abstraction rates to prevent e.g. intrusion of saline waters.

c) Pressures and Constraints

- Historic modification of rivers, with many rivers having been canalised;
- Development of formal and informal residential areas and industrial areas along rivers;
- Encroachment of natural river ecosystems by invasive alien vegetation (predominantly Port Jackson, Black Wattle and River Gum) and invasive alien fauna (especially banded tilapia);
- Alteration of river water levels and hence habitats through release of treated waste water (particularly affected is the Black River through release from the Athlone and Borchard’s Quarry WWTWs in District G);
- Increasing pollution and waste and effluent generation;
- Limited capacity of water bodies to absorb wastes from development without sustaining significant damages (e.g. the decline in water quality in the Salt River indicates that the receiving capacity for e.g. effluent released into its tributaries from the Athlone and Borchard’s Quarry WWTWs has been exceeded);
- Illegal dumping along some rivers resulting in pollution; and
- Poor service provision in informal areas, especially those located alongside rivers (e.g. Joe Slovo), leads to pollution of stormwater systems and rivers.

d) Opportunities

- Wetlands and rivers are able to improve the water quality of contaminated stormwater, within limits;
- Wetlands provide ecosystem services such as water purification, assimilation of contaminants, conveyance of stormwater and flood attenuation;
- Rivers and wetlands are able to provide flooding control;
• The Raapenberg Bird Sanctuary and Two Rivers Urban Park area is an important local resource for recreation and bird watching.
• Opportunities for watercourses and wetlands to be incorporated into the fabric of surrounding developments by considering the interface between the two in an aesthetic and environmentally friendly manner;
• Rivers provide fauna and flora habitat and can serve as corridors, connecting ecosystems;
• Rivers and wetlands provide amenity value (e.g. the Raapenberg Bird Sanctuary on the banks of the Black River); and
• Rivers and wetlands can convey, dilute and assimilate limited volumes of suitably treated effluent.

5.2.4 Coastal Areas

a) Status

The Atlantic coastline of District A is dominated by rocky shores, backed by steep mountain slopes that drop off into the sea. The rocky shoreline is interspersed with occasional sandy beaches, notably at Clifton and Camps Bay. South of Camps Bay, there is an undisturbed natural area with some recreational activities, mainly at the small sandy beaches. From Camps Bay northwards to Mouille Point is a mixed-use area (commercial, residential and recreation use activities) and the remainder of District A’s coastline comprises the Port of Cape Town (and V&A Waterfront) and consists of artificial shore protection and breakwaters. There are no dune systems left in District A, with only isolated embryo dunes in three locations. In light of future climate change and sea level rise predictions, floodprone areas (e.g. lower Woodstock) will have increased occurrence of storm events due to higher sea levels and increased storm energy. These factors combine to create significant safety issues for development in close proximity to the coast.

A Coastal Protection Zone, in which coastal processes such as erosion, accretion and aeolian activity can take place, has been delineated to act as a ‘buffer’ between dynamic coastal process and the built environment.

b) Management Priorities

• Maintain the south-western boundary of the urban edge at Bakoven/Oudekraal and prevent inappropriate development in or close to the sensitive coastal area;
• Maximise amenity opportunities, with minimum disturbance to the coastal environment and processes. Identified areas include the beaches along the Atlantic coastline (Camps Bay, Clifton) and the Sea Point promenade (potential to link with Milnerton);
• Avoid major new urban development infrastructure and bulk services investment in coastal areas that are vulnerable to coastal storm events and inundation (see Zone Map A2);
• Establish clear coastal management responsibilities and increase skills and capacity within the CoCT to ensure the effective management of the coast, for example at Paarden Eiland and Sea Point;
• Resolve issues of liability relating to development within the Coastal Protection Zone;

c) Pressures and Constraints
• Development along the coastline and the resulting modification of the coastal environment, particularly around Paarden Eiland, Table Bay harbour and the Atlantic Seaboard;
• Interference with coastal dynamics and processes has lead to increasing erosion, loss of amenity and tourism opportunities and increasing damage and risk to coastal infrastructure and property;
• Destruction and fragmentation of dune systems due to urbanisation, for example at Paarden Eiland and Granger Bay;
• Invasive alien vegetation (particularly Acacia) has impacted on embryo dunes at Koeelbaai;
• Global climate change resulting in an increasing likelihood of more frequent and more intense storm events and (in the longer term) sea level rise;
• Reduced freshwater inflow and sediment supply to the coastal system from the Salt River system;
• Polluting effluent discharges (industrial and domestic) and stormwater runoff; and
• Increasing ship traffic and the resulting increase in pollution, ballast exchange and dredge dumping.

d) Opportunities

• Functioning coastal systems decrease the need for, and costs of, coastal maintenance and facilitate recreational and tourism use;
• Amenity and tourism related opportunities provided by beaches and coastline along the Atlantic Seaboard;
• Sports and recreation activities (surfing etc.); and
• Specific sites along this coastline are popular for national and international competitions and events (e.g. Camps Bay).

5.2.5 Heritage and Cultural Resources

a) Status

Archaeological evidence testifies to a long history of human occupation in the Table Valley. The District includes the oldest settlement areas in Cape Town, namely, around the Company Gardens, the area between Buitengracht and Buitenkant streets and the early freeburgher farms Roodebloem (1661) and Zonnebloem (1707). A large portion of District A falls within the TMNP, which forms part of the Cape Floral Region Protected Areas World Heritage Site.

Heritage resources in District A are already largely impacted on due to the long history of post-colonial development in the area, and are under increasing pressure as a result of urban expansion.

b) Management Priorities

• Confirm and refine mapping of cultural landscapes and heritage resources;
• Formalise Urban Conservation Areas where applicable (e.g. within the City Bowl, Green Point, Sea Point, District Six, Woodstock, Salt River and Observatory, see Zone Map A4);
• Ensure that construction activities within heritage and conservation areas do not negatively impact on the historical character of the area;
- Preserve the qualities of the City Bowl, which exhibits a range of diverse character zones such as the Bo-Kaap, the Company Gardens, with associated institutional buildings and Justice Walk;
- Ensure that the historical buildings located on the edge of District Six (Harrington/Buitenkant St) towards Salt River are integrated when redeveloping the area;
- Treat sites and places with heritage value as possible development opportunities that can add value to the quality and sense of history of the townscape;
- Maintain the interface between the City and Table Mountain and avoid large structures that block views; and
- Maintain the green corridors extending from the mountain into the City (e.g. parks and public spaces located in the upper reaches of the City Bowl), including remnants of historic plantations.

c) Pressures and Constraints

- Increased urban development pressure, densification, industrialisation and construction of high rise buildings in the City Bowl, Woodstock, Sea Point, Green Point and V&A Waterfront areas, with increasing pressure on heritage landscapes, sites and their context;
- Increasing trend for commercial areas to encroach into sensitive heritage areas;
- Pressure in central sensitive heritage areas containing smaller houses, e.g. Bo-Kaap, Vredehoek and residential areas bordering on the National Park, to enlarge houses and increase density;
- Encroachment of development on mountain edge;
- Increasing tourism pressure, requiring further development and infrastructure provision; and
- Incomplete archaeological survey of many areas.

d) Opportunities

- Attractive and unique sense of place (e.g. Bo-Kaap, Vredehoek etc.);
- Tourism and job creation linked to the conservation and enhancement of historically valuable landscapes, e.g. historical town centre and suburbs; and
- Archaeological, palaeontological research.

5.2.6 Economic Resources

a) Status

Cape Town's CBD, located at the heart of District A, is the most important commercial and business area of Cape Town. District A also acts as a major draw card for national and international tourists. District A also has the second-highest number of industrial properties of all the districts in the CoCT and it incorporates the Port of Cape Town. District A is therefore an important area for economic opportunities in the CoCT in terms of commercial, industrial and tourism activities.

However, District A has virtually no natural economic resources. Sand used for building material is considered a limited economic resource and there are concerns regarding the limited availability of unexploited sand and gravel resources. This creates conflict between demands to exploit remaining resources and maintaining the integrity of the receiving environment in which these resources occur. The main issue with regards to mineral extraction in District A is the existing sterilization of economic mineral resources by urban
development (the sand resources in District A are underneath established urban areas, e.g. in the Pinelands area).

District A does not have any land with significant agricultural potential.

a) Management Priorities

- Facilitate mixed-use development where possible to provide more employment opportunities close to residential areas, thereby reducing the need for commuting;
- Prioritise investment in economic opportunities at commercial nodes and transport hubs, e.g. the Cape Town Station precinct, along Voortrekker Road;
- Develop skills development strategies and increase access to job opportunities through improved transportation networks; and
- Develop new infill residential and industrial areas within the urban edge (e.g. along Voortrekker Road, District Six, Culembourg and Wingfield).

b) Pressures and Constraints

- Limited remaining land in District A for new commercial or industrial development;
- In-migration and urbanisation have resulted from a lack of facilities, employment and services in rural areas and social and economic opportunities associated with Cape Town, which has put significant pressure on the City to supply additional housing and services. District A experiences some pressure in this regard both from the high and low-income sectors (on the Atlantic Seaboard and District Six areas, respectively); and
- The sand resources in District A are underneath established in urban areas (e.g. Pinelands) and are not accessible/exploitable.

5.2.7 Settlement Areas and Growth Pressures

a) Status

District A has the second-smallest population of the eight city districts, after District B. However, it comprises the main commercial and tourist area of the CoCT (CBD, City Bowl, Atlantic Seaboard, Port of Cape Town and V&A Waterfront) and some important industrial land parcels like Epping, Paarden Eiland and Ndabeni. The District includes some of the most affluent residential areas in the city (Atlantic Seaboard and areas within the City Bowl), as well as middle and lower income residential areas (parts of Woodstock, Salt River and Langa). Despite its proximity to employment opportunities, the District has relatively few informal settlements. The District has a scarcity of housing due to the topography and important environmental and tourism assets.

Development pressure within District A is focussed in the CBD where a number of high-rise residential and mix-use developments have been developed over recent years. Movement patterns within the District is characterised by increasing traffic congestion with high commuter traffic volumes into the CBD in the morning and the reverse during the afternoon peak period. Commuters also rely on public transport into and out of the CBD and pedestrian volumes within the CBD are significant.

District A, like the rest of the CoCT, is experiencing increasing urban infrastructure pressure, with capacity constraints in bulk water provision and reticulation as well as the wastewater reticulation systems.
b) Management Priorities

- Avoid development outside of the urban edge;
- Improve connectivity and mobility through an efficient movement network, including proposed route connections and/or extensions (e.g. Granger Bay Boulevard, Berkley Road extension, Liesbeek Parkway, 1st Avenue-Brooklyn, Aerodrome Road, Wingfield internal road network and Frans Conradie Road);
- Pursue investment in the Cape Town station precinct and for the re-development of transport linkages throughout the District;
- Implement extensive improvements in public transport services and encourage investment in integrated transport initiatives;
- Improve on the provision of public transport linkages to important commercial areas within the District, e.g. the City Bowl and Victoria Wharf, and industrial properties like Epping and Paarden Eiland;
- Enhance the reliability, safety and efficiency of public transport, with particular focus on the rail line, Integrated Rapid Transit routes and pedestrian and non-motorised transport;
- Combine improvements in public transport infrastructure with a general shift towards provision of mixed land use that is less car-dependant;
- Encourage pedestrian movement through the extension and improvement of non-motorised transport networks and related facilities, e.g. within the CBD, as well as between the CBD and the V&A Waterfront;
- Ensure a more equitable provision of housing within the District through encouragement of public sector investment;
- Facilitate the release and development of publicly-owned land parcels (e.g. District Six, Wingfield and Culemborg), ensuring a greater mix of land uses. Proposed developments must be sustainable with sufficient budget being made to ensure management of Critically Endangered Vegetation (e.g. in Public Open Spaces);
- Create an integrated urban environment by protecting and extending urban open spaces, e.g. the Sea Point promenade, Green Point Urban Park and Two Rivers Urban Parks;
- Invest in identified special places with high amenity value (urban, coastal and natural) including the Sea Point promenade, Atlantic Seaboard beaches and Two Rivers Urban Park; and
- Facilitate inclusion of biodiversity areas into protected and managed areas and investigate opportunities for their sustainable utilisation (e.g. for education, tourism, medicinal plant harvesting, recreation etc);
- Develop new infill residential and industrial areas within the urban edge (areas identified in the SDP include Voortrekker Road, District Six, Culembourg and Wingfield).

Pressures and Constraints

- In-migration and urbanisation resulting from a lack of facilities, employment and services in rural areas has put huge pressure on the City to supply housing and services.
- Scarcity of housing opportunities within District A and services and infrastructure are operating at capacity;
- Steep slopes along the Table Mountain chain and important environmental assets restrict available space for (new) development;
- Backlog in housing and service infrastructure provision;
- Increasing demands on limited transport services and infrastructure;
- Historic planning which resulted in segregated and inefficient settlement patterns (District Six); and
Lack of publicly owned land within the urban edge, which it makes it difficult for the CoCT to provide low cost housing in the district.

d) Opportunities

- Good existing transport infrastructure;
- Good service provision in most parts of the district; and
- Very scenic living environment, especially in the western (coastal) part of the district.

5.2.8 Pollution and Waste Management

a) Status

Increasing waste generation leads to cumulative contamination and pollution in the long term, as the receiving environment has limited capacity to assimilate and breakdown waste. Two landfills at Vissershok are permitted to receive hazardous and general waste, and a substantial extension to one of these sites managed by the CoCT has been authorised. Additionally, the City is rapidly running out of space for solid waste disposal and a new regional landfill site is urgently required. Even with the proposed new site, without interventions to minimise and recycle waste, the City will face an environmental and public health crisis.

Pollution and degradation, particularly of rivers and wetland systems within District A, is a critical issue. The rivers in the eastern part of District A have lost much of their natural riparian habitat and their environmental functioning has been seriously compromised. Rivers, Wetlands and Groundwater). Air pollution is also a problem in the district, especially in the CBD – an identified air pollution ‘hot spot’ as per the City’s Air Quality Management Plan.

b) Management Priorities

- Implement the strategies (including waste minimisation and re-cycling) contained in the Integrated Waste Management Policy (IWMP);
- Provide additional pump stations and bulk infrastructure (sewer and water reticulation);
- Improve service provision to informal settlements particularly in the Langa area (Joe Slovo);
- Control activities in and adjacent to the river and wetland buffer areas;
- Monitor and enforce industry’s compliance with air pollution standards; and
- Control illegal dumping and monitor and enforce landfill sites’ compliance with relevant environmental requirements;
- Reduce the frequency of overflows in the sewage conveyance system.

c) Pressures and Constraints

- Increasing population growth and in-migration into the City, in general, has placed increasing pressure on waste management;
- Increasing traffic volumes in the district contributes to the air pollution exceedances (particularly in the CBD);
- On-going challenges to address historic inequalities in service provision. Where areas are un- or under-serviced (e.g. Joe Slovo), dumping and the inappropriate use and pollution of rivers increases;
- Lack of funding for waste management services and infrastructure; and
- Power shortages leading to increased pollution (sewer overflows and rising sewers).
d) **Opportunities**

- Recycling initiatives can create economic opportunities; and
- Well-managed solid waste disposal and wastewater treatment reduces pressure on the receiving environment.
6 SDP AND EMF: PLANNING PACKAGE

6.1 Introduction

In order to facilitate alignment between environmental, planning and land use decision making, the following section includes a number of integrated decision making support tools. These tools include:

- The Environmental Impact Management (EIM) Zones - with recommended types of activities and decision guidelines;
- New Development Areas;
- Urban Restructuring Areas; and
- The consolidated SDP.

6.2 Environmental Impact Management Zones and Land Use Development Informants

Environmental Impact Management (EIM) zones have been identified using the best available information at the time. They comprise areas with homogenous or similar environmental attributes. These EIM zones are intended to guide and inform decisions regarding activities that require environmental authorisation and/or planning approval within these areas. They should be regarded as a basis for the possible future exclusion of certain activities listed in the NEMA EIA Regulations (2006) from the requirement for environmental authorisation.

The District Planning Office needs to be contacted for finer-scale maps that enable the placement of individual properties relative to the EIM zones.

The following tables should be read together with the accompanying EIM Zone maps. Each attribute which is mapped as an environmentally sensitive zone, has an accompanying table indicating the following:

- **Undesirable types of activities**: These are types of activities which are contrary to the desired state of the environment in a particular zone and should be discouraged.
- **Types of activities that may have a significant impact**: These are types of activities that could be considered in a particular zone, provided potential impacts resulting from the activity are adequately assessed, prior to approval, and adequate mitigation measures to limit and reduce the impacts are identified and implemented.
- **Types of activities that may not have a significant impact:** These are types of activities that are generally desirable and unlikely to cause impacts in a particular zone. However, these activities are still subject to legislative requirements in terms of NEMA and other relevant legislation, as well as impact management norms and standards such as implementation of an EMP.

Additionally, each table indicates relevant **policy and guideline documents** which should be consulted, and provides planning, land use and environmental decision guidelines, where appropriate.

**Important note:** The types of activities described in the EIM tables below are not the listed activities as contained in the National Environmental Management Act (NEMA) EIA Regulations (2006, as amended). In order to determine which activities will trigger the requirements for an Environmental Assessment process, reference must always be made to the NEMA EIA Regulations.

The need to undertake an environmental assessment in any of the environmental impact management zones listed below should be determined by:

a) Whether the proposed project includes one or more listed activities as identified in the EIA Regulations (2006, as amended);

b) Whether there is a request from the local authority to provide either a full environmental assessment or specific environmental information in order to have sufficient information to evaluate an application made in terms of the Land Use Planning Ordinance (Act 15 of 1985);

c) Whether there is likely to be any significant damage to or degradation of the environment, in which case an environmental assessment (or other precautionary steps as listed in section 28(3)) should be undertaken in terms of the Duty of Care Principle of NEMA, sections 28(1), (2) and (3).

Any person undertaking any activity that may cause damage or degradation to the environment is subject to the Duty of Care Principle in terms of NEMA, sections 28(1), (2) and (3).

NEMA (S 28(1)) requires that: *Every person who may cause significant … degradation of the environment must take reasonable measures to prevent such degradation from occurring …or, in so far as such harm to the environment is authorized by law or cannot reasonably be avoided … to minimize or rectify such … degradation of the environment.*

The Duty of Care Principle therefore may apply to any activity or land use, irrespective of whether it is included in the listed activities in the EIA Regulations (2006, as amended).

The measures required in terms of subsection (1) may include measures to –
a) investigate, assess and evaluate the impact on the environment;
b) inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment;
c) cease, modify or control any act, activity or process causing the pollution or degradation;
d) contain or prevent the movement of pollutants or the causant of degradation;
e) eliminate any source of the pollution or degradation; or
f) remedy the effects of the pollution or degradation.

The environmental attributes are grouped on a number of EIM Zone maps as follows:

<table>
<thead>
<tr>
<th>ZONE MAP NUMBER</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>A5</th>
<th>A6</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZONE MAP NAME</td>
<td>Hydrological Zone</td>
<td>Coastal and Dune Zone</td>
<td>Conservation and Biodiversity Priority Zone</td>
<td>Cultural and Recreational Resources Zone</td>
<td>Natural Resources Zone</td>
<td>Economic Resources Zone</td>
</tr>
<tr>
<td>ENVIRONMENTAL ATTRIBUTES</td>
<td>Flood Risk Areas</td>
<td>Coastal Protection Zone</td>
<td>Conservation and Biodiversity Areas</td>
<td>Cultural and Heritage Areas</td>
<td>Mineral Extraction Areas</td>
<td>Industrial and Commercial Areas</td>
</tr>
<tr>
<td></td>
<td>Flood Risk Area 1 (1:50 flood line)</td>
<td>Coastal Protection Zone</td>
<td>Conservation areas</td>
<td>Cultural landscapes</td>
<td>Priority mineral resources</td>
<td>Industrial areas</td>
</tr>
<tr>
<td></td>
<td>Flood Risk Area 2 (1:100 flood line)</td>
<td>Coastal Risk Area above the coastal edge</td>
<td>Critical Biodiversity Areas 1</td>
<td>Potential archaeological sites</td>
<td></td>
<td>Commercial areas</td>
</tr>
<tr>
<td></td>
<td>Flood Risk Area 3</td>
<td>Sensitive dune fields</td>
<td>Critical Biodiversity Areas 2</td>
<td>Other significant heritage resource areas</td>
<td></td>
<td>Infrastructure and Utilities Areas</td>
</tr>
<tr>
<td></td>
<td>Rivers and Wetlands</td>
<td>Dune Areas</td>
<td>Critical Ecological Support Areas</td>
<td>Grade 3 heritage sites</td>
<td></td>
<td>Infrastructure servitudes</td>
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<tr>
<td></td>
<td>Rivers and associated buffers</td>
<td>Aquifers</td>
<td>Other Natural Vegetation</td>
<td>Scenic Routes</td>
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<td></td>
<td>Wetlands and associated buffers</td>
<td>Moderately productive aquifers</td>
<td></td>
<td>Public Open Spaces</td>
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<td></td>
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<td></td>
<td>Structuring Open Spaces</td>
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</tbody>
</table>
### 6.2.1 Hydrological Zone

#### Table 6.2: Flood Risk Areas

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood Risk Area 1</td>
<td>Any activity which impedes the hydrological functioning and flooding of a river.</td>
<td>Conservation related facilities or infrastructure.</td>
<td>Conservation activities.</td>
<td>City of Cape Town’s Floodplain and River Corridor Management Policy (2009)</td>
</tr>
<tr>
<td></td>
<td>Bulk infrastructure, including Waste Water Treatment Works (WWTWs), pump stations and power generation, electrical substations.</td>
<td>All excavation and mining related activities.</td>
<td>Public open space areas with appropriate low-impact recreation activities.</td>
<td>City of Cape Town’s Management of Stormwater Impacts Policy.</td>
</tr>
<tr>
<td></td>
<td>Solid and liquid waste disposal.</td>
<td>Essential engineering and utility services relating to outfall sewers, stormwater systems and underground services.</td>
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<td></td>
<td>Telecommunication exchanges and transmitters.</td>
<td>Transmission towers</td>
<td></td>
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<td></td>
<td>Manufacturing, storage, treatment, transportation or handling of hazardous substances.</td>
<td>On-site sewage treatment (conservancy tanks).</td>
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<tr>
<td></td>
<td>Any permanent building with foundations such as residential, business, educational, community and public facilities and institutions e.g. prisons, military bases, police stations, fire stations, hospitals, old age homes.</td>
<td>Bank protection, flow diversion structures and earthworks (e.g. dams weirs, walls, levees).</td>
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<td></td>
<td>Informal residential area.</td>
<td>Parking areas.</td>
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<td></td>
<td>Railway stations, modal interchanges or bus depots.</td>
<td>Pedestrian walkways.</td>
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<td></td>
<td>Any structure that would pollute the river if it was flooded.</td>
<td>Agricultural and Agri-industrial activities.</td>
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<td></td>
<td>The infilling or depositing of any material into a watercourse, in stream dam or wetland.</td>
<td>Resorts and camping/caravan sites.</td>
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<td></td>
<td></td>
<td>Sustainable harvesting of natural resources.</td>
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<td></td>
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<td>Sports fields and picnic areas.</td>
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</tbody>
</table>

**NOTE:** All activities listed as undesirable are prohibited in terms of the Floodplain and River Corridor Management Policy (2009).
<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Abattoirs.</td>
<td>All excavation and mining related activities.</td>
<td>Public open space areas with appropriate low-impact</td>
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<td></td>
<td>Industrial activities.</td>
<td>Roads and railways.</td>
<td>recreation activities.</td>
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<td></td>
<td>Service stations.</td>
<td>Transmission towers and rooftop base stations</td>
<td>Resorts and camping/caravan sites.</td>
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<td></td>
<td>Bulk infrastructure, including</td>
<td>Formal Residential development (which complies with</td>
<td>Essential engineering and utility services relating to</td>
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<td></td>
<td>WWTWs, pump stations and</td>
<td>specific conditions for development within this</td>
<td>outfall sewers, stormwater systems and</td>
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<td></td>
<td>power generation, electrical</td>
<td>zone*).</td>
<td>underground services.</td>
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<td></td>
<td>substations.</td>
<td>Bank protection, flow diversion</td>
<td>On-site sewage treatment</td>
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<td></td>
<td>Solid waste disposal sites.</td>
<td>structures and earthworks (e.g. dams, weirs, walls,</td>
<td>(conservancy tanks).</td>
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<td></td>
<td>Telecommunication exchangers</td>
<td>levees, infilling)</td>
<td>Parking areas.</td>
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<td></td>
<td>and transmitters.</td>
<td>Tourism facilities (which comply with specific</td>
<td>Agricultural activities.</td>
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<td></td>
<td>Manufacturing, storage,</td>
<td>conditions for development within this zone*).</td>
<td>Sustainable harvesting of natural</td>
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<td></td>
<td>treatment, transportation or</td>
<td>Commercial development (which complies with</td>
<td>resources.</td>
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<td>handling of hazardous</td>
<td>specific conditions for development within this</td>
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<td>substances.</td>
<td>zone*).</td>
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<td></td>
<td>Community and public facilities</td>
<td>Tourism facilities (which comply with specific</td>
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<td></td>
<td>(including hospitals, old age</td>
<td>conditions for development within this zone*).</td>
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<td>homes, fire stations, educational</td>
<td>Commercial development (which complies with</td>
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<td></td>
<td>facilities etc.)</td>
<td>specific conditions for development within this</td>
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<td></td>
<td>Informal residential areas</td>
<td>zone*).</td>
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<tr>
<td></td>
<td>Railway stations or bus depots.</td>
<td>Renewable power generation.</td>
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<td></td>
<td>Any structure that would pollute</td>
<td>Agri-industrial activities.</td>
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<td>the river if it was flooded.</td>
<td>Resorts</td>
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<td></td>
<td>Establishment of cemeteries.</td>
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<td></td>
<td>Abattoirs.</td>
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<td></td>
<td>Industrial activities.</td>
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<td></td>
<td>Service stations.</td>
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<tr>
<td>Flood Risk Area 3</td>
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<td></td>
<td>#Activities can be considered in conjunction with the implementation of appropriate engineering solutions to localised potential flooding.</td>
<td>#Activities can be considered in conjunction with the implementation of appropriate engineering solutions to localised potential flooding.</td>
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Flood Risk Area 2
These constitute areas within the 1:100 flood line, i.e. floods of this magnitude happen on average once every 100 years. The zone is indicated on Zone Map A1.

Activities can be considered in conjunction with the implementation of appropriate engineering solutions to localised potential flooding.
<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy documents for environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td>as flooding may originate from groundwater, collection of stormwater or runoff in low lying areas. They are indicated on Zone Map A1.</td>
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</tbody>
</table>

**Planning and Environmental Decision Guidelines:**

Important issues to be considered in these zones include: stormwater quality and quantity management, catchment management, health and safety issues, biodiversity and rehabilitation, visual and heritage issues.

**EIA and Land Use Requirements**

- A detailed EMP must be drawn up and implemented for all activities approved in these zones, in accordance with the City of Cape Town’s specifications for EMPs.
- A stormwater analysis is required to determine the extent and scale of activities that are or are not permitted.
- Although some agricultural activities may be permitted within the flood risk areas, the nature of the impacts and appropriate mitigation must be determined in the EIA process, and must be shown to be acceptable prior to approval (i.e. they must not pollute water resources or increase flood risk).
- No agricultural activities should be approved within the 1:2 year flood line.
- Undesirable activities should only be authorised under exceptional circumstances, subject to compelling motivation (e.g. where there is an existing right).
- New development within the 1:100 year flood line should be subject to formal acknowledgement by the owner of flood risk, and is only permissible where there are existing rights.
- Where facilities associated with sports fields, golf courses or picnic areas have been conditionally permitted in the 1:50 year zone, floor levels must be above the 1:50 year flood line.

**Other Compliance Requirements**

- Authorisation of the activities in these zones must be in compliance with the National Water Act 36 of 1998.
- Authorisation of the activities in these zones must be in compliance with the CoCT’s Floodplain and River Corridor Management Policy.
- Agricultural activities close to water bodies must comply with the conditions contained within the Conservation of Agricultural Resources Act 43 of 1983 pertaining to rivers and wetlands.
- *Any structural developments in the 1:100 year flood line must comply with the conditions as stipulated by City of Cape Town Catchment Management and the Department of Environmental Affairs & Development Planning with regards to floor heights etc.*

**Best Practice**

- All new buildings and developments along rivers should be orientated towards and interface with the river, where possible, and the principles of Water Sensitive Urban Design should be applied.
### Table 6.3: Rivers and Wetlands: Ecological Buffer Areas

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
</table>
| Rivers and associated buffer areas | - Any land use or activity that will have an impact on the vegetation cover or hydrological functioning of the buffer area, including:  
  - Industrial development;  
  - Mining activities;  
  - Commercial development;  
  - Residential development;  
  - Community and public facilities;  
  - Utilities and infrastructure;  
  - Agricultural activities; and  
  - Transport systems. | - Conservation related facilities or infrastructure.  
- Essential engineering and utility services relating to outfall sewers and storm water systems.  
- Essential road, rail, pipeline and cable crossings and bridges.  
- Sports fields and picnic areas.  
- Resorts and camping/caravan sites.  
- Sustainable harvesting of natural resources. | - Conservation activities.  
- Public open space areas with appropriate low-impact recreation activities. | - City of Cape Town’s Floodplain and River Corridor Management Policy (2009)  
- City of Cape Town’s Policy on Minimising the Impact of Stormwater from Urban Development on Receiving Waters (2008) |
| Wetlands and associated buffers | - Any land use or activity that will have an impact on the vegetation cover or hydrological functioning of the buffer area including:  
  - Industrial development;  
  - Mining activities;  
  - Business development;  
  - Residential development;  
  - Community and public facilities;  
  - Utilities and infrastructure;  
  - Agricultural activities; and  
  - Transport systems. | - Conservation related facilities or infrastructure.  
- Essential engineering and utility services relating to outfall sewers and stormwater systems.  
- Essential road, rail, pipeline and cable crossings and bridges.  
- Sports fields and picnic areas.  
- Resorts and camping/caravan sites.  
- Sustainable harvesting of natural resources. | - Conservation activities.  
- Public open space areas with appropriate low-impact recreation activities. |
Important issues to be considered in these zones include: stormwater quality and quantity management, catchment management, infill and illegal dumping, health and safety issues, biodiversity and rehabilitation, visual and heritage issues.

**EIA and Land Use Requirements**
- Undesirable activities should not be authorised unless there are exceptional circumstances and subject to compelling motivation.
- A detailed EMP must be drawn up and implemented for all activities approved in these zones, in accordance with the City of Cape Town’s specifications for EMPs.
- Obtain input from the City of Cape Town Catchment Management Department where development is contemplated on or near wetlands.

**Other Compliance Requirements**
- Authorisation of the activities in these zones must be in compliance with the National Water Act 36 of 1998.
- Authorisation of the activities in these areas must be in compliance with the City of Cape Town’s Floodplain and River Corridor Management Policies.
- For any development within 100 m of a river or wetland; buffer widths must be confirmed in accordance with the City of Cape Town’s Floodplain and River Corridor Management Policy, prior to the approval of the activity.

### Table 6.4: Aquifers.

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
</table>
| **Moderately productive aquifers**

This zone includes moderately productive intergranular, fractured and fractured-and-intergranular aquifers and is indicated on Zone Map A1. | N/A | All activities can be considered in this zone, however the following activities may have a significant impact:
- Manufacturing, storage, treatment, transportation or handling of hazardous substances.
- Solid and liquid waste disposal.
- WWTWs.
- Mining activities.
- Establishment of cemeteries.
- Water abstraction.
- Industrial activities.
- Agricultural activities. | Conservation activities.
- Conservation related facilities or infrastructure.
- Engineering and utility services (excluding waste disposal and WWTW).
- Public open space areas with appropriate recreation activities.
- Residential development.
- Commercial development.
- Tourism facilities.
- Light industrial activities.
- Roads, rail, pipelines and cables.
- Transmission towers and rooftop base stations.
- Sustainable harvesting of natural resources. | DWAF’s Guideline for the Assessment, Planning and Management of Groundwater Resources in South Africa (2008)
<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning and Environmental Decision Guidelines:</td>
<td>Environmental attributes</td>
<td>Important issues to be considered in these zones include: groundwater contamination and sustainable water abstraction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EIA and Land Use Requirements</td>
<td></td>
<td>Types of activities that may have a significant impact (orange category) must demonstrate that there will be no significant impacts on aquifer water quality. Alternative locations (sites) for such activities must be considered in the EIA process.</td>
<td></td>
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<td></td>
<td></td>
<td>Activities abstracting large volumes of water from major aquifers must demonstrate that such abstraction is sustainable.</td>
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<td></td>
<td></td>
<td>An EMP must be drawn up and implemented for all activities approved in this zone, in accordance with the City of Cape Town’s specifications for EMPs.</td>
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<tr>
<td></td>
<td></td>
<td>Aquifer recharge areas and sole-source aquifers should be protected from potential sources of pollution.</td>
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</tr>
<tr>
<td>Other Compliance Requirements</td>
<td></td>
<td>Activities in this zone must be in compliance with the National Water Act 36 of 1998.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Zone Map A1: Hydrological Zone
### 6.2.2 Coastal and Dune Zone

#### Table 6.5: Coastal Protection Area

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
</table>
| Coastal Protection Zone   | • Any activity which will impact on the coastal environment and natural coastal processes; including:  
|                           |   • Bulk infrastructure, including WWTWs and power generation;  
|                           |   • Manufacturing, storage, treatment, transportation or handling of hazardous substances;  
|                           |   • Any permanent structure with foundations, including residential and tourism uses as well as canals, weirs and dams;  
|                           |   • All excavation and mining related activities and infrastructure;  
|                           |   • Transmission towers and rooftop base stations;  
|                           |   • Cemeteries;  
|                           |   • Agricultural activities; and  
|                           |   • Outdoor advertising.  
|                           | • Any other activity entailing clearance of indigenous vegetation within 100 m of the high water mark. | • Tidal pools; embankments; stabilizing walls.  
|                           |                                                   | • Infrastructure associated with marine and safety uses (e.g. lifesaving).  
|                           |                                                   | • Essential engineering and utility services (outfalls).  
|                           |                                                   | • Pedestrian walkways and trails.  
|                           |                                                   | • Landscaping.  
|                           |                                                   | • Environmental educational facilities.  
|                           |                                                   | • Tourism facilities at identified nodes.  
|                           |                                                   | • Renewable energy.  
|                           |                                                   | • Conservation activities.  
|                           |                                                   | • Public open spaces with appropriate low impact recreation activities.  
|                           |                                                   | • Essential activities required for the environmental management of the coastal area.  
|                           |                                                   | • Sustainable harvesting of natural resources.  
| Coastal flood risk areas  | • These are areas that have been developed in the past, but which have been identified as being vulnerable to flooding. In most cases, they are located outside (inland of) the coastal edge. However, there are some pockets of developed | | | • D.EA&DPs Coastal Zone Policy  
|                           | land.                                            | | | • Draft Delineation of the Proposed Coastal Protection Zone for the City of Cape Town: Draft Report (2009)  
|                           |                                                   | | | • City of Cape Town Coastal Development Guidance for Cape Town Coastline into the Future (2007)  
|                           |                                                   | | | • National Policy for Sustainable Coastal Development in South Africa  
|                           |                                                   | | | • Draft Coastal Zone Policy for the Western Cape  
|                           |                                                   | | | • City of Cape Town Energy and Climate Change Strategy  
|                           |                                                   | | | • A Climate Change Strategy and Action Plan for the Western Cape, South Africa (2008)  

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12 Refer to the Delineation of the Proposed Coastal Protection Zone for the City of Cape Town: Draft Report 2009
Environmental attributes | Undesirable types of activities | Types of activities that may have a significant impact | Types of activities that may not have a significant impact | Relevant policy and guideline documents for environmental management
---|---|---|---|---
or semi-developed land on the seaward side of the coastal edge which would also qualify as coastal flood risk areas.  
- The City Of Cape Town will be developing a policy for management of the coastal flood risk areas. In all cases, a precautionary approach must be adopted and emergency planning for flood and storm events undertaken.

Planning and Environmental Decision Guidelines:

**Important issues to be considered in these zones include:** sea level rise, storm events and coastal erosion, vegetation, health and safety issues, access to the coastal zone, pollution, dunes and sand movement, risk and liability issues.

**EIA and Land Use Requirements**
- The coastal urban edge line should guide the determination of the seaward boundary of urban development.
- Development inside the Coastal Protection Zone can be considered in developed areas, where existing rights exist. Liability issues regarding such development must be resolved by the City prior to approval.
- The Coastal Risk Area outside of the coastal edge should be considered as "no-go" areas for any type of development, excepting at strategic coastal nodes, as identified by the City of Cape Town.
- Development of coastal nodes must consider the functioning of the coastal ecological corridor in the EIA and implement measures to retain this functioning.
- Appropriate emergency planning must be developed for any development within the coastal protection zone, including flood warnings, evacuation procedures and routes.
- An EMP must be drawn up and implemented for all activities approved in this zone, in accordance with the City of Cape Town’s specifications for EMPs.

**Other Compliance Requirements**
- Authorisation of the activities in this zone must be in compliance with the National Environmental Management: Integrated Coastal Management Act 24 of 2008.
- Authorisation of the activities in this zones must be in compliance with the Draft Delineation of the Proposed Coastal Protection Zone for the City of Cape Town: Draft Report 2009

**Table 6.6: Coastal Dune Areas**

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
</table>
| **Sensitive dune fields**  
This zone constitutes sensitive dune fields, including embryo, linear, parabolic, sand sheet and transverse dunes. Locations of these different dune types are indicated on Zone Map | Activities involving excavation and mining. 
- Activities restricting the natural movement of sand. 
- Activities which harden the surface and stabilise the dunes. 
- Activities which result in high traffic (pedestrian and vehicular) | Pedestrian walkways. 
- Landscaping associated with coastal and dune management. | Conservation activities. 
- Public open spaces with appropriate low impact recreation activities. 
- Essential activities required for the environmental management of the coastal and dune areas. | D:EA&DPs Coastal Zone Policy 
- City of Cape Town Coastal Zone Policy 
- City of Cape Town Coastal Development Guidance for Cape Town Coastline into the Future. 
- National Policy for Sustainable Coastal Development in South Africa...
### Environmental attributes

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2.</td>
<td>activity.</td>
<td></td>
<td></td>
<td>Africa</td>
</tr>
<tr>
<td></td>
<td>● Any other activity entailing clearance of indigenous vegetation within 100m of the high water mark.</td>
<td></td>
<td></td>
<td>● Draft Coastal Zone Policy for the Western Cape.</td>
</tr>
</tbody>
</table>

### Planning and Environmental Decision Guidelines:

**EIA and Land Use Requirements**
- This should, in principle, be regarded as a “no-go” area and no further development in this zone should be allowed, without a detailed assessment of the impacts on the dune system.
- Undesirable activities should not be authorised except under exceptional circumstances and subject to compelling motivation.
- An EMP must be drawn up and implemented for all activities approved in this zone, in accordance with the City of Cape Town’s specifications for EMPs.

**Other Compliance Requirements**
- Authorisation of the activities in this zones must be in compliance with Draft Integrated Coastal Management Bill, to be promulgated in 2009
- Authorisation of the activities in this zones must be in compliance with the Draft Delineation of the Proposed Coastal Protection Zone for the City of Cape Town: Draft Report 2009
Zone Map A2: Coastal and Dune Zone
### 6.2.3 Conservation and Biodiversity Priority Zone

**Table 6.7: Conservation and Biodiversity Areas**

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
</table>
| **Conservation Areas**   | • Any land use or activity that will have an impact on the vegetation cover or ecological functioning of the area, including:  
  - Manufacturing, storage, treatment, transportation or handling of hazardous substances.  
  - Solid and liquid waste disposal.  
  - Industrial activities.  
  - Residential and commercial development.  
  - All excavation and mining related activities.  
  - Establishment of cemeteries.  
  - Abattoirs.  
  - Agricultural and agri-industrial activities.  
  - Outdoor advertising. | • Tourism and hospitality facilities.  
• Environmental education facilities.  
• Essential engineering and utility services.  
• Institutional activities (museums etc.)  
• Parking areas and offices (related to conservation activities).  
• Transmission towers and rooftop base stations.  
• Any other activity entailing clearance of 3 hectares or more of critically endangered indigenous vegetation. | • Conservation activities.  
• Activities necessary for the management of the conservation area/reserve.  
• Hiking trails and walks.  
• View points for e.g. bird watching. | • The Identification and Prioritisation of a Biodiversity Network for the City of Cape Town  
• City of Cape Town’s Natural Interface Study: Veldfire Planning Guidelines (2004)  
• DEAD&DP’s Guideline for Involving Biodiversity Specialists in EIA Processes (2005)  
• The Fynbos Forum’s Guidelines for Environmental Assessment in the Western Cape (2005)  
• City of Cape Town BioNet: Terrestrial Systematic Conservation Plan Re-Analysis: Methods and Results (2008)  
• A Climate Change Strategy and Action Plan for the Western Cape, South Africa (2008) |
<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Biodiversity Areas 1</td>
<td>• Any land use or activity that will have an impact on the vegetation cover or ecological functioning of the area, including:  - Manufacturing, storage, treatment, transportation or handling of hazardous substances.  - Solid and liquid waste disposal.  - Bulk infrastructure including WWTWs and power generation.  - Industrial and agric-industrial activities.  - Residential and commercial development.  - All excavation and mining related activities.  - Establishment of cemeteries.  - Abattoirs.  - Outdoor advertising.</td>
<td>• Conservation related facilities or infrastructure.  • Essential roads, rail, pipelines and cables.  • Essential engineering and utility services.  • Tourism facilities.  • Hiking trails and walks.  • Environmental education facilities.  • Sustainable harvesting of natural resources.  • Any other activity entailing clearance of critically endangered indigenous vegetation.  • Agricultural activities (outside the urban edge).</td>
<td>• Conservation activities  • Urban open space areas with appropriate low-impact recreation activities.</td>
<td></td>
</tr>
</tbody>
</table>

Critical Biodiversity Areas 2 (Restorable Irreplaceable Sites) | • Any land use or activity that will have an impact on the vegetation cover or ecological functioning of the area, including:  - Manufacturing, storage, treatment, transportation or handling of hazardous substances.  - Solid and liquid waste disposal.  - Bulk infrastructure including WWTWs and power generation.  - Industrial and agric-industrial activities.  - Residential and commercial development. | • Conservation related facilities or infrastructure.  • Essential roads, rail, pipelines and cables.  • Essential engineering and utility services.  • Tourism facilities.  • Hiking trails and walks.  • Environmental education facilities.  • Sustainable harvesting of natural resources.  • Any other activity entailing clearance of critically endangered indigenous vegetation. | • Conservation activities  • Urban open space areas with appropriate low-impact recreation activities. |
<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>– All excavation and mining related activities.</td>
<td>• Agricultural activities (outside the urban edge).</td>
<td>• Conservation and restoration activities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Establishment of Cemeteries.</td>
<td>• Conservation related facilities or infrastructure.</td>
<td>• Urban open space areas with appropriate low-impact recreation activities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Abattoirs.</td>
<td>• Essential road, rail, pipelines and cables.</td>
<td>• Pedestrian walkways and trails.</td>
<td></td>
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<tr>
<td></td>
<td>– Outdoor advertising.</td>
<td>• Essential engineering services relating to tourism facilities.</td>
<td>• Tourism facilities.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Transmission towers and rooftop base stations.</td>
<td>• Sustainable harvesting of natural resources.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Any other activity that is in keeping with the existing land use.</td>
<td>• Any other activity that is in keeping with the existing land use.</td>
<td></td>
</tr>
<tr>
<td>Critical Ecological Support Areas</td>
<td>• Any land use or activity that will change the existing land use and /or harden the surface of the site, including:</td>
<td>• Agricultural activities (outside the urban edge).</td>
<td>• Conservation and restoration activities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Manufacturing, storage, treatment, transportation or handling of hazardous substances.</td>
<td>• Conservation related facilities or infrastructure.</td>
<td>• Urban open space areas with appropriate low-impact recreation activities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Solid and liquid waste disposal.</td>
<td>• Essential road, rail, pipelines and cables.</td>
<td>• Pedestrian walkways and trails.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Bulk infrastructure including WWTW and power generation.</td>
<td>• Essential engineering services relating to tourism facilities.</td>
<td>• Tourism facilities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Higher-density residential development.</td>
<td>• Transmission towers and rooftop base stations.</td>
<td>• Sustainable harvesting of natural resources.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Industrial activities.</td>
<td>• Any other activity that is in keeping with the existing land use.</td>
<td>• Any other activity that is in keeping with the existing land use.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Mining related activities.</td>
<td>• Conservation related facilities or infrastructure.</td>
<td>• Urban open space areas with appropriate low-impact recreation activities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Establishment of Cemeteries.</td>
<td>• Essential road, rail, pipelines and cables.</td>
<td>• Pedestrian walkways and trails.</td>
<td></td>
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<tr>
<td></td>
<td>– Abattoirs.</td>
<td>• Essential engineering services relating to tourism facilities.</td>
<td>• Tourism facilities.</td>
<td></td>
</tr>
<tr>
<td>Other Natural Vegetation</td>
<td>• Manufacturing, storage, treatment, transportation or handling of hazardous substances.</td>
<td>• Conservation related facilities or infrastructure.</td>
<td>• Urban open space areas with appropriate low-impact recreation activities.</td>
<td></td>
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<tr>
<td></td>
<td>• Industrial activities.</td>
<td>• Essential road, rail, pipelines and cables.</td>
<td>• Pedestrian walkways and trails.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Essential engineering services relating to tourism facilities.</td>
<td>• Tourism facilities.</td>
<td></td>
</tr>
</tbody>
</table>

**Other Natural Vegetation**

This zone encompasses other natural vegetation sites that do not fall into:

- Manufacturing, storage, treatment, transportation or handling of hazardous substances.
- Industrial activities.
## Environmental attributes

<table>
<thead>
<tr>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for management</th>
</tr>
</thead>
<tbody>
<tr>
<td>the categories discussed above. They are indicated on Zone Map A3.</td>
<td>- Mining related activities.</td>
<td>- relating to tourism facilities. - Pedestrian walkways and trails - Tourism facilities. - Institutional activities. - Residential and commercial development. - Agricultural activities. - Transmission towers and rooftop base stations. - Establishment of cemeteries. - Sustainable harvesting of natural resources. - Any other activity entailing clearance of critically endangered indigenous vegetation.</td>
<td></td>
</tr>
<tr>
<td>Environmental attributes</td>
<td>Undesirable types of activities</td>
<td>Types of activities that may have a significant impact</td>
<td>Types of activities that may not have a significant impact</td>
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</tbody>
</table>
Zone map A3: Conservation and Biodiversity Zone
### 6.2.4 Cultural and Recreational Resources Zone

#### Table 6.8: Cultural and Heritage Areas

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table Mountain National Park</strong>&lt;br&gt;The park contains (UNESCO natural) heritage and archaeological sites. It is shown on Zone Map A4.</td>
<td>• Comply with the SANParks’ Table Mountain National Park Conservation Development Framework.</td>
<td></td>
<td></td>
<td>• D:E&amp;A&amp;DP’s Guideline for Involving Heritage Specialists in EIA Processes (2005) &lt;br&gt;• D:EAD&amp;DP’s Guideline for Involving Visual Specialists in EIA Processes (2005) &lt;br&gt;• D:E&amp;A&amp;DP’s EIA Guidelines Series: Guideline for the Management of Development on Mountains, Hills and Ridges of the Western Cape (2002) &lt;br&gt;• City Of Cape Town Scenic Routes Management Plan &lt;br&gt;• City Of Cape Town Heritage Resources Strategy</td>
</tr>
<tr>
<td><strong>Robben Island</strong>&lt;br&gt;Robben Island is a declared UNESCO world heritage site. It is indicated on Zone Map A4.</td>
<td>• Comply with the Robben Island Integrated Conservation Management Plan.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Urban Conservation / Heritage areas</strong>&lt;br&gt;This zone includes existing and proposed urban conservation / heritage areas. It is shown on Zone Map A4. Urban conservation areas generally contain a concentration of Grade 2 and Grade 3 Heritage Sites.</td>
<td>• Any alterations, additions or new structures unsympathetic to protected buildings or the general character of area. &lt;br&gt;• Mining related activities and infrastructure. &lt;br&gt;• Industrial activities.</td>
<td>• Dependent on specific area. Suitable activities should be congruent and sympathetic to landscape / townscape. &lt;br&gt;• Transmission towers and base stations. &lt;br&gt;• Institutional facilities (education, museums). &lt;br&gt;• Tourism and hospitality facilities.</td>
<td>• Residential and commercial activities that are in keeping with the character of the area. &lt;br&gt;• Sub-division and densification that is not materially changing the character of the area. &lt;br&gt;• Engineering and utility services. &lt;br&gt;• Essential road, rail, pipelines and cables. &lt;br&gt;• Restoration and conservation of historical buildings and infrastructure. &lt;br&gt;• Public open space.</td>
<td></td>
</tr>
</tbody>
</table>

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13 Please note that cultural landscapes, potential archeological areas and other heritage areas have been mapped based on the best available data and have not been refined, peer-reviewed or ground-truthed.
## Environmental attributes

### Special areas

This zone includes existing and proposed special areas. A special area is an area of contextual heritage significance in which specified local design controls apply. These design controls are specific to that special area. They are indicated on Zone Map A4.

- Any alterations, additions or new structures unsympathetic to protected buildings or the general character of area.
- Mining related activities and infrastructure.
- Industrial activities.

### Forcéd Removal Sites

This includes areas that became vacant after communities were forcibly removed in terms of the Group Areas Act. It is indicated on Zone Map A4. This zone includes District Six and other areas not indicated on the map.

- Any development prior to consultation with groups that were affected by the forced removals.
- Creation of spaces or structures serving as memorials of the forced removals at the sites.
- Residential development.

### Undesirable types of activities

- Any alterations, additions or new structures unsympathetic to protected buildings or the general character of area.
- Mining related activities and infrastructure.
- Industrial activities.

### Types of activities that may have a significant impact

- Dependent on specific area. Suitable activities should be congruent and sympathetic to landscape / townscape.
- Transmission towers and base stations.
- Institutional facilities (education, museums).
- Tourism and hospitality facilities.

### Types of activities that may not have a significant impact

- Residential and commercial activities that are in keeping with the character of the area.
- Sub-division and densification that is not materially changing the character of the area.
- Engineering and utility services.
- Essential road, rail, pipelines and cables.
- Restoration and conservation of historical buildings and infrastructure.
- Public open space.

### Relevant policy and guideline documents for environmental management

14 Melanie Atwell pers comm. 2009
### Environmental attributes

### Undesirable types of activities

- Any development outside the urban edge.
- All excavation and mining related activities and infrastructure.
- Essential engineering services and infrastructure.
- Tourism and hospitality facilities.
- Institutional and educational facilities.
- Special coastal node development.
- Sustainable harvesting of natural resources.
- Bulk infrastructure and energy generation (including renewable energy).

### Types of activities that may have a significant impact

- Conservation activities.
- Public open space.
- Viewing sites.

### Types of activities that may not have a significant impact

- N/A

### Relevant policy and guideline documents for environmental management

#### Potential archaeological sites / burial areas

This zone includes areas of archaeological value or potential and areas of high probability of finding burials. It is indicated on Zone Map A4.

#### Scenic Routes

Atlantic Seaboard / coastal road. These are indicated on Zone Map A4.

#### Planning and Environmental Decision Guidelines:

- Activities which compromise or restrict views.
- Activities inconsistent with the landscape / townscape.
- Outdoor advertising.
- Dependent on section of road. Suitable activities should be congruent and sympathetic to landscape / townscape.

### Table 6.9: Public Open Spaces

Important issues in these zones include: archaeological, heritage, visual and architectural/landscaping issues.

**EIA and Land Use Requirements**
- Scenic routes should be protected.

**Other Compliance Requirements**
- Authorisation of the activities in these zones must be in compliance with the requirements in the National Heritage Resources Act 25 of 1999.

**Best Practice**
- A full Heritage Impact Assessment is recommended for proposed development in any of the above areas.
<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy documents for environmental management</th>
</tr>
</thead>
</table>
| Structuring Open Spaces  | - Waste disposal activities (including WWTW).  
- Mining activities.  
- Industrial activities.  
- Residential development. | - * Limited commercial activities.  
- Institutional activities (museums, churches etc.).  
- Tourism facilities.  
- Establishment of cemeteries.  
- Sustainable harvesting of natural resources.  
- Transmission towers and rooftop base stations.  
- Outdoor advertising.  
- Small-scale urban agricultural activities. | - Conservation related facilities or infrastructure.  
- Public open space areas with appropriate recreation activities.  
- Essential engineering services relating to outfall sewers and storm water systems.  
- Road, rail, pipeline and cable crossings and bridges.  
- Landscaping. | - City of Cape Town’s CMOSS Strategy |

**Planning and Environmental Decision Guidelines:**

*Important issues in these zones include: health and safety issues, access, heritage and visual issues, stormwater and biodiversity management.*

**EIA and Land Use Requirements**

- Avoid development outside of the urban edge.
- *The only commercial activities to be considered include small cafes, kiosks and restaurants where appropriate.
- Undesirable activities should not be authorised except under exceptional circumstances and subject to compelling motivation.
- Local communities must be consulted in the removal or redevelopment of public open spaces.

**Other Compliance Requirements**

- Illegal dumping and pollution should be strictly monitored within these areas.
- Authorisation of the activities in these zones must be in compliance with the City of Cape Town Outdoor Advertising and Signage By-Law, 2001.
- Authorisation of the activities in these zones must be in compliance with the City of Cape Town By-Law Related to Streets, Public Places and the Prevention of Nuisances, 2004.

**Best Practice**

- All development adjacent to open spaces should be orientated towards the open space to encourage the use and passive surveillance of these areas.
- Safety and security should be considered in the upgrading, landscaping or development of public open spaces.
- Where feasible, opportunities for low impact sustainable use of open spaces, by local communities, should be considered (e.g. small scale urban agriculture).
### 6.2.5 Natural Economic Resources Zone

**Table 6.10: Mineral Resource Areas**

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
</table>
| Priority Mineral Resource areas | • Mining activities extending below the water table.  
• Mining activities that do not effectively implement the required EMP and rehabilitation plans. | • Urban and infrastructure development prior to mineral extraction.  
• Mining activities which have the relevant approved environmental procedures and documents.  
• Related infrastructure and facilities. | • Post mining and rehabilitation land uses. | • The Mineral Resources Structure Plan 2002. |

**Planning and Environmental Decision Guidelines:**

- **Important issues in these zones include:** water pollution, biodiversity, economic, health and safety issues, access, noise, odour and visual issues
- **EIA and Land Use Requirements**
  - Extraction of mineral resources should be considered prior to the authorisation of urban or other development on mineral resources.
  - Mining activities should not be authorised without the required EMPs and rehabilitation plans.
  - Mining companies must commit sufficient financial resources to rehabilitation, prior to approval.
  - Where high priority mineral resources conflict with areas of biodiversity importance, specialist input from the Biodiversity Management Branch is to be obtained, prior to the authorisation of mining activities.
  - Where high priority mineral resources conflict with areas of archaeological and heritage importance, an assessment of these impacts must be undertaken and appropriate mitigation measures approved by Heritage Western Cape, prior to authorisation.
  - Sand mining of dunes can only be considered outside of the Coastal Protection Zone, and subject to specialist input and the implementation of appropriate mitigation measures.
  - Mineral resources close to visually sensitive areas, scenic routes and residential areas must consider the visual, health and safety impacts and adequate mitigation measures must be determined, prior to approval.
- **Other Compliance Requirements**
  - Authorisation of the activities in these zones must be in compliance with the Mineral and Petroleum Resources Development Act 28 of 2002 and the Land Use Planning Ordinance (LUPO).
### 6.2.6 Urban Uses and Utilities Zone

#### Table 6.11: Airport Noise Buffer Area

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
</table>
| Airport noise buffer zones | Within the 65 decibel zone (controlled area)*:  
- Educational facilities.  
- Institutional and community facilities, including hospitals and churches.  
- Commercial - offices.  
- Residential development. |  
- Commercial activities (excluding offices).  
- Light industrial activities. |  
- Heavy (scheduled) industrial.  
- Major roads.  
- Air fields.  
- Incinerators.  
- Engineering and utility services and infrastructure.  
- Sub-stations and electrical infrastructure.  
- Conservation activities.  
- Public open space.  
- Landscaping.  
- Roads and rail.  
- Transmission towers and rooftop base stations. | |

*Undesirable activities in the airport noise buffer may be considered by the local authority if acoustic screening measures are provided to limit sound levels.

Sound levels inside buildings must be below 40dBA.

**Planning and Environmental Decision Guidelines:**

- *Important issues in these zones include: noise*

**EIA and Land Use Requirements**

- *Un*desirable activities in the airport noise buffer may be considered by the local authority if acoustic screening measures are provided to limit sound levels. Sound levels inside buildings must be below 40dBA.

**Other Compliance Requirements**

- Activities in controlled noise areas (65dBA zone) must comply with the Noise Control Regulations for the Western Cape (1998), promulgated in terms of the Environmental Conservation Act 73 of 1989.

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### Table 6.12: Industrial and Commercial Areas

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### Environmental attributes

<table>
<thead>
<tr>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industrial areas</strong>&lt;br&gt;This includes areas currently zoned for industrial use. They are indicated on Zone Map A6.</td>
<td>Heavy (scheduled) industrial activities.&lt;br&gt;Incinerators.&lt;br&gt;Major roads.&lt;br&gt;Air fields.</td>
<td>Light industrial.&lt;br&gt;Commercial.&lt;br&gt;Infill development.&lt;br&gt;Engineering and utility services and infrastructure.&lt;br&gt;Sub-stations and electrical infrastructure.</td>
<td>A Guide to Reporting and Estimating Emissions for the Integrated Pollutant and Waste Information System (IPWIS) 2005.&lt;br&gt;City of Cape Town’s Air Pollution Control By-Law (2001).&lt;br&gt;Air Quality Management Plan for the City of Cape Town (Sept, 2005).</td>
</tr>
</tbody>
</table>

| Commercial areas<br>This includes areas currently zoned for commercial use. They are indicated on Zone Map A6. | Heavy (scheduled) industrial activity. | Light industrial<br>Incinerators.<br>Major roads.<br>Air fields. | Commercial.<br>Infill development.<br>Engineering and utility services and infrastructure.<br>Sub-stations and electrical infrastructure. |

**Planning and Environmental Decision Guidelines:**

**EIA and Land Use Requirements**
- Where proposed new industrial areas are surrounded by dense residential development, consideration has to be given to the social, health and safety impacts of proposed industries.
- Freshwater and/or groundwater specialist input must be obtained, and appropriate mitigation measures implemented, for industrial activities proposed on highly productive aquifers or close to river and wetland buffers.
- An EMP must be drawn up and implemented for all activities approved in these zones, in accordance with the City of Cape Town’s specifications for EMPS.

**Other Compliance Requirements**
- Any industrial activities must ensure that storm water quality and any other effluent discharged into rivers is monitored and adheres to quality standards.
- Industrial activities must comply with the relevant air pollution guidelines, including the City of Cape Town’s Air Pollution Control By-Law (2001).
- Authorisation of the activities in these zones must be in compliance with the National Environmental Management Air Quality Act 39 of 2004.
- No activity or use which includes the on-site storage of hazardous substances shall be permitted unless a risk management and prevention plan has been submitted and Council has given approval thereto (Draft Integrated Zoning Scheme Nov 2007).

**Table 6.13: Infrastructure and Utilities Servitudes**

<table>
<thead>
<tr>
<th>Environmental attributes</th>
<th>Undesirable types of activities</th>
<th>Types of activities that may have a significant impact</th>
<th>Types of activities that may not have a significant impact</th>
<th>Relevant policy and guideline documents for environmental management</th>
</tr>
</thead>
</table>
### Infrastructure Servitudes

This includes power cables and underground pipelines and infrastructure and is indicated, where possible, on Zone Map A5.

- Permanent structures and buildings other than those related to service provision.
- Roads and rail.
- Transmission towers and rooftop base stations.
- Agricultural activities (including urban agriculture).

### Planning and Environmental Decision Guidelines:

**Important issues to be considered in these zones include health and safety issues, vegetation, pollution and visual issues.**

**EIA and Land Use Requirements**

- No permanent activities or structures should be approved within servitudes, except for the designated infrastructure and bulk services activities and structures.

**Other Compliance Requirements**

- Municipal by-laws and regulations regarding engineering services and infrastructure must be adhered to.

**Best Practice**

- Servitudes can potentially be used for public open spaces, urban agriculture etc. subject to the relevant planning approvals.
- Where feasible, electrical power lines should be placed underground.
6.3 New Development Areas

6.3.1 Strategic sites for new development

Only two identifiable areas of significant size for new development are located in this district - District Six and Wingfield. Although District Six is not a typical greenfield site due to its history, it has been included as a new development area for the purposes of this study as it has the potential to cater for an extensive new built footprint on what is currently mostly vacant land.

a) District Six

As a strategic land parcel close to the CBD, the continuing under-utilisation of 42ha expanse of land is disappointing. The appropriate redevelopment will contribute to major restructuring of the urban environment in this district. The land is important in both size and location and continued efforts should be made to ensure its development and renewed integration into the surrounding urban fabric. The spatial impact of redevelopment would be significant not only in the historic sense of restitution but also in the large number and range of housing opportunities that will be afforded and the return of life and activity into what is currently a derelict and degraded urban environment in a prominent location.

i) MOSS & Green Linkages

The development of a significant green link in District A forms part of the future development of this site. An open space system that stretches from Devil's Peak through Trafalgar Park to the yacht basin is to be promoted. In addition strong physical and visual links throughout the area are to be created by an emphasis on the public environment of streets, squares and parks.

ii) Movement and access

The movement system and layout are to be informed by the recognition of historical remnants- the original street grid, pathways and communal spaces. The area is to be physically integrated into the surrounding urban fabric by means of a hierarchy of streets that promotes a compact development form. A number of broad spatial planning principles are relevant. This includes the function of Keizersgracht as an activity street with high intensity mixed-use that stretches from Darling Street to Walmer Estate; a pedestrian link along Hanover Street that connects the area to the East City as part of a general focus on a network of pedestrian friendly streets; and an improvement in the mobility function of Tennant Street (related to the deproclamation of the Canterbury road scheme). Physical links with adjacent areas (the central and East City precincts, Culemborg and Woodstock/ Salt River) are to be promoted.

iii) Public Facilities

The area is already home to a number of educational and religious facilities. The Cape Peninsula University of Technology occupies a large central portion while a number of historic churches and mosques are also located in the area. District Six has the potential to become an important location in the city for educational, religious and cultural facilities that serve both the community and the wider region.

iv) Mixed Use and commercial development
The intention is for the future development to offer a mix of land uses in close proximity to residential opportunities. Land uses are to be compatible and may include a variety of commercial, institutional and public uses as well as light industrial activities. The major streets and other points of high accessibility, particularly Keizersgracht and Tennant Street, should allow for an appropriate mix of uses (with residential uses located above more commercial uses on the ground and first floors).

v) Residential Areas

Vacant land in District Six is to be used primarily for the provision of housing. It is anticipated that it will take a high density but relatively low-rise form as a variety of housing types ranging from row houses to three/four storey apartment blocks. These higher residential densities are to increase the opportunities for people of different income levels to live in the area while also providing the thresholds to support increased commercial and institutional uses.

The development should meet the need of the land claimants while supporting the development of a liveable urban environment that fulfils in a range of requirements. An appropriate scale of development and a quality built environment with a strong focus on the public realm is necessary to provide an integrated inner city development.

b) Wingfield

Given its strategic location and size, the Wingfield site offers a significant urban re-development opportunity. However this would require a co-ordinated attempt to develop various landholdings resulting in a complicated spatial configuration and challenging procedural issues. Due to a number of issues, little progress has been made so far in getting the development off the ground. Concerns include ownership of the various land parcels; land claimant agreements; access to the site; a proposed rail corridor across the land; and issues around bulk service provision.

The development vision for the site is that of a mixed use area with a high residential density that contributes to a liveable environment. The housing mix should focus on social and gap housing but should not preclude higher income housing. The facilities planned for the site should serve the new residents but also become part of a node that is accessible to the wider community. The site should be developed in such a way that it is accessible from surrounding areas and integrates with the local context. Apart from the residential opportunities that it holds, the development of the site is also integral to the notion of the ‘urban backbone’ and the intensification of the Voortrekker Road corridor.

Some planning work has already been undertaken and a number of development options have been identified for the site. In preliminary concepts, the following elements have been identified as important components of a spatial development vision for the site:

i) MOSS & Green Linkages

Portions of the site have been identified as being of critical biodiversity value. Most of the central portion of the site as well as a portion along Voortrekker Road has been indicated as ‘restorable replaceable’ sites. Along the eastern boundary, a portion has also been identified as an ‘irreplaceable’ consolidation site with small ‘irreplaceable high and medium’ value biodiversity pockets within. Further discussion would have to establish the extent to which these pockets should be retained and preserved on the site. It is suggested that, where possible, areas of natural value in particular along the eastern boundary be retained as natural corridors that complement the proposed adjacent urban development.
The wetlands to the north of Wingfield should be incorporated into the green structure. In addition, the Maitland cemetery to the south is also seen as a green space that should be more actively utilised and incorporated into the open space network. The existing solid wall should be replaced by a more permeable or palisade fence to improve visual and functional integration with the Wingfield precinct.

Green linkages across the site should connect into adjacent areas, for example along Sunderland Road and Dapper Road into Windermere to create a pedestrian orientated green recreation system.

ii) Movement and access

Currently the site is only accessible from an entrance opposite Frans Conradie Drive. There is an entrance on Voortrekker Road not utilised at present. Transport plans for the area call for a revised interchange at the N7 and Frans Conradie to allow for the extension of Frans Conradie across the site to the Sable Road interchange. This linkage is particularly important for transport planning in the area and will provide a significant access to the site.

A new road, Aerodrome Road, is planned from the Conradie Hospital site over Voortrekker Road and into Wingfield. It is envisaged that Aerodrome Road will connect with Frans Conradie Drive. Some planning has been carried out but alignments have not been confirmed. The westward expansion of Milton Road would appear to be desirable. In order to ensure that this extension does not impact on the N7, grade separation would be required.

Some of the above projects may go ahead irrespective of the development plans for Wingfield while others are dependent on Wingfield.

There is a proposal to construct a rail corridor across the site running from north to south. The lines would need to be raised in order to move over obstacles outside of the site. This would require that the lines moving over the site would not be at ground level. Should fill, as opposed to a viaduct, be used to raise the lines, the barrier effect of the lines will be significantly increased. The proposed rail corridor will run down the middle of the site cutting larger portion of the Ndabeni Community Development Trust land in half and further complicating access issues.

iii) Public Facilities

Wingfield and in particular its interface along Voortrekker Road is seen as a potential node of district-level significance. In part this would be as a result of new public facilities that not only address the needs of residents, but also serve as a focal point for the wider community. To maximise convenience and access, facilities should be clustered, add to the civic identity and be easily accessible by means of public transport.

iv) Mixed Use and commercial development

Mixed use, particularly along Voortrekker Road, should be a definite part of the future development. This would enable efficient access to commercial opportunities and also ensure a vibrant multifunctional environment.

v) Residential Areas

The site should predominantly be used for the provision of affordable housing given its strategic location. Cross subsidisation on-site should be limited to avoid possible ‘gentrification’ or gated development.
The land is currently owned by the Department of Public Works, the Ndabeni Community Development Trust and occupied by the Department of Defence. Before further work can take place, a more detailed financial feasibility needs to be undertaken to guide the acceptance of any development restrictions. Land has been transferred to the Ndabeni Community Development Trust as a result of a land claim settlement agreement. This land comprises 3 erven, two located along Voortrekker Road and one larger erf located in the middle of the site. The land claimants cannot proceed with the development of their land until the issues relating to access and services have been clarified.

Until some of the variables identified above are clarified, it is difficult to chart a precise development programme and vision for the site. A more detailed development framework comprising a spatial development framework, bulk services plan, phasing plan, land release strategy and financial model can only be completed at a later stage, followed by the requisite statutory procedures.

6.3.2 Infill opportunities

Refer to Undeveloped Land audit

Given this district's potential in terms of employment opportunities and other amenities, vacant land and infill sites can potentially address the need for affordable residential fabric by means of medium and high density mixed use development with a social housing component. In all instances, the built form and integration with the surrounding urban fabric is important for proposed developments.
Plan P1: New Development Areas
6.4 Urban Restructuring and Major Upgrading

The urban restructuring and major upgrading map proposes changes to existing urban areas within the district with the aim of improving the performance of the urban environment. Proposals focus on improving integration, reinforcing public transport through selective intensification, improving public amenity and encouraging a mix of land uses where appropriate.

6.4.1 Open Space System

The open space system reflected in this framework promotes integration between various green components as part of a linked system. The upgrading and enhancement of the natural environment and the development of sports and recreational facilities are important elements in this district. The following are to be considered in particular:

- **Table Mountain** is a major environmental feature that requires appropriate protection. Although managed as a National Park, consideration needs to be given to the areas where there are conflict between development interests, particularly around access points, while conserving the natural environment. The non-negotiable areas of natural value within and beyond the urban edge must be identified and protected.
- Instances where possible urban edge amendments could be considered include the Magazine site and the Strand Street quarry. Guidelines have been drawn to ensure that certain criteria are met and that any development (primarily for the purpose of enhancing access to the mountain and possibly inclusionary housing) is handled sensitively.
- **Mountain-sea linkages:** The natural topography of the Table Mountain chain is to be integrated into the urban fabric by means of a series of “green fingers” that extend towards the coast. These areas are intended to contain recreational green spaces that form part of a continuous open space system.
- **Coastal link:** A continuous pedestrian link along the coast, stretching from the Atlantic Seaboard to the Milnerton area are to be enhanced where it is already in place (e.g. Sea Point promenade) and added to in order to create an amenity of metropolitan value.
- Metro-scale urban parks are to provide sport and recreational opportunities to a large number of people. Suitable development alongside these should facilitate active interfaces.
- Creative design can enable new green amenities in areas of residential density, for example the upgrade of Maitland cemetery to act as a multi-functional open space.
- At a district scale, the open space system reflected in the framework seeks to promote, where possible, continuity. Appropriate district scale sport and recreation and school facilities should seek to clip onto this system of multi-functional open space.
- Scenic routes are to be protected and guidelines for any development impacting on these should be followed.
- More active recreational areas are to be associated with residential developments, for example incorporating the Langa sports complex as part of a linear park along the Jakkalsvlei canal. Ideally the N2 Gateway development should face onto this to allow passive surveillance and integrate the activities associated with the residential area with the open space system.

Parks and open spaces in the district should, where possible, be associated with social facilities and adjacent land uses with compatible activities. Intensively developed edges should define open spaces, with development fronting onto open spaces to enable passive surveillance.

**a) Biodiversity**
The Biodiversity network in this District has been identified and ground-truthed. These areas should be incorporated into the open space network and be protected as valuable natural assets. See Summary of Environmental Attributes (Chapter 3)

b) River corridors

Key water features within District A include the Liesbeeck River and Black River as part of the Salt River system and several smaller mountain streams e.g. Kasteelpoort, Camps Bay, Diep and Lekkerwater streams. These form important ‘green corridors’ between the mountains and coastline as well as providing habitats for a rich diversity of terrestrial and aquatic life. However many rivers have been canalised, dramatically altering runoff patterns and ecological functionality. This approach is also associated with a decline in water quality as well as compromising community interaction with rivers and wetlands. An approach should be followed whereby rivers are considered as important natural elements that not only has a recreational purpose but also serves an ecological function. Specific issues include:

- The Liesbeek River has been canalised and cut off from its original course. In effect the canalised section functions merely as a conduit for stormwater while the old water course remains largely stagnant. Although it might not be possible to redress this completely, further investigations should establish how this can become part of a well-maintained open space system that is ecologically sustainable while offering recreational opportunities.
- Pollution levels of rivers, for example the Black River, need to be addressed.
- Many of the wetlands and rivers in the district are not at present functioning as passive recreational amenities and are often inaccessible to the general public.

c) Cemetery

The Maitland cemetery located along Voortrekker Road has been identified for upgrade. This relates to a re-conceptualisation of the landscape by developing mixed use along the Voortrekker Road boundary edge and also creating a memorial park, with the intention to have a greater level of integration into the area, increase usage and thereby enhanced safety.

d) Metropolitan/District Parks

i. Green Point Urban Park

This metropolitan facility developed as a result of the new Green Point stadium development should form the focus of sport, recreation and recreational open space in the area. Further initiatives to upgrade the Mouille Point/Sea Point promenade must be explored.

ii. Two Rivers Urban Park

The area defined as the Two Rivers Urban Park, located at the confluence of the Black and Liesbeeck Rivers, provides an ideal location for the creation of a metropolitan scale park as it comprises extensive open spaces, sensitive ecological systems and habitats, significant institutions, historic buildings and cultural landscapes. The area is situated on the edge of the inner city adjacent to dense residential and other land uses. From a district spatial perspective, the proposed park is significant as it forms part of a conceptual coast to coast greenway which links open spaces up to Table Bay.
The existing state of the natural environment means that considerable investment is necessary to enable the establishment of a quality park. Environmental degradation and the continued demand for land together with institutional and procedural challenges makes this a challenging project. However, the benefit that it would afford the wider community is of such significance that continued efforts should be made to realise its full potential. The park can provide recreational facilities that are of particularly benefit to areas like Salt River, Woodstock, District Six and the central city where there is an under-supply of open space. As part of the park development the rationalisation and improvement of existing institutions on the site should be addressed.

e) Other POS/sports fields

- It is proposed that open space upgrading in the form of local parks seek opportunities within the local linear open space system.
- Upgrading of sport and recreation facilities should be focussed within existing sports complexes. Efforts should be made to broaden the diversity of activity available within these areas to include activities beyond formal sport to passive recreational activity.
- Rationalising a number of these open spaces through allowing new development should be encouraged to improve the quality of place and define the space.

6.4.2 Transport

i. Road network improvements

The vehicular movement pattern in District A is characterised by strong traffic flow towards the Cape Town CBD during the morning peak period and away from it during the afternoon peak. Significant congestion occurs on the main incoming routes during the morning peak while they operate at less than 50% of capacity in the reverse direction during the same time. The afternoon peak period is the reverse of this.

Several route connections are proposed to promote integration in the area and to strengthen connectivity and general mobility:

- Granger Bay Boulevard
- Berkley Road extension (Berkley Road with a proposed extension that connects with Malta Road/ Albert Road (Lower Main) as part of a inter-district development route.
- Aerodrome Road
- Wingfield internal north-south circulation
- Frans Conradie extension (Frans Conradie Road, extending from Goodwood in the east, through Wingfield along an extension of Sable Road that would link into Koeberg Road in the Rugby area).

Changes to the movement system open possibilities of adjusting the dominant role of a number of routes in the district, supporting the infrastructural needs of public transport (including Bus Rapid Transit), whilst ensuring safe pedestrian access and enabling intensification that reinforces public transport ridership. In this regard, the following hierarchy of functional roads are proposed:

A) Urban freeways

District A is bounded by the two urban freeways of the N1 and the N2, both of which form part of extensive long-term public transport proposals. The N7/Vanguard Drive and the M5 (Black River Parkway) form important north-south linkages across the metropolitan area. While these remain important mobility routes, they also have the potential to generate
development opportunities in surrounding areas. Due to the large traffic volumes, economic activities around off-ramps and the related collector/distributor roads becomes feasible. An example of this would be the Bhunga Drive off-ramp from the N2 in Langa.

b) Development routes

Development routes play an important role in the mobility function of the metropolitan transport network. As part of an inter-district system, it is suitable for line haul public transport with fast moving traffic sections along which there may be interrupted flows at intersections. Generally they might have limited direct access, but development can take place by means of parallel and connecting side roads. Stretches of activity route type development - mixed land uses and higher density areas - might be part of these routes

In District A, the following are promoted as development routes:

- Jan Smuts Drive from Athlone northwards through Pinelands and into Berkley Road with a proposed extension that connects with Malta Road/Albert Road (Lower Main) and continues up to Oswald Pirow. This proposed development route would result in an important linkage that stretches from the CBD into other Districts.
- Buitengracht Road from the Coen Steytler intersection up to Burnside Road.
- Frans Conradie Road, continuing from Goodwood in the east, with a proposed extension along the upper end of Wingfield along an extension of Sable Road that would link into Koeberg Road in the Rugby area.
- Marine Drive continuing northwards into the R27 (West Coast Road)

c) Activity routes

These significant routes are directly linked to development including particular nodes, mixed land uses, commercial or business developments, social facilities and institutions and higher density developments. Intermittent movement patterns including public transport exist along these routes. Direct access is possible with resultant interrupted movement flows. These routes can be pedestrian-orientated in sections.

In District A the following have been identified as activity routes:

- A portion of Victoria Drive in Camps Bay.
- Somerset Road into Main Road Sea Point/ Kloof Street up to its end in Queen Street.
- Adderley Street up to the Wale Street intersection.
- Darling Street along Sir Lowry and into Victoria Road (Main Road) as it continues southward.
- From Victoria Road, the Salt River ‘triangle’ (Salt River Road and Durham Rd) connects into Voortrekker Road, which is an important activity route continuing eastwards across districts.

d) Connector routes

The following form important linkages within the District:

- Victoria Road, along the coast from Bantry Bay, through Clifton and continuing southwards (within which the Camps Bay portion function as an activity route).
- The upper portion of Strand Street as it continues into Ocean View Drive.
- Kloof Nek – from Bellevue Road along Camps Bay Drive up to Victoria Road.
- Orange Street (including Buiten) along Annandale and Mill Streets and into De Waal Drive.
o Liesbeeck Parkway as a proposed north-south linkage from Marine Drive continuing southwards.

e) Activity street

These are local streets with concentrated activities including mixed land uses, business, local institutions and facilities and higher-density developments. These streets have a high degree of access to activities. Stop-start movement patterns exist with intense pedestrian movement possible. In District A the following is seen as local activity streets:

o Regent Street in Sea Point as a continuation of the Main Road activity route
o Long Street continuing into Kloof Street up to Bellevue Road
o Buitekant Street between Darling and Vredehoek street
o Keisersgracht
o Lower Main Rd in Observatory
o Prestige Drive continuing into Avonduur Drive in Pinelands
o 6th Avenue in Kensington
o Aerodrome Rd along Wingfield
o Wingfield through road up to Station in Acacia Park
o Washington Drive in Langa (linking into the Athlone Power Station)

f) Other structuring routes

Structuring routes have the potential to have portions of it functioning as activity streets at local incidences (e.g. Forest Drive in Pinelands, Bhunga Drive in Langa, portions in Kensington/ Factreton, Beach Road in Sea Point etc.)

o The portion of Western Boulevard along the Green Point common, Granger Bay Boulevard and Beach Rd up to Queens Rd
o Strand Street between Buitengracht and Adderley
o Wale Street
o Kloofnek
o Oswald Pirow- Tennant-De Villiers
o Old Marine Drive- Culemborg Spine Rd and rail reserve proposal through Epping
o Koeberg Rd into Cannon in Maitland
o 6th Avenue Kensington up to Sunderland Rd as well as 13th Avenue all the way up to proposed Frans Conradie extension
o Internal Wingfield road as well as Milton Rd extension
o Forest Drive through Pinelands (with activity in portions) into proposed continuation along top of Thornton.

From Pinelands (Avonduur/ Forest Drive intersection). A proposed link between Pinelands and Langa is to be further explored.

ii. Rail network improvements

The Regional Rail Plan (RRP) was undertaken by the South African Rail Commuter Corporation (SARCC) to prioritise the existing rail corridors for investment in infrastructure and rolling stock. Three corridors for short term improvement (2007- 2011) have been identified, all of which include portions in District A. These are the Cape Town - Khayelitsha/ Kapteinskip line; the Cape Town - Simonstown line (including the Cape Flats line) and the Cape Town - Strand/ Bellville line (including the Monte Vista line). The bulk of infrastructure spending will be directed towards upgrading the Cape Town, Athlone, Heideveld and Langa railway stations, refurbishing and purchasing new rolling stock, improving security, upgrading communication and signalling systems, and constructing park & ride facilities. Continued co-
operation between rail network and station improvement initiatives and spatial planning is necessary to ensure correlation between urban development and mobility.

iii. Station upgrades

A major upgrade process has started for the Cape Town Station precinct. The current station complex dates back to the 1960's and is no longer sufficiently equipped to deal with the large volumes of daily commuter traffic and related needs. In addition to a short term upgrade, the option of sinking the railway lines underground is currently being explored. Should this be a viable opportunity, it would result in the considerable development potential of a number of new city blocks stretching out towards Woodstock.

In addition to the significant revitalisation efforts underway for Cape Town Station, Langa station is the only other station in District A that has been identified for upgrade linked to the 2010 Soccer World Cup transport infrastructure improvements. A new station is being developed at Windermere primarily to serve the Century City precinct.

As part of the City’s Travel Demand Management (TDM) Strategy, the use of park-and-ride facilities at stations were identified as a strategy for reducing congestion. A number of stations (none of which falls within District A) have been identified for the further development and expansion of park and ride facilities.

A number of projects have been identified in District A as part of Intersite’s development programme. Although details and timeframes have not been established for all of these, preliminary upgrade proposals include the following:

- Langa Station – Shopping Centre
- Maitland Station – Land Sale (residential area)
- Mutual Station (Mupine residential development)
- Thornton Station (commercial)
- Thornton residential
- Cape Town Station – mixed use development
- Woodstock Industrial – industrial development
- Kensington Station – residential development
- Maitland Station – heavy industry operator
- Maitland Station – residential development
- Ndabeni – light industrial development
- Observatory Rail Sidings – office space development

Development frameworks are to be drawn up for the following as part of the National Station Precinct Planning Project:

- Woodstock/ Esplanande Station
- Salt River Station
- Maitland Station

All of these fall within areas identified as suitable for mixed use/ intensification.

iv. Transport interchanges

- Cape Town Station

The Cape Town Station precinct functions as a metropolitan public transport interchange which includes the busiest station in the metropolitan rail network as well as a number of
other transport modes including minibus taxis, long distance bus services, metered taxis and commuter buses in close proximity. Associated with this is a range of public amenities and commercial activities. The upgrade process, of which the initial phase has commenced, should enable this interchange to expand and adapt in order to deal with future demands and to provide optimally in the need of the various users.

- Wingfield

This is seen as a potential major district scale interchange that can comprise bus and taxi ranks. As part of a stretch of mixed use development along Voortrekker Road, it could have other associated public uses, institutions and spaces, for example a market, public square, commercial activities and so on.

- Maitland Station

The potential change of this station into an interchange of district significance would take place in conjunction with the envisioned intensification and further development of the Voortrekker corridor. More detailed planning around the precinct should establish how this interchange would be integrated into the urban fabric and linked to other public transport modes in the area.

- Salt River Station

Salt River Station has also been identified as a district scale interchange due to its strategic location between the CBD, the southern suburbs and Voortrekker Road area.

v. Transport-oriented Development

Transit-oriented development (TOD) refers to residential and commercial districts located around a transit station or corridor with high quality service, good walkability, parking management and other design features that facilitate transit use and maximise overall accessibility. Although most of the stations for district A are destinations rather than origin stations, the principle of high intensity residential and commercial uses in close proximity to stations are supported.

6.4.3 Intensification and Major Land Use Change

a) Strategic sites

A number of sites in District A can be considered strategic, primarily due to their location and scale but also in terms of the land uses that can potentially be provided. In some cases the value lies in the range of residential opportunities that could be offered but the development of these sites would also enable recreational opportunities and the provision of facilities and amenities. As can be expected with sites of this nature, complicated development processes can ensue as a result of ownership issues and other procedural requirements. However the spatial restructuring potential of these sites are significant and this SDP therefore supports initiatives that will bring about the suitable improvement of these sites.

i. Athlone Power Station

The coal-fired Athlone Power Station was decommissioned in 2003 after it became economically unviable. A decommissioning process is currently under way which would eventually result in a brownfield site with attractive industrial buildings and structures that
could be redeveloped. The total site area is approximately 30 hectares. The site is strategically located adjacent to the diverse neighbourhoods of Langa, Pinelands and Athlone as well as being situated on the N2 highway between the central city and the airport. This allows future development of the site to make a significant contribution towards spatial and social integration between previously segregated communities. The area is currently a typical example of fragmented and isolated societies of different socio-economic and cultural backgrounds, and in the case of Langa and Athlone, characterised by the poor quality of the urban environment. The redevelopment of the Athlone Power Station precinct can play an important role in the revitalisation of the surrounding neighbourhoods. The central location means that the precinct has the potential to serve a wide range of local needs while also becoming a city-wide destination. The site offers a unique opportunity for revitalisation – the chance to re-use the existing built fabric in order to create a more efficient and improved urban environment for a large number of people.

Detailed development proposals for the precinct would have to address issues of access and permeability, particularly in an attempt to overcome the traditional barriers between the neighbourhoods. There should also be an emphasis on the creation of a network of public spaces to link the various public facilities, institutions and residential fabric that could potentially be provided, together with a ‘green web’ that extends into the surrounding context.

Movement and access

Two major routes, Jan Smuts Drive to the west and the N2 Freeway to the south, abut the site. A commuter rail line between the central city and the metropolitan south-east sector passes to the immediate north with an existing station serving Langa residents. As much of the importance of this project relates to its ability to join different areas together, careful consideration of the movement network will be necessary. The biggest constraint is the site’s isolation from its surrounding context due to such physical barriers. The extension of Bhunga Drive southward to Athlone will address this in part as will direct road access from Jan Smuts Drive to a proposed new residential area north of the rail.

It is vital to connect the precinct to its surroundings by means of a non-motorised transport network. In particular this would mean the establishment of a pedestrian/ bicycle connection northwards to Pinelands. Towards the east, the site can connect with Bhunga Avenue at a number of points which in turn would provide access to Athlone NMT infrastructure by means of a proposed pedestrian/ cycle bridge over the N2.

The potential for a new station on the existing rail line also needs to be investigated. This would increase the metropolitan accessibility and benefits of the project as a high order special place.

Development opportunities and land use

The site, despite a number of constraints, offers an exciting redevelopment opportunity that can result in a variety of land uses for both locals and visitors. Residential, commercial, retail and community facilities are likely to be part of any proposal. The mix, layout and built form of these elements are dependent on a number of variables, including for example the extent to which land is required for continued service delivery and the potential for existing buildings to be converted. Initial frameworks prepared for the site indicated three possible zones of development: a residential area; a public entertainment or cultural hub; and the utility service zone. The residential precincts would mainly consist of mixed use high density walk-up housing built in the form of courtyard development blocks. The cultural/ entertainment precinct would comprise of the reinterpreted old power station buildings, reinforced with complimentary architectural additions. This precinct would provide for higher order
commerce, business and cultural activities. A central open air public space could become the symbolic centre of the precinct.

The core of the development would centre around the re-use of the existing large scale buildings. The turbine hall and ancillary buildings of the power station have an attractive industrial quality and its size would allow any number of uses. Together with some architectural additions, they will articulate the outdoor public arena and can perform a number of public functions, including entertainment and recreation, social, cultural, institutional and commercial purposes. It is vital that these buildings are linked by active open spaces that extend into the surrounding areas. A hierarchy of public spaces should be developed, with different qualities and activities.

A constraining factor in the development is the continued presence of service infrastructure on the site. A sewerage pump station, solid waste transfer station and electrical switching station together with an extensive network of water mains, electric cables and sewage pipelines will sterilise pockets of the site. These will have to be retained as introverted secured sites within the project with a green web that can mitigate the servitude areas.

The project provides the opportunity to combine diverse elements like affordable housing, entertainment and commercial spaces with cultural activities such as initiation and memorialisation in order to create a mixed use precinct that has value as an urban special place on a metropolitan scale.

**MOSS & green linkages**

The site is currently screened from its surrounds by avenues of mature eucalyptus trees. A sports precinct and initiation site is located to the immediate east. The redevelopment of this precinct offers the opportunity to consolidate the green and open space system and to create a green web that extends across and beyond the site.

Any development proposal for the site should illustrate a commitment to provide extensive pedestrian routes and public spaces with quality landscaping and tree planting. Other elements include the upgrading of the sport facilities with new built edges alongside that provide active frontages. There is also the potential to extend the existing Langa cemetery towards the northern portion of the site. The development of the site are based on a system of public and private investment opportunities that are to be linked through networks of green open space and river corridors, pedestrian and bicycle routes as well as streets where necessary. It is important that the interface with the adjacent initiation site is handled sensitively with additional tree planting as screening.

The rehabilitation of surrounding river systems (Jakkalsvlei, Blomvlei and Vygeskraal Rivers to the south with the Bokmakierie River to the south-west) should also be considered. Some of these have been canalised but the possibility for converting them to upgraded natural features should be investigated. Pedestrian connections across the N2 freeway would enable communities on either side to access these amenities and open spaces.

**ii. Somerset Hospital**

This 10,5 ha site, owned by the Provincial Government of the Western Cape, is located in an extremely strategic location close to the Victoria and Alfred Waterfront and the Green Point Urban Park precinct. Currently the site as a whole is underutilised and the existing buildings are not optimally used. Initial planning proposals have been made for the site and included concepts like the development of a 260-bed Regional Hospital, a Community Health Centre, a minimum of 200 residential accommodation units and other facilities.
There are a number of buildings with heritage value, in particular the old Somerset Hospital, that would have to be sensitively integrated into future designs for the site. Visually and spatially the site is an important integrator between the city, the V&A Waterfront and the Green Point area. This needs to be recognised in future layout proposals. The site should be developed as a mixed use precinct that can accommodate a range of publicly-oriented activities. In terms of its edges and boundaries, the precinct requires a suitable public interface with the Green Point Common, Granger Bay Boulevard and the stadium precinct. Sufficient linkages, both pedestrian and vehicular, have to be provided across the site to ensure integration with the Waterfront towards the north and east. Similarly visual linkages are to be taken into account with specific reference to the sea and the mountain.

### ii) Culemborg

Of all the land available for re-development in this district, Culemborg is probably the most strategically located with tremendous opportunities for spatial restructuring of the wider area. The future development of the area is directly influenced by the port expansion option pursued. The recently completed Port Development Framework Plan outlines a number of reconfiguration options over different timeframes. It is recognised that growth and development of port activities have a significant impact on the economy of Cape Town and the Western Cape. However spatially there is conflict between the long term growth of the Port (and its impact on the surrounding land) and the intensive mixed use urban development traditionally envisaged for Culemborg.

The extent to which the land will be available for urban development in future is uncertain. A number of planning initiatives have been completed previously, outlining various proposals for high density housing and related facilities; however the Culemborg site has since been reclassified as a property that is of core value for port-related activities. It has been indicated that there is a critical need for the expansion of container storage areas. The Port Industrial Park (the portion of land between Marine Drive and the N1) has been earmarked as a site for containerisation and related land uses. The impact of container transport on the local road network, in particular around Paarden Eiland and Maitland, is a serious concern. The visual impact of container stacking is another, particularly in this sensitive ‘gateway’ to the central city area. Questions remain on how to enforce limitations of stacking heights and protect visual corridors and views. In general it is felt that container storage is an inappropriate use for such well-located land and that alternative solutions should be sought.

As a strategic site in the City, Culemborg should be carefully approached in terms of urban design, whatever the final land uses and activities might be. The sterilisation of this large portion of land through semi-industrial activity should be limited as far as possible. There is a need to integrate the site with the surrounding context, ideally by means of physical permeability and linkages across the site, but also through visual integration, protection of view corridors, the consideration of bulk and height of structures. The nature of any potential development is critical as the site is a gateway to the CBD and very prominent in its location and size.

### iii) Maitland Abattoir

The Berkley Road City-owned site (the old Maitland Abattoir) offers a significant urban re-development opportunity. The potential of the site to provide in a variety of land uses requires further investigation. The outcome of such a feasibility study would determine the viability of various redevelopment options, but in principle it is felt that a mixed use precinct with a light industrial, commercial and higher density residential component is suitable.

The sizeable site (approximately 13.5 hectares) allows extensive redevelopment that cannot be realised by means of ad hoc utilisation of existing structures. The current Industrial zoning
(with an allowable 100% coverage and no bulk restrictions) has considerable implications for economic profitability of redevelopment ventures. However, in terms of a spatial vision for the site, it is recommended that a mixed use precinct is developed. The well-located land is close to employment opportunities, major movement routes and public transport facilities. It is also within walking distance to the commercial opportunities of Voortrekker Road and other community facilities and as such a residential component might be considered as part of future proposals.

The structural integrity of existing buildings and the effort necessary to convert them to other uses would also have to be considered. Some of the buildings date back to 1914 and previous uses might necessitate a number of possibly costly interventions to allow re-use. A spatial framework based on a feasibility study would indicate how the site layout can be optimised rather than the current piecemeal approach of re-using existing structures.

In terms of the broader district, the site is seen as strategic given its size and location and also the lack of availability of similar pieces of publicly-owned land. It would be unfortunate if it is not planned and developed holistically with land uses that can be of more benefit to the surrounding area.

iv) Oude Molen

Oude Molen (a portion of Erf 26439, referred to as Valkenberg East) is owned by the Provincial Government of the Western Cape and measures 18.8ha in extent. It has been earmarked for a new model of development that is based on social and land use integration with a focus on sustainable design. This approach is particularly suitable as the site is located in close proximity to the proposed Two Rivers Urban Park.

The site is dominated by a number of buildings, previously part of a mental health facility - some with heritage value. The area is occupied at present by a number of small businesses, educational and institutional buildings and various agricultural and conservation initiatives. A wide range of public services are provided to surrounding communities. Substantial development opportunities can be realised in this precinct. The mixed use and vibrant character of the site should be retained together with a focus on community development projects. Commercial, residential and institutional land uses are supported in a form that relates to the existing built fabric.

Planning proposals have previously been made for the site, but currently the notion of an ‘integrated sustainable human settlement’ is being explored. This is in keeping with the nature of existing activities on and adjacent to the site as well as being in line with broader sustainable development requirements.

v) Conradie Hospital

The sizeable old Conradie Hospital site is centrally located and suitable for significant re-development. Its re-development would allow the establishment of a mixed use neighbourhood with substantial housing and employment opportunities. It is foreseen that the precinct will accommodate an open space component (potentially focussed on the revitalisation of the Elsieskraal canal) and social facilities that can benefit the immediate neighbourhood and adjacent residential areas. In addition commercial, light industrial and retail land uses are to be provided.

The site is located relatively close to Voortrekker Road and its development would therefore be in line with the SDP conceptual proposals for that area. Its proximity to public transport opportunities (in particular Mutual Station) increases the importance of a relatively high-density development. Existing road connections to the site are limited and new road linkages
to the north and south are required to connect the site respectively to Voortrekker Road and across the canal to Viking Way.

**b) Mixed use intensification**

To reinforce the system of activity and structuring routes and urban nodes, the Urban Restructuring Plan proposes strategically located intensification of land use activity both through heightened commercial and industrial use as well as residential densification.

Large areas of mixed use have been proposed in this district. Although in some cases it does not involve a significant change of land use, these areas of mixed use intensification have been emphasised as it improve the overall urban structure and relate to the movement system. The following are proposed in particular:

- Intensification related to strategic land parcels and the integration of this within existing environments (see above).
- Greater intensity of mixed use development should be encouraged along structuring routes and activity routes/ streets.
- The beachfront area of Sea Point is suitable for more mixed land uses on the ground level of existing buildings and infill sites in order to maximise the recreational opportunities of the area. The emphasis should be on the improvement of the pedestrian environment and amenities related to this. Significant additional residential densification in the remainder of Sea Point is not supported as there are already severe constraints on infrastructure, particularly the movement system.
- Little additional mixed use is proposed for other areas along the Atlantic Seaboard. The emphasis there should be on the protection of green corridors and the natural environment.
- As highlighted elsewhere, the CBD remains the focus of intense commercial, business and residential land uses. This trend is set to continue and should be supported by policies that facilitate an appropriate built form and public environment.
- A broad band of intensification has been indicated for the area stretching along Green Point, the V&A Waterfront and the north foreshore. Greater residential development in these areas are supported (for example as part of the Somerset Hospital precinct, V&A extension and Roggebaai Canal development), however the improvement of pedestrian permeability and general access remains vital. Of particular importance is the concept of the city’s connection with the sea. Although this has in part been destroyed by the foreshore freeway system, the idea should not be lost and continued emphasis should be placed on connections to the harbour, even if only notional. Some proposals have been made by the private sector around the ‘sinking’ of the freeway system. Although this would entail extensive investigations and feasibility studies, the idea of re-using land for development purposes other than expanding the freeway systems, is supported.
- The possibility of a cruise liner terminal as part of the Port of Cape Town has been mentioned. Notwithstanding the economic studies first required to ascertain feasibility, the initiative of providing dedicated facilities that improve the public environment of the port area is supported. A possible link with the proposed extension of the Cape Town International Convention Centre and Roggebaai Canal precinct would result in a spatial continuation of the CBD to the water’s edge.
- The East City area is seen as an intensive mixed-use area with significant urban regeneration potential. A number of private initiatives illustrate the trend towards creative industries locating in this area. This should be supported by optimising the use of significant state resources such as the Castle, the Granary, City Hall and Good Hope Centre and improve the quality of the urban environment and public space.

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connection of the East City with respectively the CBD and Woodstock should be improved.

- Similarly Woodstock and Salt River form part of a regeneration process largely led by private sector redevelopment. The trend for a variety of business activities including offices, warehouses, shops and creative industries in this area is supported. It is important that new developments are sensitively integrated into the existing built fabric with a suitable sensitivity of scale and interface. The revitalisation of private buildings should be complemented by public sector investment in the public realm, for example the upgrading of the Salt River market.

- A gradual change of land use is foreseen in the Paarden Eiland area as a result of its locational attributes. Although traditionally an industrial area, it is suited to mixed use development, including retail, offices and residential. This trend is already evident in the northern portions. The possibility exists to link the Two Rivers Urban Park as part of a continuous green system by means of a mixed use precinct along the Salt River canal to the east. The well-located properties along Marine Drive also offer considerable opportunities for mixed land uses. The BRT route that is currently being constructed will further improve access to the area and support a greater variety of land uses.

- Intensification to support the ‘urban core’ - the activity route along Voortrekker Road linking Cape Town and Bellville CBD. This proposed intensification places a greater emphasis on mixed land use opportunities along the corridor while making provision for higher density housing opportunities together with more commercial nodes at selected locations. The intention is not to create a linear ‘blanket’ densification zone but to identify suitable areas where intensification will be meaningful and contribute to a more efficient urban environment. The location of these areas will be informed by existing land uses, public transport stops/ stations and amenities. Preliminary zones of intensification are focussed on Maitland, Ndabeni, and along Voortrekker Road in Kensington, Windermere and Wingfield.

- In addition to the Athlone Power Station precinct and the provision of housing as part of the N2 Gateway programme in Joe Slovo, mixed use intensification in Langa should be focussed on Washington Drive. Limited development is expected in the Nigeria Way area to the north because of infrastructure servitudes. However the proposed BRT route should be supported by mixed use parcels where possible. Mixed use is also supported around the station precinct.

- Intensification is also supported where it is used to define public space including sports fields and parks, e.g. overlooking the Maitland cemetery, and adjacent to the Green Point and Two Rivers Urban Park.

6.4.4 Public Facilities and Public Space

a) Urban/Civic Upgrade

Areas identified for urban upgrade and improvement in the public realm include:

- Parts of the CBD, in particular the foreshore and areas associated with critical public links and NMT routes.
- Woodstock along Victoria Road roughly between Station Road in the west and Salt River Road in the east, focussed on Woodstock Town Hall precinct.
- Further along Victoria Road eastwards up to Observatory around Station Road.
- In future the interface between the Wingfield site and Voortrekker Road is to be addressed. (Proposed commercial edge, together with intensification along the road in general and upgraded Maitland cemetery area)
- Parts of Langa, in particular Bhunga Drive and the Washington Drive.
b) **Critical Public Links**

- *Coastal Link:* It is proposed that a pedestrian walkway is established along the entire coastline from Camps Bay northwards to Milnerton. Although it already functions in part, e.g. the Sea Point promenade, further effort should be made to link it continuously. Detailed urban design proposals around the Port and Foreshore area would have to be investigated in order to allow linkages.
- *Inner City NMT routes:* Certain routes in the inner city are to be emphasised as dedicated pedestrian links:
  - Waterkant/ Riebeeck Street linking into Somerset Road towards Green Point.
  - Adderley Street continuing from Government Avenue and Company’s Gardens/ De Waal Park as mountain-coast linkage.
  - Longmarket Street as a major pedestrian link between the Bo-Kaap and District Six.
- *Mountain-sea linkage:* e.g. green link between sea, Culemborg, Trafalgar Park, District Six and mountain.

c) **Special/Destination Places**

The general understanding for the Special Places is that of:

*Unique and special places sites of existing, or potential, attraction facilitating celebration, recreation, amenity, memorial and cultural interest that are highly accessible by the public and positively reinforce the vision, structure and resource base of the city. Special places serve as a strategic mechanism for authority intervention (infrastructure investment, maintenance and management) towards benefiting the city as a whole - social, economic and environmental.*

Several special places are identified in the conceptual framework:

**Natural special places**
- Table Mountain
- Signal Hill
- Two Rivers Urban Park

**Coastal special places**
- City/sea interface (V&A Waterfront)

**Urban special places**
- Grand Parade as part of a network of public spaces
- Athlone Power Station
- Maitland Cemetery

6.4.5 **Housing: informal settlement upgrade**

(Confirm Housing info)

According to Housing Directorate assessment, 10 informal settlements in District A are suitable for in-situ upgrades and accordingly prioritised. These are:
- Joe Slovo
- Maitland Cemetery
- Die Kraal, Bo-Kaap
- Pickwick Rd, Salt River
- Railway Rd, Woodstock
- Langa Intersite TRA
- Zone 2 Langa
- Langa Sportsfield
- Koekoe Town/ Woltemade stn
- Royal plakerskamp

A further four are to be relocated (?):

- Acacia Park
- 6th Avenue Kensington
- Wingfield Camp
- Pine Road, Woodstock
Plan P2: Urban Restructuring
6.5 Composite District Spatial Development Plan

Plan P3: Spatial development Plan
7 IMPLEMENTATION: LOCAL ACTION AREAS

7.1 Priority Capital Projects

- Central City development Strategy – precinct character analysis to inform priority capital spending in CBD
- Maitland Cemetery/ Voortrekker Road upgrade
- Completion of Salt River circle/ market precinct
- Station upgrades (Intersite) support

7.2 Priority Planning Interventions

- Central City development Strategy – precinct character analysis
- Paarden Eiland redevelopment
- Tall Buildings Policy
8 REFERENCES


DME (Department of Minerals and Energy) (2000), Mining Structure Plan Summary.


9 ANNEXURES

A Glossary of Terms

- **Accessibility grid**: a spatial concept which refers to a city wide multi-directional network of movement systems based on public transport as the foundation to this system. It operates in a grid like manner offering equitable access across the city moving away from the current radial system which focuses on access to one centre. The accessibility grid is split into the primary grid which focuses on supporting city wide access (line haul public transport, NMT, freight and mobility) and a secondary grid, feeding the primary grid (and including community public transport services, NMT and local mobility). An associated system of intensive urban activity is envisaged as building onto this grid, ensuring that adequate people thresholds live and work in close proximity to and can support the public transport systems.

- **Activity route**: a route of metropolitan significance characterised by continuous development including centres or nodes, mixed land uses, linear commercial and business developments, light industry, institutions and social facilities. It is also supported by medium to higher density residential development and characterised by direct access and interrupted movement flows especially at bus and taxi stops and traffic lights. This kind of route is pedestrian orientated in sections.

- **Activity street**: Local street section of concentrated activities including mixed land uses, businesses, local institutions and facilities public transport and higher-densities (including higher-density zones). Local area road which allows for a high degree of access to activities (including pedestrians). Direct access with stop-start movement patterns including the provision of public transport. Intense pedestrian activity is accommodated.

- **Agricultural / rural area**: area outside the proposed urban edge to be managed as a rural or agricultural environment with the necessary controls and guidelines.

- **Aquifer**: Area identified as reflecting physical extent of a water-bearing layer of soil, sand, gravel, or rock that will yield significant usable quantities of water.

- **Biodiversity network**: A fine-scales systematic conservation plan for the metropolitan area that represents the minimum area required to meet local and national biodiversity targets.

- **Cemetery**: a place for the burial of human remains, and may include ancillary buildings such as an office and chapel, but does not include a crematorium.

- **Critical public link**: Route link / public access that does or should serve to provide access to special places/destinations and/or is associated with a existing or potential positive experiential quality relating to the surrounding environment along its length. Critical public links identified as part of the UR&U plan serve to indicate the need for authority intervention to take advantage of the opportunity that exists.

- **C'MOSS**: or Cape Metropolitan open space system. An inter-connected and managed network of open space which supports interactions between social, economic and ecological activities, sustaining and enhancing both ecological processes and human settlements. It includes nature areas, and active and passive recreation areas such as sports fields and parks, but to promote interconnection and multi use also includes cemeteries, detention ponds, servitudes, river corridors and road reserves.

- **Commercial / business area**: general business activity and mixed-use development of a medium to high intensity. Whilst the focus of development of these areas is commercial (office and retail development) a mix of uses including high and medium density residential development could be appropriate in these areas. Industrial development is generally not suitable in these areas.
- **Connector route**: significant city-wide or district movement route which reflects a mobility function. Abutting land uses generally reflect open space or other natural or agricultural resources.

- **Destination / special place**: Places where there is a coincidence of qualities that make for a significant landmark that could become part of the identity of Cape Town. These qualities could be scenic, natural, cultural and historical. Due to these qualities, these places hold potential for exploiting economic opportunities particularly in relation to their role as destinations for locals and tourists.

- **Development route**: Major city-wide, or district, movement routes accommodating line haul public transport along which there may be interrupted flows at traffic lights and intersections. Expressways (at grade) with fast moving traffic sections may form part of the development route. Generally, very limited direct access but with development and commercial/business complexes linked to parallel and connecting service roads. Could include short stretches of activity route type development, mixed land uses and higher-density areas.

- **District park**: Park of landscaped / maintained open space with recreational facilities which serves the needs of several surrounding local communities or suburbs. Generally multifunctional, can include formal & informal recreational facilities, sports facilities including kick-about areas, playing fields & playgrounds (perhaps with play equipment). The diversity of activities caters for different age groups & may include a special interest component and/or a natural feature (e.g. river, water body or nature conservation area).

- **Flood prone areas**: Areas that are either susceptible to inundation by the 1:50 year recurrence flood (flood risk areas) or are part of the flood fringe (comprises the area between the 1:50 year flood line and the 1:100 year flood line) and which should be managed in terms of the catchment management policies and bylaws.

- **50yr flood line**: Line to which flooding is likely to occur on a 50 year time interval

- **100yr flood line**: Line to which flooding is likely to occur on a 100 year time interval.

- **Heritage resource improvement**: Area or place that holds opportunity in terms of its heritage resource value. Its indication in the UR&U plan. Areas for heritage resource improvement identified as part of the UR&U plan serve to indicate the need for authority intervention to take advantage of the opportunity that exists.

- **Highly significant agricultural area**: Area identified as critical to maintain as active and intensive agricultural area.

- **Industrial area**: Area proposed to accommodate manufacturing and related processes. Some allowance could be made for non-industrial activities, but these should not compromise the general use of the area zoned for industry. In these areas, the intensive nature of the industrial activity or the scale of the operation could generate some negative impact on adjacent properties.

- **Informal settlement**: settlement area consisting of informal structures, the occupants of which may or may not have rights to the property or land upon which they reside.

- **Intensification area**: Area identified for intensification of land use through encouraging greater intensities of economic activity, particularly in the form of mixed use development as well as areas where residential densification should be promoted. These areas generally are identified to reinforce the structure set up by the accessibility grid / structuring routes.

- **Metropolitan park**: Park of landscaped / maintained open space with recreational facilities or an aspect of special interest which serves the needs of the metropolitan community. Generally significant in size and tend towards being large-scale multifunctional parks. Likely to be integrated with other large scale public facilities such as formal sports fields or with natural areas or including natural features such as a river or water body.

- **Mixed use development**: Area of existing or proposed horizontal and/or vertical integration of suitable and compatible residential and non-residential land uses within the same area or on the same parcel of land. The concept implies context appropriate
intensity of land use which should facilitate efficient public transport and a vibrant local urban environment.

- **Other structuring open space**: open space which is not part of the biodiversity network or significant agricultural areas, but has been identified to promote access to open space for active and passive recreation. Whilst the focus is on areas that usable and accessible for most of the year, the identification has included cemeteries, detention ponds, servitudes, river corridors and road reserves in order to promote the notion of a linked open space system.

- **Other structuring route**: routes which provide structure (ordering land use configuration and intensities) to local areas and may accommodate a mixed activity / mobility function, but do their role in accommodating activity is less intense than activity routes/streets.

- **Potential high density development**: Area proposed for new higher density development where the gross density should average 40+ du/ha. The achievement of this target could occur via a range of housing typologies and varying net densities across the area. The development of required community facilities and open space should be addressed as part of the development of this area. Controlled opportunities for home employment and low intensity mixed use development could be considered in these areas.

- **Potential medium density development**: Area proposed for new medium density development where the gross density should average 25-40du/ha du/ha. The achievement of this target could occur via a range of housing typologies and varying net densities across the area. The development of required community facilities and open space should be addressed as part of the development of this area. Controlled opportunities for home employment and low intensity mixed use development could be considered in these areas.

- **Potential low density development**: Area proposed for new lower density development where the gross density could average 10-25du/ha. The achievement of this target could occur via a range of housing typologies and varying net densities across the area. The development of required community facilities and open space should be addressed as part of the development of this area. Controlled opportunities for home employment, additional dwellings and low intensity mixed use development could be considered within these areas.

- **Proposed cemetery**: Area identified by the City as a preferred site for a new cemetery following detailed technical investigation and consideration of alternatives.

- **Public transport interchange upgrade**: Proposed intervention which implies upgrading of a public transport interchange in terms of its role in facilitating movement, accommodating economic development as well as reflecting a positive environment. Interventions could include the development or improvement of movement infrastructure, public space and/or landscaping.

- **Public transport interchange**: public transport interchange which supports the transfer of public transport users between modes (rail/bus/taxi), but also functions to support economic activity.

- **Railway line extension**: Proposed and planned extension of the existing railway network.

- **Railway station upgrade**: Proposed intervention which implies upgrading of the physical station buildings and / or station environment. This could include the development of station forecourts, public access and landscaping intervention which may occur on land holdings of Intersite and/or other surrounding public land owners.

- **Sports and recreation areas**: areas where a high order (metropolitan) park and or sports facility exists or is proposed.

- **Strategic site**: A land parcel or group of land parcels which due to its/their location or other unique attributes holds the potential to impact significantly on planning policy objectives such as densification and integration and in so doing make a significant contribution to restructuring the city.
- **Urban civic precinct**: an area where public investment and/or improved urban management is required as a precondition for an improvement in the local social and economic conditions. These areas are generally strategically located to ensure that public investment has the greatest impact on the most number of people.

- **Urban civic upgrade**: The demarcated line and interrelated policy that serves to manage, direct and limit urban expansion. The edge may perform so as to protect valuable natural and agricultural environments abutting urban settlement from urban encroachment/sprawl (resource boundary) or redirect the form, pattern and aerial extent (footprint) of urban growth towards compaction and intensification (urban growth management boundary) towards more efficient city functioning especially in the provision of services and public transport. The latter is likely to be review from time to time in line with the criteria set in terms of the urban edge policy.

- **Urban Freeway**: Metropolitan scale freeways, or sections thereof, supporting large volumes of passing traffic from which development opportunities can be easily generated/created in surrounding areas connecting via the freeway off-ramps. The focus is on the mobility function of the route.
B Environmental Attributes

Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCLME</td>
<td>Benguela Current Large Marine Ecosystem</td>
</tr>
<tr>
<td>CFR</td>
<td>Cape Floral Region</td>
</tr>
<tr>
<td>CMOSS</td>
<td>Cape Metropolitan Open Space System</td>
</tr>
<tr>
<td>CoCT</td>
<td>City of Cape Town</td>
</tr>
<tr>
<td>CSIR</td>
<td>Council of Scientific and Industrial Research</td>
</tr>
<tr>
<td>D:EA&amp;DP</td>
<td>Department of Environmental Affairs and Development Planning</td>
</tr>
<tr>
<td>DEAT</td>
<td>Department of Environmental Affairs and Tourism</td>
</tr>
<tr>
<td>DWAF</td>
<td>Department of Waster Affairs and Forestry</td>
</tr>
<tr>
<td>IMEP</td>
<td>Integrated Metropolitan Environmental Policy</td>
</tr>
<tr>
<td>IPWIS</td>
<td>Integrated Pollutant and Waste Information System</td>
</tr>
<tr>
<td>MAR</td>
<td>Mean Annual Runoff</td>
</tr>
<tr>
<td>Mm³</td>
<td>million m³</td>
</tr>
<tr>
<td>PNE</td>
<td>Protected Natural Environment</td>
</tr>
<tr>
<td>SABCA</td>
<td>South African Butterfly Conservation Assessment</td>
</tr>
<tr>
<td>SANBI</td>
<td>South African National Botanical Institute</td>
</tr>
<tr>
<td>SES</td>
<td>Socio-Economic Status Index</td>
</tr>
<tr>
<td>USGS</td>
<td>United States Geological Survey</td>
</tr>
<tr>
<td>VOC</td>
<td>Vereenigde Oost-Indische Compagnie - Dutch East India Company</td>
</tr>
<tr>
<td>WTW</td>
<td>Water Treatment Works</td>
</tr>
<tr>
<td>WWTW</td>
<td>Waste Water Treatment Works</td>
</tr>
</tbody>
</table>

1. Introduction

District A is one of the eight districts comprising the City of Cape Town (CoCT) municipal area. The unique attributes of this district, as well as the pressures facing it, need to be well understood to enable developers and planning authorities to achieve a balance between environmental sustainability, social equity and economic development. The following sections contain a description of the environmental attributes of District A.

District A is bordered by District B to the north, District D to the east and Districts G and H to the south. The District’s western half is bounded by Table Bay and the Atlantic Ocean to the north and west and Table Mountain’s south-eastern upper contour to the south and east. The eastern part of the District is bordered by the N1, N7 (Vanguard Drive) and N2 highways. The district covers approximately 107km².

District A comprises the main commercial and tourist area of the city. It includes the Central Business District (CBD), the City Bowl and the Atlantic Seaboard – all of which are prominent and globally recognised features of Cape Town – as well as the significant economic infrastructure of the Port of Cape Town and the V & A Waterfront, one of the most visited tourist attractions nationwide. The district contains densely populated areas as well as undeveloped land that form part of the world-renowned Table Mountain National Park (TMNP). Residential areas are a mix of affluent as well as middle and lower income areas and there is a low proportion of informal settlements.

Ecologically sensitive areas include Table Mountain, an international landmark and the northern portion of the Table Mountain National Park (TMNP). The District also comprises Robben Island, located in Table Bay, which is a popular tourist destination and was declared a World Heritage Site in 1999.
2. Geology, Topography and Soils

2.1. Geology

The underlying rock formations of an area, i.e. the area’s geology, comprise the foundation of its physical environment. The geology of an area is shaped by hydrological and weathering processes, which create the topography of the area. The underlying geology also gives rise to various soil types, which influence the indigenous fauna and flora of an area, as well as human agricultural practices.

The Cape Peninsula is composed of three main rock formations of varying ages (after http://www.sanparks.org/parks/table_mountain/conservation/geology.php):

- **The Malmesbury Group**, around 540 million years old, consists of dark grey mudstones and lighter coloured sandstones;
- **Cape Granite**, around 540 million years old, is much harder and coarse-grained characterised by large white feldspar crystals, shimmering flakes of black mica and grey glassy quartz. This formation is the foundation for most of the Table Mountain Chain; and
- **Table Mountain Group**, only 520 million years old, are extremely weather-resistant sedimentary rocks and currently form a geological formation that is approximately 800m thick.

The **Malmesbury Group** forms the basement of much of District A. Malmesbury Group rocks are not often exposed, as they weather quickly, and are mostly covered by soil or windblown sand (Compton, 2004). However, examples of this formation can be seen on Signal Hill and the lower slopes of Devil’s Peak as well as along the rock Sea Point shoreline and all around Robben Island where it forms a wave-cut platform. Many tall buildings in the Cape Town CBD are founded on these rocks (UCT Department of Geological Sciences).

The **Cape Granite** batholith (a rock mass formed by the upwelling of magma) intruded into the Malmesbury Group as molten rock and crystallized deep in the earth, but has since been exposed by prolonged erosion. (UCT Department of Geological Sciences). Lion’s Head is a good example of a granite outcrop, and the characteristic spheroidal shapes of granite boulders, well displayed around Clifton and Camps Bay, are a result of preferential weathering along intersecting fractures.

The contact zone where the Malmesbury Group was intruded by molten Cape Granite can be seen at Sea Point and was made famous by Charles Darwin during his voyage of scientific discovery on H.M.S. Beagle in 1844 (UCT Department of Geological Sciences). The site was declared a national monument in 1953 and bears a plaque explaining its significance.

Younger sedimentary rocks of the **Table Mountain Group** lie above the unconformity of the Malmesbury shales and the Cape Granite intrusions. Many of the Western Cape’s mountain ranges are formed primarily of Table Mountain Sandstone, including the famous Table Mountain that dominates District A. The Table Mountain Group is comprised of three formations:

- **The Graafwater Formation**: around 25m-65m thick and consists of sandstone and mudstone in red and purple hues, best seen in road cuttings on the slopes of Table Mountain;
- **The Peninsula Formation**: around 700m thick and comprised of light grey, pebbly quartzitic sandstones, forming the bulk of Table Mountain and visible on the exposed cliffs of the mountain; and
- **The Pakhuis Formation**: tillite (a lithified glacial outwash gravel), occurs on the highest points of Table Mountain and was deposited at a time when the Gondwana landmass was situated close to the South Pole (UCT Department of Geological Sciences).

The most recent geological formations include the Springfontyn (part of the Sandveld Group) and other Quaternary (~2 million year old) formations (Reid et al., 2001). The Springfontyn Formation was developed through the deposition of windblown sand (an aeolian deposit), consisting of reddish to grey, unconsolidated quartzose aeolian sand and is most common in
the flatter, eastern parts of District A. Recent marine sediments are particularly prominent on Robben Island, where shell-bearing dune sands overlay the Malmesbury basement over much of the interior of the island and have calcretised to form the limestone that was famously quarried by Nelson Mandela during his imprisonment on the island (UCT Department of Geological Sciences).

2.2. Topography

The Cape Peninsula has a varied and dramatic terrain, dominated by the spectacular Cape Peninsula mountain chain, a 56 km long spine of mountains that extends from Cape Point in the south and terminates majestically at the iconic Table Mountain in the north.

The topography of District A is dominated by Table Mountain, Cape Town’s most prominent and famous feature. The ‘table’ itself, an approximately 3 km-long, level plateau, runs in an east-west direction. The highest point (1 084 m above sea level) of Table Mountain, and in fact the entire Cape Peninsula mountain chain, is located towards the eastern end of the plateau, marked by Maclear’s Beacon (a stone cairn built in 1865 by Sir Thomas Maclear for trigonometrical survey). The plateau is flanked by Devil’s Peak to the east and by Signal Hill and Lion’s Head to the west, all of which form the dramatic backdrop to the City and the Table Bay harbour. These mountain features drop off rapidly to form the natural amphitheatre of the City Bowl.

A large section of the Foreshore and Sea Point area is situated on fill material, from an extensive land reclamation project initiated in the 1930’s to rejuvenate and expand the City and the harbour. The new Duncan Dock had to be built half a mile out to sea and required a considerable amount of dredging. The spoil was used to reclaim the area between the dock and the original shoreline, totalling approximately 194 hectares (Durbach, 2008).

The landscape of District A has been shaped by prolonged erosion that has removed large parts of the once continuous Table Mountain Group sandstones, leaving high residual mountain ridges and the flat, low-lying expanse of the Cape Flats to the east (the eastern extent of District A, including Pinelands, Maitland and Langa, forms the start of the Cape Flats). Where faults occur in the rock, natural erosion has cut across and displaced the upper rock layers, resulting in the formation of deep ravines and gorges carved out down the flanks of the remaining mountains. The Twelve Apostles, an impressive range of peaks that run southwards along the Atlantic coast from of the back of Table Mountain, are separated by deep ravines that are a good example of this erosion process.

The coastline of District A is reasonably varied, and includes the world-renowned sandy beaches of Camps Bay and Clifton along the western coast. The northern shoulder of the Peninsula, encompassing Sea Point and Greenpoint, is characterised by a rockier shore, with small bays and mainly gravel (and some sandy) beaches. Robben Island, located in Table Bay, is very flat and low-lying with the highest point (Minto’s Hill) being only 24 m asl. The shoreline of Robben Island is almost entirely rocky and drops fairly steeply into the sea.

2.3. Soils

Soil is a term used broadly to describe the surficial or uppermost layer of the ground. Soil is largely the product of mechanical and chemical weathering of the parent material (geological rock type) and its formation is determined by a number of climatic processes, the nature of the underlying material and the geological and topographical characteristics of an area, such as slope. Soils have an important biological function in supporting plants and animals as well as an economic function in supporting agriculture.

Three main soil types occur in District A (see Error! Reference source not found.):

1. Red and yellow apedal soils: these soils occur over the south-eastern section of the district, i.e. predominantly covering the plateau and eastern slopes of Table Mountain. These shallow, acidic, sandy soils derived from Table Mountain Group sandstone are structureless and generally nutrient poor. Although they provide an apparently
inhospitable medium for plant growth, fynbos vegetation has adapted to these harsh growing conditions (McVicar, 1991). Two subtypes are present in the District:

a. (Ah) Red and yellow apedal soils with <15% clay content, resulting in nutrient-poor soils with poor water retention properties, occur over most of the plateau and eastern slopes of Table Mountain (where soil is actually present).

b. (Ai) Red and yellow apedal soils with >15% clay content, resulting in a slightly higher nutrient status, occur mainly outside the eastern edge of the district, but with a small section occurring in the south eastern corner.

2. Shallow, non-hydromorphic soils on weathering rock or clayey substances (Glenrosa forms: Fa) occur over the western and northern mountain slopes. These generally shallow soils consist of topsoil directly underlain by weathered Cape Granite, and are usually found in moister areas or where parent material is acidic and little lime exists.

3. Soils with a diagnostic ferrihumic horizon (Ga) occur in the northern section of the district (underlying the City itself) and the eastern portion of the district (Observatory, Pinelands, Maitland). These deeper, sandy, calcareous soils dominate the low-lying areas of the Cape Flats. They are less acidic than the previous types and their nutrient status, while still low, is higher than the red and yellow apedal soils. The low-lying nature of the environment in which they typically occur implies that these soils are often subject to waterlogging during the winter months (McVicar, 1991).

The City's Agricultural Land Review (CoCT, 2008b) did not identify any areas with agricultural potential in District A.

2.4. Mineral Resources

The western portion of District A contains an economically significant sand resource, which underlies Pinelands, Kensington and parts of Maitland, Thornton, Epping Industrial and Langa (DME, 2000). It is part of a much larger sand deposit that stretches from close to the False Bay coast in District G to the south into the southern area of District B to the north. Urban development has taken place on virtually the entire portion of the deposit that falls within District A, and it might thus not be feasible to mine this resource in the district.

3. Hydrology

3.1. Hydrology

District A lies within the winter rainfall region of the Western Cape. The district experiences a mean annual precipitation of 760 mm and mean annual evaporation of 1 400 mm (River Health Programme, 2005). However rainfall can be considerably higher on Table Mountain, which is the source of many of the smaller rivers and streams in the district. The district contains a number of rivers, including the Salt, Liesbeek, Black and Elsieskraal Rivers, as well as a number of small streams and rivers flowing from the Table Mountain Range. Flows are generally much stronger in winter than in summer. The area also have a variety of natural wetlands.

3.1.1. Rivers

The eastern portion of the district is dominated by the Salt River and the lower reaches of its tributaries, namely the Elsieskraal, Black and Liesbeek Rivers. The western portion of the

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15 The agricultural potential of a farm is fundamentally determined by the availability and quality of the natural resources; namely soil, climate and water, and for extensive grazing purposes, also the composition of the natural vegetation (CoCT, 2008a).
district contains a number of streams that drain Table Mountain, including the Camps Bay, Diep, Kasteelport and Lekkerwater Rivers.

The Salt River system is the largest in District A. The Salt River is 2.5 km long, beginning at the confluence of the Liesbeek and Black Rivers and draining into Table Bay just north of the Port of Cape Town (eWisa). The Salt River system has a total catchment of approximately 200 km$^2$, draining Table Mountain, the Cape Flats and the Tygerberg Mountains and thus extending beyond the borders of District A into Districts H, G, D and C (River Health Programme, 2005).

The main tributaries of the Salt River are the Elsieskraal River, which drains the Tygerberg Hills, the Black River, which drains the north-western portion of the Cape Flats, and the Liesbeek River, which drains the east-facing slopes of Table Mountain (River Health Programme, 2005). Other tributaries include the Jakkelsvlei (located in District D) and the Vygekraal, Blomvlei and Kromboom Rivers (all located in District G).

The rivers in the eastern part of District A are in poor condition. They and their tributaries flow through densely urbanised, industrial and agricultural areas and large stretches of the river courses have been canalised (see Table 9-1), leading to habitat loss and severely reducing their ecosystem functioning. The Black River in particular has also been invaded by alien aquatic weeds. Treated wastewater is discharged into the Black River from the Athlone (73 million m$^3$/year) and Borchards Quarry (12 million m$^3$/year) Wastewater Treatment Works (WWTW) (River Health Programme, 2005).

Table 9-1: Canalisation of Salt River tributaries.

<table>
<thead>
<tr>
<th>Tributary</th>
<th>Approximate percentage of river that is canalised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elsieskraal</td>
<td>65%</td>
</tr>
<tr>
<td>Black River</td>
<td>55%</td>
</tr>
<tr>
<td>Liesbeek River</td>
<td>40%</td>
</tr>
<tr>
<td>Vygekraal</td>
<td>50%</td>
</tr>
<tr>
<td>Kromboom</td>
<td>85%</td>
</tr>
</tbody>
</table>

*Source: River Health Programme (2005)*

As a result, the health$^{16}$ of the lower reaches of the two main tributaries of the Salt River has been classified as fair to poor by the River Health Programme, with some stretches of the Black River being of unacceptably low quality. The Liesbeek River suffers particularly from poor health of the riparian zone and poor condition of its invertebrate communities, while the Black River has unacceptably low water quality and invertebrate community levels (River Health Programme, 2005) (see Table 9-2). These ratings indicate that the health status of the Salt River is also poor, as it is canalised and therefore essentially acts as a conduit for the poor quality water received from the Black and Liesbeek Rivers.

Table 9-2: Health status of major rivers in District A.

<table>
<thead>
<tr>
<th>River</th>
<th>River health</th>
<th>Most notable problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liesbeek River – lower reaches</td>
<td>Fair to poor</td>
<td>Release of treated effluent from urban areas and run-off</td>
</tr>
<tr>
<td>Black River – lower reaches</td>
<td>Poor to unacceptable</td>
<td>Infestation with alien vegetation, and infestation with alien fish in lower reaches</td>
</tr>
</tbody>
</table>

$^{16}$ The National River Health Programme assesses the health of rivers by measuring selected ecological indicator groups that represent the condition of the larger ecosystem: habitat integrity, riparian vegetation, fish assemblage, aquatic invertebrates and water quality. A healthy river has the ability to provide ecosystem goods and services such water supply, breakdown of pollutants, conservation, flood attenuation, natural products, recreation and spiritual rituals which contribute to human welfare and economic growth (River Health Programme, 2005).
Canalisation

Source: River Health Programme (2005)

*Note: The order of rankings is Natural, Good, Fair, Poor, Unacceptable (River Health Programme, 2005)

The rivers in the western portion of the district, including the Camps Bay Stream and Diepsloot, as well as the Kasteelpoort, Platpoort and Lekkerwater Rivers, drain the western slopes of Table Mountain and flow into the Atlantic Ocean. These are all small, short rivers. They have been less severely encroached on by development and fall partly within the protected area of the TMNP. Further information on river pollution is provided in Section 7.3. Several streams that drain Table Mountain northwards, including the Platteklopi and Silver Streams, flows under the CBD in mostly underground canals towards Table Bay and the harbour.

There are no significant wetland systems within District A, but there are riparian wetlands associated with the Black and Liesbeek Rivers within the Two Rivers Urban Park (the Raapenberg, Pallotti and Valkenberg wetlands). The Raapenberg and Pallotti wetlands are all that remain of the once extensive wetland system that originally occurred along the Black River (CoCT, 2002).

3.1.2. Dams

Five moderately-sized, in-stream dams are located within District A on top of Table Mountain, namely: the Woodhead, Hely-Hutchinson, Victoria and Alexandra Reservoirs and the De Villiers Dam. The dams were built between 1897 (Woodhead Reservoir) and 1907 (De Villiers Dam) to provide water to the residents of Cape Town. The five dams yield approximately 4 million m³/annum and currently provide approximately 1.2% of the total water supply to the greater Cape Town area (River Health Programme, 2005).

The Molteno reservoir, located in the De Waal Park on the foot of Table Mountain, was constructed in the late 1800s to supply water to Cape Town.

3.2. Groundwater

The District has various aquifers storing groundwater. However, these have low yields and are therefore much less significant than many of the aquifers found in other districts of the CoCT. Groundwater abstraction in the district is mostly limited to private boreholes for domestic/garden use.

Aquifers are typically classified into three types, all of which occur in District A. These are fractured aquifers, intergranular aquifers and fractured and intergranular aquifers17 (DWAF, 2000).

Most of the District west of the Salt River, where Table Mountain Group and Malmesbury Group deposits are located, is situated on a fractured aquifer (see Error! Reference source not found.), which has low median yields of 0.1–0.5 litres per second (l/s) (DWAF, 2000).

An intergranular aquifer is located east of the Salt River, where Springfontyn deposits of the Sandveld Group are located (see Error! Reference source not found.). The Sandveld aquifer is essentially a coastal aquifer, extending along the West Coast from False Bay to Saldanha. The aquifer is most productive in the south at False Bay in Districts G and F and becomes gradually less productive as it extends north into Districts A and D. The south-

17 Intergranular aquifers are typically found in unconsolidated but occasionally semi-consolidated Tertiary-Quaternary coastal deposits and alluvial deposits along river terraces. Fractured aquifers are present in fractured and fissured bedrock resulting from decompression and/or tectonic action, with groundwater predominantly located within fractures and fissures in sedimentary and metamorphic rocks. Fractured and intergranular aquifers occur in largely medium to coarse grained granite, weathered to varying thicknesses and in jointed and occasionally fractured bedrock (DWAF, 2001).
eastern corner of District A falls within the part of the aquifer that has a moderate yield of 0.5–2.0 ℓ/s, while most of the intergranular aquifer falling within District A has a low median yield of 0.1–0.5 ℓ/s (DWAF, 2000).

The western coastal area of the district is underlain by the Cape Granite Suite and is situated on an *intergranular and fractured aquifer* that has a very low median yield of up to 0.1 ℓ/s in this area (DWAF, 2000).

Groundwater quality in the District is generally very good to moderate. The quality (electrical conductivity\(^8\)) of groundwater in the southern half of the peninsula and in a strip reaching from the north-western corner of False Bay to the border of Districts H and A ranges from 0–70 milli Siemens per meter (mS/m), indicating very good quality. Groundwater in the northern half of the peninsula and along the eastern border of District H has higher conductivities of 70–300 mS/m, indicating moderate quality (DWAF, 2000).

Due to the proximity of the aquifers to the sea and frequent extension to below sea level, coastal aquifers are vulnerable to saline water intrusion, especially if there is excessive abstraction or mismanagement of groundwater. Careful control of abstraction rates is thus important to preserve the quality of the groundwater (DWAF, 2000).

4. **Biodiversity**

The City of Cape Town falls within a unique and globally significant biodiversity hotspot. The City’s biodiversity is a valuable part of its heritage and is an important driver of tourism, economic growth and social upliftment in the City.

4.1. **Vegetation**

The City of Cape Town falls within the extreme south-west of the Cape Floral Region (CFR), one of the smallest but richest plant kingdoms in the world. The biodiversity of the CFR is of international significance. The fynbos biome comprises some of the remaining tracts of some of South Africa’s rarest vegetation types, namely Sand Fynbos and Renosterveld. Approximately 70% of the plant species found in the CFR are found nowhere else on earth.

Eighteen different national vegetation types\(^19\) and three azonal vegetation types\(^20\) occur within the City of Cape Town. Eleven of these are considered Critically Endangered, three are Endangered, three are Vulnerable and the remaining four are considered of Least Concern.

With the exception of the TMNP (which comprises approximately 27% of the District), most of District A is highly developed and transformed, and very little natural vegetation remains. The national vegetation types that occur within District A in the City of Cape Town are (see Error! Reference source not found.):

- Cape Flats Dune Strandveld;
- Cape Flats Sand Fynbos;
- North and South Peninsula Granite Fynbos;
- Peninsula Sandstone Fynbos;
- Cape Winelands Shale Fynbos incorporating Peninsula Shale Fynbos;
- Peninsula Shale Renosterveld; and

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\(^8\) Conductivity is a measure of the ability of water to pass an electrical current. Each stream tends to have a relatively constant range of conductivity that, once established, can be used as a baseline for comparison with regular conductivity measurements. Significant changes in conductivity could be an indicator that a discharge or some other source of pollution has entered a stream.

\(^19\) As defined by the South African National Biodiversity Institute (SANBI).

\(^20\) Vegetation types along rivers, the seashore, in pans and in salt marshes.
Southern Afrotemperate Forest.

A brief description of each of these vegetation types is provided below:

**Cape Flats Dune Strandveld** occurs on calcareous sand of marine origin. It occurs in flat to slightly undulating dune areas and is characterised by tall, evergreen hard-leaves shrubland with abundant grasses, annual herbs and succulents interspersed. Cape Flats Dune Strandveld is endemic to Cape Town but supports few endemic species compared to fynbos. This vegetation type is considered Endangered and about 56% of it has been transformed. In District A, Cape Flats Dune Strandveld occurs in a small, isolated patch at the confluence of the Liesbeek and Black Rivers (within the Two Rivers Urban Park). A narrow band of vegetation along the Atlantic seaboard also contains Cape Flats Dune Strandveld elements.

**Cape Flats Sand Fynbos** occurs mainly on deep, leached, acid sands (Mucina et al., 2006) at altitudes of 20–200m. It is characterised by typical Fynbos families such as proteas, ericas, restios (reeds), buchu and geophytes (bulbs). The vegetation comprises dense, moderately tall shrubland, interspersed with restios. Cape Flats Sand Fynbos is exceptionally high in species diversity and has a high number of Vulnerable, Endangered and Critically Endangered species (some 94 Red Data species occur on the remnants within Cape Town). Five of its plant species have become extinct. Cape Flats Sand Fynbos is listed as Critically Endangered and more than 85% of this vegetation type within the City has been transformed. Many of the remaining patches are small pockets surrounded by urban areas. In District A, Cape Flats Sand Fynbos occur only in isolated areas in the Maitland area (within the Wingfield military base and around the Acacia Park residential areas), and along the Black River (see Error! Reference source not found.).

**North and South Peninsula Granite Fynbos** are endemic to the CoCT. The vegetation type occurs on deep, loamy, sandy soils derived from the Cape Granite Suite on the steep to gentle, lower slopes (below the sandstone slopes) of the Table Mountain range on the Cape Peninsula (at altitudes of 0-450m). The vegetation is diverse and consists of moderately dense to open trees in tall, dense, proteoid shrubland, dominated by asteraceous and proteoid fynbos. Patches of restios and ericaceous fynbos occur in wetter areas. Along with Peninsula Sandstone Fynbos, this vegetation type is threatened by an increase in population density and is considered Endangered. The vegetation type is conserved in the TMNP and the Kirstenbosch National Botanical Garden; but much of the conserved fynbos has transformed to Afrotemperate Forest due to fire protection policies. In District A, North Peninsula Granite Fynbos occur on the lower, north-western slopes of Table Mountain and around Lions Head. South Peninsula Granite Fynbos occurs in the Oranjekloof area above Hout Bay.

**Peninsula Sandstone Fynbos** is endemic to the City of Cape Town and found on gentle to steep slopes over the enter Cape Peninsula on sandstone or mudstone of the Table Mountain Group. The vegetation is a moderately dense, tall proteoid shrubland over a dense, moderately tall ericoid shrubland, consisting of mostly proteoid, ericaeaceous and restioid fynbos with some asteraceous fynbos. The vegetation type is extremely rich in species that are endemic (146 known species) and/or Red Data-listed (65 known species). The vegetation is considered Endangered. (Rebelo et al: 2006)

**Cape Winelands Shale Fynbos** (incorporating Peninsula Shale Fynbos) occurs in District A on recent, non-aeolian colluvium (derived from Malmesbury Shales) on the steep north-eastern slopes of Table Mountain (Devil’s Peak), above De Waal Drive. This vegetation type consists of dense, moderately tall shrubland with proteoid fynbos dominating (Holmes, 2008). The vegetation is well-conserved but considered Vulnerable.

**Peninsula Shale Renosterveld** is also endemic to the City of Cape Town and occurs on Signal Hill and the lower slopes of Table Mountain and Devil’s Peak on clay soils derived from shale of the Tygerberg Formation. On south-facing and upper slopes, the vegetation merges with fynbos and on Devil’s Peak is frequently mowed for grazing by zebra and other grazing herbivores. The vegetation type consist of tall, open shrubland and grassland and frequent fires and lack of grazing result in the vegetation being very grassy in places (Holmes, 2008). Approximately 10% of the vegetation type is conserved in the Table Mountain National Park,
but 89% of it has been totally transformed by urban sprawl, cultivation and road infrastructure. The conservation target of 26% is therefore unattainable and the vegetation is considered Critically Endangered.

**Southern Afrotemperate Forest** occurs in small patches in the Table Mountain National Park. Only about 0.4% of this vegetation type occurs within the boundaries of the City of Cape Town with most occurring in the southern Cape. This vegetation consists of tall, multilayered afrotemperate forests dominated by yellowwoods, stinkwood, etc. with a well-developed shrub understorey and herb layers. Virtually all of this vegetation type occurring in Cape Town is conserved.

Vegetation biodiversity in District A is under pressure from urban development, wildfires, pollution and illegal harvesting of protected species.

### 4.1.1. Conservation Strategy

The conservation status of each of the vegetation types discussed above is shown in Table 9-3 below. Four of the vegetation types that occur in District A occur only within City of Cape Town and are considered Endangered or Critically Endangered.

**Table 9-3: Conservation status of national vegetation types within District A in the City of Cape Town.**

<table>
<thead>
<tr>
<th>Vegetation types</th>
<th>Current area within CoCT (km²)</th>
<th>% within CoCT</th>
<th>Conserved / managed within CoCT (%)</th>
<th>National* Conservation target (%)</th>
<th>National Ecosystem Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Flats Dune Strandveld</td>
<td>180</td>
<td>100</td>
<td>64</td>
<td>24</td>
<td>Endangered</td>
</tr>
<tr>
<td>Cape Flats Sand Fynbos</td>
<td>77</td>
<td>100</td>
<td>7</td>
<td>30</td>
<td>Critically Endangered</td>
</tr>
<tr>
<td>Peninsula Granite Fynbos</td>
<td>39</td>
<td>100</td>
<td>85</td>
<td>30</td>
<td>Endangered</td>
</tr>
<tr>
<td>Peninsula Sandstone Fynbos</td>
<td>209</td>
<td>100</td>
<td>97</td>
<td>30</td>
<td>Endangered</td>
</tr>
<tr>
<td>Cape Winelands Shale Fynbos**</td>
<td>22</td>
<td>37.5</td>
<td>73</td>
<td>30</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>Peninsula Shale Renosterveld</td>
<td>3</td>
<td>100</td>
<td>12</td>
<td>26</td>
<td>Critically Endangered</td>
</tr>
<tr>
<td>Southern Afrotemperate Forest</td>
<td>3</td>
<td>0.4</td>
<td>100</td>
<td>34</td>
<td>Least Concern</td>
</tr>
</tbody>
</table>

*As set by the National Spatial Biodiversity Assessment.

**Incorporating Peninsula Shale Fynbos

Source: Adapted from LAB, 2008 and MLA & GISCOE, 2007.

For two of the vegetation types, Cape Flats Sand Fynbos and Peninsula Shale Renosterveld, it is too late to achieve the necessary conservation targets for adequate conservation of this vegetation within the City. It is therefore crucial to conserve and/or manage all remaining areas of these vegetation types to ensure that this biodiversity is not lost (LAB, 2008).

According to the Biodiversity Network (2008), District A contains several sites of high conservation value (see Error! Reference source not found.). The CoCT has taken steps to ensure the conservation and protection of the unique biodiversity within its boundaries. The Integrated Metropolitan Environmental Policy (IMEP) contains a Biodiversity Strategy, adopted by the City in 2001, has several sectoral strategies, one of which is a Biodiversity Strategy, adopted by the CoCT in 2003. The Biodiversity Strategy has seven strategic objectives:

**STRATEGIC OBJECTIVE 1:** The enabling environment, policy, strategic and operational frameworks, capacity and systems required for effective biodiversity management in the City are effectively established.
STRATEGIC OBJECTIVE 2: Identified terrestrial and aquatic fresh-water priority sites and corridors are secured and effectively managed.

STRATEGIC OBJECTIVE 3: Sustainable socio-economic benefits and opportunities are identified, enhanced and maximised.

STRATEGIC OBJECTIVE 4: The control of priority invasive species is effectively established and maintained through coordination and management of the relevant City policies, strategies and eradication programmes

STRATEGIC OBJECTIVE 5: Appropriate opportunities are created for Environmental Education & awareness programmes and for stakeholder involvement in biodiversity conservation.

STRATEGIC OBJECTIVE 6: The Branch has the capacity, management and operational systems required to implement, monitor, evaluate and review its strategy and plans

Under Strategic Objective 2, the City has aligned its biodiversity conservation planning to the national planning under the National Environmental Management Biodiversity Act (No. 100 of 2004). This process has resulted in the identification of a network of sites (called the Biodiversity Network) that is needed to conserve a representative sample of the City Of Cape Town’s unique biodiversity and thus promote sustainable development. The City has adopted this plan subject to more detailed investigations of the sites and has recommended that the Biodiversity Network is declared a bioregional plan under the National Environmental Management Biodiversity Act.

In 2008, after extensive field verification of habitat condition, the biodiversity remnant layer was updated and the systematic conservation planning analyses used to identify the Biodiversity Network sites was re-run (Benn, 2008). At the same time the City took the opportunity to align its vegetation map with the 2004 (SANBI) national vegetation map, creating 55 local vegetation units that are nested within the national vegetation units. These vegetation units are used as biodiversity surrogates in the conservation plan. This means that the City may now report on progress relating to both local and national conservation targets.

4.1.2. Conservation Areas

Conservation areas in District A include the following:

The Raapenberg Bird Sanctuary, located within District A, is a Local Authority Nature Reserve of approximately 0.15km² located along the Liesbeek River north of the N2. Raapenberg is known as an important breeding site for many species of duck. The reserve forms part of the area known as the Two Rivers Urban Park, an area where the CoCT recognises the need to protect and rehabilitate ecological systems and where mutually beneficial relationships between people and the natural environment are encouraged.

About 16% of the Table Mountain National Park (TMNP) falls within District A. The TMNP is managed by South African National Parks (SANParks) and is considered to be one of the centres of endemism within the Cape Floral Region. The highest concentration of plant biodiversity within the Cape Floral Kingdom is found within the TMNP.

4.2. Fauna

Little is known about the fine-scale distribution of fauna within the CoCT, and species lists are generally available only for isolated sites such as proclaimed nature reserves. There is thus little quantitative data available for each district.

4.2.1. Fish

Only two indigenous freshwater fish species are currently recognized as occurring within the boundaries of the CoCT. However, the one species, Cape Galaxias (Galaxias zebra), has
been shown to comprise of at least 13 species across the Western Cape. Preliminary results have placed the Galaxias in the Liesbeek area of District A in the “mollus” lineage. This taxon has not been formally described as yet and the conservation status has yet to be assessed. Galaxias are found in flowing or standing water across the City and can be expected to occur in any suitable habitat in District A.

Cape Kurper (Sandelia capensis) is found throughout much of the Cape Floral Kingdom. The latest taxonomic evidence has shown that what was previously thought to be one species represents a species complex of at least five taxa. The distribution and conservation status of each of these needs to be confirmed and presently it is unclear which taxa would fall within District A. Within the CoCT, however, this fish has largely been eradicated from the Cape Flats and most remaining populations are in the upper reaches of streams and in dams in the mountain catchment areas.

4.2.2. Mammals

Of the 83 species of indigenous mammals found or presumed to occur within the CoCT, 18 species (excluding marine mammals) are included within the latest Red Data Book of the Mammals of South Africa (Friedmann and Daly, 2004). Eleven of these are found or could be expected to occur within District A. These include the insectivores: the Cape Golden Mole (Chrysochloris asiatica), Reddish-grey Musk Shrew (Crocidura cyanea), Greater Musk Shrew (Crocidura flavescens), Lesser Dwarf Shrew (Suncus varilla) and Forest Shrew (Myosorex varius). These are all categorised as being Data Deficient in the 2004 Red Data Book of the Mammals of South Africa, as very little is known about their life history and conservation status, but all are listed as Least Concern in the 2008 IUCN Red List of Threatened Species™ (IUCN, 2008). There are also six species of bat which could possibly occur within the district and which are considered Near Threatened in the 2004 South African Red Data Book (Least Concern in the 2008 IUCN Red List). Very little is known about the exact distribution of bats within the CoCT. Within the TMNP in District A, the Bat Cave on the Back Table is home to the only known roosting site of Egyptian Fruit Bat (Rousettus aegyptiacus) on the Peninsula. Any bat roosting sites identified within or near any proposed development would require a specialist report which would assess the significance of any potential impacts.

With regard to the larger terrestrial mammals that still occur within the District, all were assigned the conservation status of Least Concern in the 2004 South African Red Data Book (Friedmann and Daly, 2004). This indicates that the species are currently not threatened nationally, but on a City or District scale the species may be very close to becoming locally extinct. Their future survival in the district depends on the availability of larger natural open space to ensure that viable populations exist and persist. The ecological corridors linking important natural areas are essential for the continued survival of many mammal species.

4.2.3. Avifauna

Of the 361 bird species recorded within the CoCT, 38 species are listed as being threatened in the Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland (Barnes, 2000). Numerous threatened species found in the coastal and oceanic waters off Cape Town are pelagic seabirds, which breed in the southern ocean. These birds are therefore not associated with the mainland and need not be addressed in the EMF. However, the Endangered (as per the 2008 IUCN Red List) Bank Cormorant (Phalacrocorax neglectus) is regularly seen around the Cape Peninsula and they breed in District A on the isolated granite boulders of Bakoven. The Near Threatened Cape Cormorant (P. capensis) and Crowned Cormorant (P. coronatus) roost or feed along the coastline of District A. All three species breed on Robben Island.

African Black Oystercatchers (Haematopus moquini) are also classified as being Near Threatened and are found along the entire coastline. They breed on the ground, just above the high-water mark in summer and as such are very sensitive to disturbance from recreational beach goers and dogs.
The Near Threatened Old World Painted Snipe (*Rostratula benghalensis*) is a wetland bird which has Red Data status. These birds are secretive and are therefore seldom recorded. However, they may occur in District A from time to time as they can be encountered in any wetland with shallow vegetated fringes.

**Important Bird Areas (IBA’s) and other roost and breeding sites:**

Several pairs of the Near Threatened and enigmatic Peregrine Falcon (*Falco peregrinus*) are known to breed on the mountains in District A. The majority of these sites fall within the TMNP, however, there may be other pairs in the District which breed on suitable artificial structures.

Robben Island has been identified as an Important Bird Area (Site number: SA110) due to its important nature as a sea bird breeding site. This includes significant colonies of African Penguin (*Spheniscus demersus*), Bank Cormorant (*Phalacrocorax neglectus*), Swift Tern (*Sterna bergii*), African Black Oystercatchers (*Haematopus moquini*) and Hartlaub’s Gull (*Larua hartlaubii*). A large heronry is often active on the northeast part of the island.

### 4.2.4. Amphibian Fauna

Of the 27 species of amphibians which occur within the CoCT, 10 are listed in the Atlas and Red Data Book of the Frogs of South Africa, Lesotho and Swaziland (Minter et al., 2004). Two species are considered to be Critically Endangered, two Endangered, three Vulnerable and three Near Threatened.

Within District A, four threatened amphibian species are known to occur. These include the Critically Endangered Table Mountain Ghost Frog (*Heleophryne rosei*) and the Near Threatened Cape Peninsula Moss Frog (*Arthroleptella lightfooti*). Both of these are endemic to the Cape Peninsula and constitute the only endemic vertebrates to the CoCT. The Table Mountain Ghost Frog has a minute range and mostly occurs in the neighboring District H. Within District A, this species has been recorded from the cave systems on the Back Table and was historically known to occur in Platteklip Gorge. The Cape Peninsula Moss Frog is found throughout the Cape Peninsula Mountain chain in seepage areas in Peninsula Sandstone Fynbos and Southern Afrotemperate Forest.

Within District A, the Endangered Western Leopard Toad (*Amietophrynus pantherinus*) is known to occur within the Vincent Pallotti Wetlands, Oude Moulen, the Observatory and neighboring Raapenberg Bird Sanctuary. The population of Western Leopard Toads in District A is at very low levels and the habitat is intensely fragmented by development and major arterials. If the presence of this species is suspected on a site then a comprehensive assessment would need to be conducted.

The Vulnerable Cape Rain Frog (*Breviceps gibbosus*) occurs in this area are known to occur in the slopes of Lions Head and around Observatory. This species is not associated with wetlands and is often found in suburban gardens.

Amphibians are vulnerable to disturbance as they are sensitive to environmental factors such as water pollution and/or altered water regimes. The input of storm water into wetlands can have a significant negative influence on biodiversity. The effects of storm water entering wetlands of conservation significance would require a specialist report which would assess the significance of any potential impacts.

### 4.2.5. Reptile Fauna

Eight of the 57 species of reptile found or suspected to occur within the CoCT are considered to have Red Data status. The conservation assessment of South African reptiles is currently underway, so the status of some of the species found in the CoCT may change. However, two threatened reptiles could potentially occur in District A. These are the Near Threatened Yellow-bellied House Snake (*Lamprophis fuscus*) and the Vulnerable Cape Sand Snake (*Psammophis leightoni*). The Yellow-bellied House Snake is a secretive species which can be
expected to occur in wetland areas, while the Cape Sand Snake inhabits Strandveld and Sand Fynbos vegetation. Very little suitable habitat remains on the lowland areas of District A, so the occurrence of these species is unlikely.

4.2.6. Invertebrates

Little is known about invertebrates in District A. One butterfly species endemic to the Table Mountain Range now appears to have become extinct. The Peninsula Scarce Mountain Copper (*Trimenia malagrita malagrita*) was recently known to occur in two areas. The colony in the vicinity of Apostle Buttress above Llandudno was destroyed by a Eucalyptus plantation, while the last colony on Lion's Head appears to have been destroyed by too frequent fires (Jonathan Ball, pers. comm.).

5. Dune and Coastal Systems

Coasts are of unique importance in terms of biological and physical criteria, as well as for aesthetics, recreation, development and economic growth. The coast is defined as an area with a landward and a seaward boundary that includes:

- Coastal waters, which extend from the low water mark into the sea, up to the point where these waters are no longer influenced by land and land-associated activities;
- Coastline or sea shore, which is the area between the low and high water marks; and
- Coastlands, which are inland areas above the high water mark that influence or are influenced in some way by their proximity to coastal waters (these areas may stretch many kilometres inland) (DEAT, 2000).

The coastline of the CoCT supports a diverse range of marine and coastal ecosystems with over 80 rare and endangered species. Not only is Cape Town's coastal zone one of the most diverse and productive stretches of coastline in South Africa, it also has high levels of recreational activity and is a much sought-after living environment for residents and tourists. As such, the coastline is one of the City's most important assets from an ecological, social and economic viewpoint (LAB, 2008).

5.1. Characteristics

The coastline of District A commences just north of Logies Bay (north of Llandudno) and curves northwards on the Atlantic Ocean side of the Peninsula, past Oudekraal, Bakoven, Camps Bay, Clifton and around Mouille Point, extending westwards along Table Bay to Paarden Eiland. It incorporates the V&A Waterfront and the Port of Cape Town.

The western coastline of the Cape Peninsula is dominated by rocky shores, backed by steep mountain slopes that drop off into the sea. The rocky shoreline is interspersed with occasional sandy beaches, notably at Clifton and Camps Bay. The coastal zone from Mouille Point to Camps Bay is a mixed-use area (commercial, residential and recreation use activities) and the area south of Camps Bay is an undisturbed natural area with some recreational activities, mainly at the small sandy beaches. Approximately 4km of the coastline in the south of Table Bay comprises the Port of Cape Town (and V&A Waterfront) and consist of artificial shore protection and breakwaters. This section of the coastline is used for industrial and commercial activities.

The coastal area of District A, like the rest of the West Coast of South Africa, falls within the South-western Cape Bioregion, a marine bioregion that extends from Cape Columbine to Cape Point (DEAT, n.d.). The bioregion forms part of the Benguela Current Large Marine Ecosystem (BCLME), which extends from Angola to Cape Town (Atkinson and Clark, 2005). The coastal area of District A is located in the extreme south of the Benguela upwelling system, which stretches from Cape Point northward to Cabinda in Angola. The area has
extremely high primary productivity due to the upwelling of cold, nutrient-rich water in the region that feeds plankton. This supports a globally important biodiversity and high biomass of marine organisms (O'Toole et al., 2001). Some South Coast species reach the northern limits of their distribution in this area, largely due to mixing of water from both the Agulhas and Benguela systems, giving it slightly higher species richness compared to further north in the bioregion (Griffiths and Robinson, 2007).

The diversity of habitats, ranging from rocky coast and sandy beaches and dunes to rocky and sandy sub-tidal areas and the pelagic zone, supports a diversity of marine life. Species richness on the coast tends to be highest on rocky shores, which offer a high variety of habitats. Beaches support a lower number of species as they have a smaller range of habitats and are extremely dynamic due to the influence of weather and waves (CoCT, 1999). Dunes occur at the landward side of sandy beaches and form the sole habitat of several species of specially adapted plants as well as providing nesting sites for some shorebirds.

The water level changes by less than 2m between high and low tide, so that tides impact on a relatively narrow band of shoreline (CSIR, 2003).

The natural beauty of the coastal areas of the South-western Cape Bioregion, has enabled the development of a significant local tourism industry. However, coastal habitats are rapidly being degraded in certain areas by pollution (mostly industrial) and inadequately managed coastal developments and activities.

The southern part of District A (south of Mouille Point) falls within the TMNP’s 1 000km² Marine Protected Area (MPA) around the Cape Peninsula. Fishing is allowed in most of the MPA, subject to permits, regulations and seasons as determined by DEAT Marine and Coastal Management (MCM). However, a portion of the southern part of the District A coastline (south of the Twelve Apostles) falls within the Karbonkelberg Restricted or “no-take” Zone within the MPA, where no fishing or other extractive activities are allowed. This is an important breeding and nursery area for marine life and is intended to facilitate and increase in marine stock and protection of threatened species. However, poaching of marine resources in the area is still a threat to marine biodiversity (LAB, 2008).

5.2. Beaches

The movement of sediment is an important factor in shaping the western coastline of District A, where there are several sandy beaches. Sediments along the coast of District A originate from a number of sources. Sediment from the Southern Peninsula is also transported along the coast and around the rocky headland of Mouille Point to the beaches of Milnerton and further north (Reid et al., 2001). Sediment also originates from sources within the sea. As a result, beaches along the coast of District A contain a mixture of terrigenous and carbonate, i.e. land- and sea-derived, material (Franceschini et al., 2003).

Table Bay, at the northern end of the coastline of District A, is a log-spiral or “half-heart” asymmetric bay anchored by the rocky headland of Mouille Point in the south and Blouberg Rocks in the north. The bay consists generally of fine to medium sand along the eastern shore. Since the construction of the Port of Cape Town, the bay has been eroding eastwards in order to regain its former shape that was altered by the construction of the port. This has caused erosion of beaches and dunes along the entire extent of Table Bay, with the most extensive erosion occurring towards the centre of the bay in the vicinity of the Milnerton Golf Course (CSIR, 2003).

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21 Primary production is the production of organic compounds from atmospheric or aquatic carbon dioxide, principally through the process of photosynthesis. All life on earth is directly or indirectly reliant on primary production.

22 Terrigenous material is supplied to the shoreline by rivers, i.e. this material is derived from the land.

23 Carbonate material is supplied to the beach by the shoreward transport of shells of marine organisms, i.e. this material is derived from the sea.
The beaches along the western coastline of District A are very popular among beachgoers, despite the cold Atlantic Ocean. Two of these beaches – Camps Bay Beach and Clifton Fourth Beach – currently have Blue Flag status.

5.3. **Dunes**

Dunes are essentially terrestrial systems formed by wind-driven sand transported from, and often back to, beaches and their surf zones. The coastline of District A is mostly rocky and/or developed and there are very few dunes and no dune systems. The dunes found on the coastline of District A are embryo dunes consisting of partially vegetated or bare hummocks. They are indicated on Zone Map A2.

Embryo dunes are a “pioneering” dune system, usually found along the coastline and just above the high water mark. They represent the earliest stage of dune formation, occurring as small mounds to low hummocks at the coast, often supporting isolated plants (Low and Pond, 2004).

Embryo dunes are the most dynamic stage of dune formation. If they are disturbed, further dune formation may be halted with associated impacts on related coastal processes such as beach nourishment. These dunes can therefore be considered highly sensitive (Low and Pond, 2004).

Embryo dunes are found in three locations along the coast of District A. Two dunes along the coastline of Table Bay (at Paarden Island and Granger Bay, respectively) are fragmented and highly impact on by urbanisation and road infrastructure, as well as parking (at Granger Bay) (Low, 2008). The more extensive embryo dunes at Koeëlbaai (between Camps Bay and Oudekraal) are moderately impacted on by roadside parking and infestation by alien acacias (Low, 2008).

5.4. **Estuaries**

As discussed in Section 3.1.1, the Salt River is the most significant river system in District A. The lower section of the Salt River, from its confluence with its tributaries the Black and Liesbeek River to the ocean, consists of a large, concrete-lined canal. The Salt River mouth is considered to have poor overall water quality24 and a poor overall aesthetic state25 (Harrison et al., 2000).

5.5. **Coastal Erosion**

The entire South African coastline is generally subject to strong wave action, where swell heights in excess of five metres occur frequently. The prevailing swell direction is from the south west, and peak roughness occurs on the south-western Cape coastline, diminishing northwards and eastwards (Lombard et al., 2004).

Current coastal zone uses within District A includes industrial, commercial and residential uses in the northern part of the district (Table Bay to Camps Bay), as well as recreational / natural use activities (south of Camps Bay). The coastline and functioning of coastal processes have been significantly impacted by human activities taking place along the coast of District A (CSIR, 2003). The development of the Port of Cape Town and adjacent industrial areas in particular has changed the shape of Table Bay, resulting in extensive erosion in the south-eastern part of the bay, where the coastline is eroding eastwards in an attempt to re-establish the morphological equilibrium (Morant, 1999). It appears that in recent years a dynamic equilibrium between erosion and deposition is being reached there (CSIR, 2003).

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24 Water quality assessment is based on aquatic life suitability, human contact and trophic status, using indicators such as dissolved oxygen, unionized ammonia, faecal coliforms and nitrate nitrogen.

25 Taking into account factors such as floodplain land use, shoreline status, development in the floodplain / estuary surrounds, bridges, dams, mouth stabilisation measures, litter and rubble, nature and extent of human use, air and odour pollution, noise, invasive vegetation, turbidity, algal blooms.
The Salt River mouth has also been heavily modified and the adjacent shoreline shows signs of sediment starvation (Hughes, 1992).

As dune systems and beaches have been lost through development and the resulting reduction of available sand, the coast has been left vulnerable to further erosion and inundation. An example is the development at Granger Bay, which fed the beaches further north along the coastline (CSIR, 2003).

The coast of District A is also exposed to wave erosion, storms, extreme events and inundation caused by storms and tidal action. In recent years extreme events have occurred with increased frequency and intensity, e.g. severe storms hit the coast during the winters of 2001, 2002 and 2003 (Midgley et al., 2005). Significant damage to private property and public infrastructure occurred and to the north of District A, large areas of primary coastal dunes that act as the natural buffer to erosion and protect the coast were lost.

Climate change is predicted to result in sea level rise and higher energy storms, indicating that extreme events will further increase in frequency and intensity and affect particularly areas that are already prone to flooding. In District A, the beachfront area of Mouille Point has been identified as a flood danger zone.

5.6. Coastal Protection Zone

The CoCT has delineated a Coastal Protection Zone (CPZ), which has become a mandatory management intervention with the promulgation of the NEM: Integrated Coastal Management Act 24 of 2008. The fundamental intent of the CPZ is to mitigate the impacts of development on coastal ecosystems and to harness the potential of coastal ecosystems services towards building resilience and improving livelihoods for coastal communities. Through such an approach, and by creating an area in which coastal processes such as erosion, accretion, aeolian activity et cetera can take place, the CPZ effectively acts as a ‘buffer’ between dynamic coastal process and the built environment. This ‘buffer’ also serves to preserve the aesthetics and thereby the ‘sense of place’ associated with coastal areas within the CoCT.

The Coastal Protection Zone is indicated on Zone Map A2.

6. Heritage and Cultural Resources

District A includes the oldest portion of the settlement of Cape Town focussed around the Company Gardens and Table Bay harbour. A large portion of District A falls within the Table Mountain National Park, which extends from Table Mountain down the Cape Peninsula to Cape Point.

Pre-colonial archaeological remains are not well preserved in District A, owing to the long history of development in the area. Stone Age hand axes found in the Table Bay harbour as well as two Khoekhoen burial sites found in 1995 during a redevelopment in Green Point and underlying an 18th century paupers burial ground testify to long history of human occupation in the Table Valley.

Cape Town originated as a refreshment station for the Dutch East India Company (Vereenigde Oost-Indische Compagnie – VOC) in 1652. The main purpose was to supply ships en route to the East with fresh water and food. The settlement was focused around the Company Gardens. A VOC outpost was established on Robben Island and mainly used for breeding of livestock, but also as place of imprisonment.

Some land was made available to freeburghers26 for agricultural purposes, but the bulk of the early freeburgher grants were situated along the Liesbeeck River in District H. Roodebloem (1661) and Zonnebloem (1707) were amongst the early freeburgher farms granted in District A. In the late 18th century, a number of market gardens were granted in the Upper Table

26 VOC employees who were released from their service contracts.
Valley. By the start of the 19th century, the areas surrounding the original urban core consisted of small farms and market gardens (Fransen, 2004:63).

The urban core of Cape Town remained fairly contained between Buitengracht and Buitenkant streets until the early 19th century, when larger garden lots were subdivided for additional residences and the City expanded into Green Point and Sea Point. The French Lines to the east of the Castle was the de facto extent of the city.

In the 1830s, discrete villages already developed in the less affluent areas such as the Bo-Kaap and District Six to accommodate emancipated slaves. The small fishing village at Papendorp established c1788, expanded sufficiently to warrant its own Church in 1845 (St Mary’s Catholic Church). Cape Town was declared a Municipality in the 1840s.

The road network was formalised during the 1850s, facilitating movement into the Cape Flats and the rest of the interior. Large scale improvements were made to the Table Bay Harbour and the area between Loader St and the harbour known as ‘dock town’, characterised by public houses, hotels, boarding houses, commercial warehouses and lower income rent houses. During the same period, the railway network was developed, with the industrialisation of Salt River in 1861 being a result of the railway development.

The discovery of diamonds and gold in Kimberley and Witwatersrand led to a boom in the development of Cape Town as well as an influx of immigrants coming to the Cape to find their fortunes. At the same time, the SA College campus was established at the UCT Hiddingh campus in order to provide skills for the new mining boom. During this period, Tamboerskloof, Oranjezicht and Green Point developed a suburban character.

The Anglo Boer War broke out 1899-1902. Green Point Common and the neighbouring Athletics Track played a significant role as one of the camping sites on which British soldiers could be accommodated prior to being deployed. Boer Prisoners of War were held in a camp inside the Athletics Track.

An outbreak of bubonic plague in 1901, first identified in the dock areas and lower income areas such as District Six, lead to the first forced removals in Cape Town under the name of slum clearance and sanitation. Black migrant dock workers living in District Six were removed to the Uitvlugt camp, which later developed into the Ndabeni Native Location (Bickford-Smith, 1999).

By 1902, the greater Cape Town area consisted of the following municipalities: Cape Town, Woodstock, Green and Sea Point, Maitland and Mowbray (and, outside of District A, Rondebosch, Claremont, Wynberg, Kalk Bay and Simons Town). In 1913, the smaller municipalities were incorporated into the Greater Cape Town Municipality; this included Cape Town, Green Point, Woodstock, Maitland, Mowbray, Rondebosch and Kalk Bay. Wynberg remained a separate municipality and was only incorporated in 1927 (Bickford-Smith, 1999).

The periods surrounding the two World Wars were characterised by increased industrialisation. The high demand for housing in the post war period provided the impetus for the planning of the Apartheid city with separated residential areas for the different race groups, well before the Group Areas act was passed. Ndabeni was established as a ‘native location’ in 1901. Langa was already laid out in 1927 to accommodate the residents from Ndabeni who were to be removed to make place for the planned ‘garden city of Pinelands’. Residential areas such as Windemere and Crawford were planned as coloured residential areas, and Maitland garden village was built for the coloured municipal employees (Bickford-Smith et al, 1999).

The Group Areas were delineated from 1957. Virtually all of the residential areas of the City Bowl were declared White Group Areas, with the exception of the Bo-Kaap (Malay area). Woodstock, owing to its high degree of racial integration, defied declaration and remained a mixed area. The most poignant of the forced removals sites remains that of District Six, which was demolished in the 1970s as a slum area and remained undeveloped until the present.
Tramway/Ilford Roads, Sea Point as well as areas in Salt River and Observatory were affected and people were moved to the Cape Flats (District G).

A summary of the significance of heritage resources that have been identified in District A is given in Table 9-4.

**Table 9-4: Heritage resources in District A**

<table>
<thead>
<tr>
<th>Heritage Resources</th>
<th>Characteristics</th>
<th>Heritage Significance</th>
<th>Heritage issues, concerns and comments</th>
</tr>
</thead>
</table>
| Company Gardens, including historical core of early city | - Strong axial arrangement of the Company Gardens  
- Strong urban grid with view corridors across the city  
- Iconic backdrop of Table Mountain, flanked on either side by Lions Head / Signal Hill and Devils Peak | - Oldest existing cultivated land in the province, having been established by the first European settlers  
- Area currently an open space with largely exotic gardens with a very important public function surrounded by facilities and structures of governance and cultural institutions | - Densification of the city centre  
- Encroachment of high rise buildings in historical core characterised by modest heights  
- No clear delineation of historical urban boundary, ie 'old city core' vs. modern city  
- Undebated restoration decisions which would compromise park functions are a potential threat |
| Table Mountain World Heritage Site      | - Iconic landmark including Lions Head / Signal Hill and Devils Peak  
- Islamic burial grounds eg. Tanu Baru  
- Waterworks industrial archaeology/heritage  
- Some known archaeological sites | - The timeless and key landmark which gives Cape Town its international identity  
- The defining feature of the city  
- Iconic significance | - Visual pollution  
- Encroachment of development clutter on mountain edge  
- Undebated decisions regarding heritage vis a vis nature conservation issues  
- Development and infrastructural needs increasing in response to tourism pressure  
- Table Mountain areas not fully surveyed archaeologically |
| Robben Island World Heritage Site       | - Iconic landmark site | - Significance into political development of SA  
- Contains diversity of heritage resources spanning three centuries  
- Unique WWII defence system linking with Fort Wynyard, Castle and Simons Town etc | - Development and infrastructural needs increasing in response to tourism pressure |
| Existing Conservation/Heritage areas    | - Upper Table Valley W  
- Upper Table Valley E  
- Maynard Str  
- Wandel Str  
- Central City  
- Loader Str  
- Green Point  
- St Bedes  
- Sea Point  
- Chapel Str  
- Cavendish Square  
- Woodstock  
- Albert Road  
- Chester/Coronation Str | - Specific to each of the individual areas and deals only with built environment and its aesthetic qualities | - Unauthorised development  
- Inadequate monitoring of changes to buildings  
- Inappropriate bulk, massing and height on the edges of conservation areas |
<table>
<thead>
<tr>
<th>Heritage Resources</th>
<th>Characteristics</th>
<th>Heritage Significance</th>
<th>Heritage issues, concerns and comments</th>
</tr>
</thead>
</table>
| Somerset Hospital Precinct Proposed heritage area | - Oldest existing hospital complex in South Africa  
- Historic medical superintendents’ residence (SA Medical Museum)  
- Infectious diseases hospital  
- Historic nurses home | - Early example of hospitals developed along guidelines of Florence Nightingale  
- Architecturally significant and unique structures  
- SA’s oldest hospital  
- High degree of intactness  
- PHS (Old Somerset Hospital) | - Proximity to popular high pressure development areas such as the V&A Waterfront and Green Point  
- Identification of appropriate options for its redevelopment  
- Redevelopment in heritage sensitive terms is a necessity |
| Fort Wynyard Proposed heritage area | - Situated on the remains of a coastal dune which characterised the Green Point Common  
- Well-preserved Victorian coastal battery with unique military hardware  
- 19th century powder magazine | - Historical layering spanning several centuries  
- Unique site of national and international significance  
- Uninterrupted military use from 1795 to present | - Proximity to popular high pressure development areas such as the V&A Waterfront and Green Point  
- Significant visual impacts and its sense of place by the 2010 Stadium  
- Neglect and vandalism of fabric and artefacts  
- Inadequate funding to bring site to full potential |
| Old historic harbour Proposed heritage area | - Alfred Basin  
- Victoria Basin  
- Breakwater  
- South Arm  
- Incl archaeological remains of Amsterdam and Chavonnes Battery  
- Portswood Road and associated 19th century harbour residences  
- Breakwater convict station  
- Tank farm | - First industrial harbour built in SA  
- Integral part of Cape Town’s identity as a port city  
- Context within an area with a high degree of architecturally significant structures and a number of PHS  
- Context of series of coastal defence batteries associated with the harbour | - High pressure for development of the V&A Waterfront and immediate surrounds  
- Development should be monitored to avoid it taking place at the expense of heritage resources and their context |
| Green Point Common Proposed special area | - Green Point Common sports fields  
- Athletics Track  
- Old Race Stand  
- Promenade extending from the Green Point lighthouse to the Sea Point Public Swimming Baths | - Historical open space used for sporting/recreational events from 19th century onwards  
- Use during the Angle Boer War as POW camp (Athletics Track) and transit camp for British soldiers  
- Historical continuity as recreational space  
- Social significance its recreational value to communities affected by forced removals | - Heritage issues are complex and can’t be summarised  
- Heritage Impact Assessments would be required for any further development of the Common and should deal with the Common as a whole entity and not in a fragmented manner  
- Proximity to popular high pressure development areas such as the V&A Waterfront and Green Point  
- Development in this area may cause increased |
<table>
<thead>
<tr>
<th>Heritage Resources</th>
<th>Characteristics</th>
<th>Heritage Significance</th>
<th>Heritage issues, concerns and comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valkenberg Hospital</td>
<td>- Valkenburg manor house (until 1970 a mental hospital for whites)</td>
<td>- Historical layering</td>
<td>- Identification of appropriate options for its redevelopment</td>
</tr>
<tr>
<td>Proposed heritage area</td>
<td>- Burial vault</td>
<td>- Association with Valkenburg East as example of Apartheid policies of separation</td>
<td>- Redevelopment in heritage sensitive terms is a necessity</td>
</tr>
<tr>
<td></td>
<td>- Valkenburg Hospital built in 1881 originally as a reformatory; 1891 converted into mental hospital</td>
<td>- Archaeological potential</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Wild Fig Restaurant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valkenberg East</td>
<td>- Remains of the 18/19th century farmstead / Oude Molen</td>
<td>- Historical layering</td>
<td>- Identification of appropriate options for its redevelopment</td>
</tr>
<tr>
<td>Proposed heritage area</td>
<td>- 20th century mental hospital for blacks</td>
<td>- Association with Ceteswayo, incarcerated at Oude Molen 1881/2</td>
<td>- Redevelopment in heritage sensitive terms is a necessity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Links with Robben Island its place of incarceration as well as mental care</td>
<td>- River Club and grounds would need further investigation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Association with Valkenburg Hospital as example of Apartheid policies of separation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Archaeological potential</td>
<td></td>
</tr>
<tr>
<td>Royal Observatory</td>
<td>- SA Astronomical Observatory</td>
<td>- Grouping of architecturally significant buildings with a high degree of intactness</td>
<td>- Inappropriate changes to structures and unsympathetic redevelopment of its geographical context</td>
</tr>
<tr>
<td>Proposed heritage area</td>
<td>- McLean Building (PHS)</td>
<td>- Scientific/technological significance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Victorian staff dwellings</td>
<td>- Borders onto Black River Wetlands area</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modern Cape Town</td>
<td>- Duncan Dock area older than 60 years</td>
<td>- Part of maritime landscape associated with Cape Town as a port city</td>
<td>- Archaeological material is a concern</td>
</tr>
<tr>
<td>Harbour area</td>
<td>- Modern harbour development and improvement of infrastructure</td>
<td>- Potential of shipwrecks in reclaimed land areas</td>
<td>- Development in this area needs to be preceded by HIA with detailed archaeological input</td>
</tr>
<tr>
<td>Proposed special area</td>
<td>- Including areas of land reclamation along old Marine Drive</td>
<td>- Remains of 18th century fortifications eg Fort Knokke, Craig’s Battery and sea lines in the Culemborg area (see below)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District Six</td>
<td>- Extending from Harrington St to Zonnebloem and from Main Road to de Waal Drive</td>
<td>- Intention by SAHRA to have District Six declared a Grade 1 site (National Heritage Site)</td>
<td>- High pressure for redevelopment</td>
</tr>
<tr>
<td>Proposed special area</td>
<td></td>
<td>- Largest forced removals site within the boundary of the 19th century city</td>
<td>- Sporadic implementation of D6 Archaeological Management Plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Conservation Management Plan must be used to inform any development proposals</td>
</tr>
<tr>
<td>Railway/Docks area</td>
<td>- Reclaimed land related to Woodstock Beach and Sceptre Reef</td>
<td>- Maritime archaeological sites protected by Section 35 of the NHRA 25 of 1999</td>
<td>- Development of these areas need to be preceded by HIA with a detailed archaeological input</td>
</tr>
<tr>
<td>Areas of high</td>
<td></td>
<td>- Area of high incidence of shipwrecks particularly during winter storms</td>
<td></td>
</tr>
<tr>
<td>archaeological potential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal Defences</td>
<td>- Craig’s Battery</td>
<td>- Archaeological remains of</td>
<td>- Development of these</td>
</tr>
<tr>
<td>Heritage Resources</td>
<td>Characteristics</td>
<td>Heritage Significance</td>
<td>Heritage issues, concerns and comments</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Areas of high archaeological potential | • Fort Knokke  
• Bus Depot Woodstock (Redoubt)  
• Trafalgar Square Redoubt          | the protected by Section 35 of the NHRA 25 of 1999  
• Part of 18th and 19th century coastal defence system which extended from Fort Wynyard to Craig’s Battery as well as line of redoubts from the latter towards Devil’s Peak | areas need to be preceded by HIA with a detailed archaeological input |
| Green Point Burial Area  
Areas of high probability of finding burials | • Green Point Burial Area. Between Somerset Road and the old shoreline; extending to and including the Gallows Hill Traffic Station  
• 18th and 19th century burial grounds | • Burial grounds and graves older than 60 years protected by Section 36 of the NHRA 25 of 1999 | • Lack of communication between the relevant authorities  
• Any development in this area must consider archaeological trial excavations, possible need for exhumations and monitoring |
| Old Military burial ground – Woodstock  
Areas of high probability of finding burials | • Old Military burial ground - Woodstock | • Burial grounds and graves older than 60 years protected by Section 36 of the NHRA 25 of 1999 | • Any development in this area must consider archaeological trial excavations, possible need for exhumations and monitoring |
| Atlantic Seaboard/Coastal Road | • Oudekraal | • Known place of Islamic burials and use as sacred space  
• High scenic value | • Heritage value has not been adequately investigated |
| Scenic Drives | • Coastal Road | | |
6. Economic and Urban Settlement Characteristics

6.1. Population Characteristics

District A accommodated approximately 6% of the population of the CoCT, or 170 671 people, in 2001. This makes District A the district with the second-smallest population in the CoCT. The district has an average population density of 1 551 people per km², and 2 989 people per km² in urban areas, which is a little below CoCT-wide average densities. The most densely populated areas of the district are Langa, Sea Point, Maitland and Vredehoek, followed by the Central Business District (CBD), Zonnebloem, Woodstock, Gardens and Clifton. Pinelands, Green Point and Camps Bay are less densely populated (see Figure 9-1) (CoCT, 2007a). A significant portion of the district falls within the Table Mountain National Park and is therefore not populated at all.

![Figure 9-1: Population Density in District A (people per km²).](image)

Source: CoCT, 2007a

The population of District A is approximately evenly split between the Black African, Coloured and White communities, with a smaller Asian community also present (see Table 9-5).

Table 9-5: Population and ethnic characteristics within District A.

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Number of people</th>
<th>% of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black African</td>
<td>61 116</td>
<td>35.8</td>
</tr>
<tr>
<td>Coloured</td>
<td>52 286</td>
<td>30.6</td>
</tr>
<tr>
<td>Indian/Asian</td>
<td>3 305</td>
<td>2.0</td>
</tr>
<tr>
<td>White</td>
<td>53 964</td>
<td>31.6</td>
</tr>
<tr>
<td>Total</td>
<td>170 671</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: CoCT, 2007a

District A has the highest proportion of working age population (between 18 and 64 years old) of all the districts in the CoCT (66.9% of people living in the area) as well as the second-highest proportion of people aged 65 years and above (9.2%). Conversely, the proportion of youth in District A is the lowest of all CoCT districts, with 24% of the area’s population aged 17 years and younger. The median age of people in District A is 29 years, which is three years above the median age of the population across the entire CoCT. More women (52%) than men (48.4%) live in District A (CoCT, 2007a).
Population growth rates are expected to slow over the next 15 years throughout the CoCT due to decreased migration to the city, reduced fertility and the impact of HIV/AIDS. HIV/AIDS is expected to increase the dependency ratio as it mostly affects people of an economically active age, thereby reducing the size of the economically active population (CoCT, 2007a).

6.2. Urban and Social Characteristics

The District has the highest proportion of small households of all CoCT districts. More than half of the households in the area (56%) consist of only one to two people, indicating that relatively few families live in the district, in line with the relatively low proportion of youth in the area. Only 5% of households accommodate seven persons or more (CoCT, 2007a).

Approximately 77% of households in District A resided in formal dwellings in 2006. Informal dwellings accounted for 14% of all households (3478 in 2006) in the District, which is the fourth-lowest proportion of all CoCT districts. Informal dwellings are found mostly in Langa and District Six (see Figure 9-2). More than 9% of households live in ‘other’ dwelling types, which include traditional dwellings, caravans, tents, private ships, boats and institutional buildings, by far the highest proportion of all eight districts in the CoCT (CoCT, 2007a).

![Figure 9-2: Informal settlements in District A](source: CoCT (2007a))

The Socio-Economic Status Index (SES) measures social and economic well-being (the higher the index, the worse the socio-economic status). District A has an overall SES of 29.67, which is 8 points below the CoCT average, and the third lowest of all CoCT districts (CoCT, 2007a). This indicates better conditions in District A relative to the CoCT average.

There are however great disparities in socio-economic well-being within the district. While some areas within District A, such as Camps Bay and Clifton, are home to some of the wealthiest people in South Africa, there are other areas where people are, on average, markedly worse-off. Such disparities are largely a relic of apartheid economic and planning policies.

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27 The SES in the City of Cape Town is calculated taking into account the percentages of (1) households earning less than R19 200 per annum (in 2001), (2) adults (20+) with highest educational level less than matric, (3) the economically active population that is unemployed and (4) the labour force employed in elementary/unskilled occupations. The higher the index, the worse the socio-economic status (CoCT, 2007).
Langa falls within the highest, and hence worst, SES band and is the area with the poorest socio-economic status index in District A, followed by areas that abut Voortrekker Road, while Pinelands, Oranjezicht, Vredehoek and Tamboerskloof have the lowest SES and are hence the best-off within the District (see Figure 9-3).

Figure 9-3: Socio-economic status index in District A

Source: CoCT (2007a)

District A had a service level index of 10.27 in 2005, approximately two points below the City average. This indicates that people residing in District A have a better level of service delivery than the City average (CoCT, 2007a). The lowest service levels within District A are found in Langa and parts of Maitland (see Figure 9-4) (CoCT, 2007a).

District A has a dependency ratio of 40.3, which is about 6 points lower than the CoCT average. It indicates that the economically active people in District A on average support fewer people that are economically dependent on them than the average resident in the whole CoCT (CoCT, 2007a).

With regards to violent crimes, District A ranges in the midfield amongst the eight CoCT districts. It had the fourth-lowest percentage of City-wide reported murders (6.5%) and rape cases (7.2%) in 2005/06. In terms of business crime, however, District A has the by far highest rate of all districts, with over a quarter of City-wide reported business crimes (25.2%) taking place here. This reflects the large proportion and value of businesses located in this district. While murder, rape and business crime rates have all decreased over the five years between 2001/02 and 2005/06, drug-related crime in District A has nearly doubled in that time, in line with an overall sharp increase of drug-related crimes in all CoCT districts. The third-highest number of drug-related crimes in the CoCT (16.1%) was reported in District A in 2005/06 (CoCT, 2007a).

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28 The service level index is calculated taking into account the percentages of households (1) in informal dwellings, (2) without access to electricity for lighting, (3) without flushing or chemical toilets, (4) without potable water on the site or in the dwelling and (5) without refuse removal by local authorities at least once a week. The higher the index, the worse the service provision (CoCT, 2007).

29 The dependency ratio is the ratio of the economically dependent part of the population (people who cannot work, such as children and pensioners) to the productive part of the population.
There is limited capacity for new settlement growth and expansion in the district due to the spatial development restrictions placed on it by the TMNP, coastline and urban edge. However, there are large-scale land parcels within the urban edge that accommodate City growth (e.g. District Six and Wingfield), and vacant land within the urban footprint that provide numerous opportunities for infill development.

6.3. **Economic Characteristics**

Commercial and industrial properties in District A are used for (in order of importance): retail, offices, hotels / guesthouses, light industry, warehousing and a small percentage of heavy industry. This district is the only one where a significant number of properties, accounting for 15% of district commercial property value, are used for hotels and guesthouses (CoCT, 2007a).

Cape Town’s CBD, located at the heart of District A, is the most important commercial and business area of Cape Town. It also acts as a major draw card for national and international tourists. More than 26% of all commercial properties in the CoCT are located within District A, accounting for 38.5% of total CoCT commercial property value. This is more than double the value of commercial property in any other district (CoCT, 2007a). The City Bowl, Foreshore and Waterfront together generated 22% (or R62.9 million) of the total City turnover (CoCT, 2007a), which is a far higher percentage than that generated in any other areas within the City.

Industrial areas are mainly located in Paarden Eiland, Maitland and Epping. District A has the second-highest number of industrial properties (19.8% of CoCT total), which have the third-highest property value amongst CoCT districts (CoCT, 2007a). The District also accommodates the Port of Cape Town.

Building plans submitted between January 2005 and May 2006 for commercial and industrial properties indicate continuing investment in District A. Plans for commercial properties are concentrated particularly in the CBD and Foreshore; in the former, however, many buildings previously used as office blocks have been converted to residential buildings, while major new office, residential and tourist facilities are being developed in the Foreshore area (near the V&A Waterfront). Industrial property plans are also clustered in the Foreshore area and along Voortrekker Road (City of Cape Town 2007a, cited in CoCT, 2007a).
About 68.5% of the people in District A are economically active (i.e. working or actively looking for work). Of these, 77% are employed. Only 15% of the labour force of the district works in unskilled occupations, which is the second lowest ratio of all districts (CoCT, 2007a).

7. Pollution and Waste

7.1. Air Pollution

The City of Cape Town has an ambient air quality monitoring network comprising 13 monitoring stations. Three of these are located in the City Bowl in District A. The CBD has been identified as an air pollution ‘hot spot’ in the City’s Air Quality Management Plan, with particulate matter (PM\(_{10}\)) as the principal pollutant (CoCT, 2005). PM\(_{10}\) is primarily caused by burning of fossil fuels and wood for cooking, heating and lighting, as well as from exhaust emissions (transportation), which is the largest contributor to air emissions in Cape Town. PM\(_{10}\) is also a key contributor to the ‘brown haze’ that can often be seen hanging over the City. However, the number of annual PM\(_{10}\) exceedances in the City Centre has been significantly lower than in other parts of the City (see Figure 9-5) and the problem is worse in some other districts.

![PM\(_{10}\) Exceedances at three stations in City of Cape Town between 1995 and 2001](source: CoCT, 2007b)

7.2. Effluent (Liquid Waste) Management

Sewage and industrial effluent is the main component of liquid waste generated. District A is serviced by two large waste water treatment works (WWTW) outside of the district’s borders and an additional small WWTW that is located within District A. Sea outfalls, where fine screening and discharge of effluent to sea takes place, are located at Green Point and Camps Bay (see Table 9-6).

<table>
<thead>
<tr>
<th>WWTW</th>
<th>Capacity (Ml/day)</th>
<th>District</th>
<th>Catchment area in district</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Flats WWTW</td>
<td>200.0</td>
<td>G</td>
<td>Salt River, Observatory</td>
</tr>
<tr>
<td>Athlone WWTW</td>
<td>105.0</td>
<td>G</td>
<td>Epping, Thornton, Maitland</td>
</tr>
<tr>
<td>Oudekraal WWTW</td>
<td>0.03</td>
<td>A</td>
<td>Oudekraal</td>
</tr>
<tr>
<td>Camps Bay sea outfall</td>
<td>5.5</td>
<td>A</td>
<td>Camps Bay</td>
</tr>
<tr>
<td>WWTW</td>
<td>Capacity (Ml/day)</td>
<td>District</td>
<td>Catchment area in district</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------</td>
<td>----------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Green Point sea outfall</td>
<td>30.0</td>
<td>A</td>
<td>Sea Point to District Six, CBD to Culemborg</td>
</tr>
</tbody>
</table>

*Source: City of Cape Town (2006a)*

Managing sewage collection, treatment and discharge is a critical issue and several challenges face the authorities in this regard:

- The high costs of collection and treatment;
- Increasing sewage and effluent generation and pressure on existing WWTW capacities;
- Servicing informal housing areas;
- Ensuring treated effluent complies with relevant water quality standards;
- Ensuring sewage sludge disposal complies with regulations; and
- Recent power outages, which have dramatically increased the number of pumpstation overflows and rising sewer incidents.

The standard of compliance for effluent leaving WWTW is measured using *Esherichia coli* (*E. coli*) as an indicator and is set at 1 000 *E. coli*/100ml. In the City in general, including in District A, overall compliance of effluent quality is low and is declining (CoCT, 2008). Ongoing initiatives are taking place to improve the effluent quality including in District A, e.g. rehabilitation of or upgrades to the Green Point sea outfall, the Cape Flats WWTW and the Athlone WWTW (CoCT, 2007c). Most of the effluent from District A goes to the Athlone WWTW, which discharges into the Black River. According to the CoCT’s Water Services Development Plan, the Athlone WWTW has some spare capacity but needs process upgrades like mechanical sludge dewatering, effluent disinfection and odour control. Additional capacity will have to be provided within the next 5-10 years to address the requirements of development within the catchment area (CoCT, 2007c).

### 7.3. Rivers and Wetland Pollution

The pollution and degradation of rivers and wetland systems within District A, and the Western Cape in general, are critical issues. Many of the rivers in District A have been impacted by effluent discharged from WWTW and canalisation.

The City monitors *E. coli* as an indicator of water quality for public health and total phosphorus as an indicator for the health of the ecosystem. As discussed in Section 3.1.1 above, the Salt River and its tributaries (the Elieskraal, Black and Liesbeek Rivers) form the major river system in District A. Only 1% of 14 water samples taken by the City of Cape Town in the Salt River between April 2007 and March 2008 complied with the DWAF Water Quality Guidelines for intermediate contact recreation. This is the worst performance of all rivers tested by the City during this time frame. The median concentration of phosphorus in the samples showed hypertrophic conditions and hence bad ecosystem health in the Salt River (CoCT, 2008).

The main causes and/or sources of pollution for rivers and wetlands in District A include:

- Insufficient service provision, particularly in informal settlement areas, leading to, e.g. contaminated stormwater;
- Polluted run-off from industrial and other urban areas;
- Release of treated effluent from Athlone and Borchards Quarry WWTWs; and
- Sewer overflows (pump stations and sewage blockages).

---

30 1 000 indicator organisms
31 Note a range of physical, chemical and biological constituents are monitored. *E.coli* and phosphorus have been selected for general reporting purposes.
32 Water contains equal to or less than 1 000 counts of *Esherichia coli* (*E. coli*) in 100 ml.
33 Excess accumulation of nutrients in a body of water.
7.4. Coastal Water Pollution

Trends show there has been a slight overall decline in coastal water quality along the Atlantic coastline. Reasons for coastal water pollution include the release of sewerage water into stormwater systems (recently exacerbated by power outages and aged infrastructure) and eventually coastal waters, abnormally high rainfall and hence higher volumes of potentially contaminated run-off and higher levels of beach usage with associated pollution and degradation.

In District A, coastal water quality is monitored at several sites along the Atlantic coastline, including Mouille Point, Rocklands, Three Anchor Bay, Maidens Cove, Camps Bay, Bakoven and Oudekraal. For the last reporting period ending March 2008, results showed that four of these sites did not meet the DWAF guideline requirement that 80% of samples must contain less than 100 E. Coli per 100ml (CoCT, 2008).

![Bacteriological Monitoring: Atlantic Coast](image)

Figure 9-6: Bacterial counts on the Atlantic coast for the year ending March 2008

Source: adapted from CoCT, 2008.

Note: DWAF guidelines specify desired values for E coli as follows:
- 80% of samples must contain not more than 100/ E coli per 100ml
- 95% of samples must contain not more than 2000/ E coli per 100ml

Water quality in Table Bay is affected by discharges and spills from activities in the Port of Cape Town as well as effluents and contaminants from the City's storm water outfalls. Although some contamination of sediments and biota adjacent to contamination sources is evident, there is no indication that there is a build-up of contamination in the bay, as it is regularly flushed by wave and circulation processes (Lwandle, 2006).

7.5. Solid Waste Management

District A, together with the other districts within the City, is confronted with waste management challenges driven by increasing waste generation and limited suitable space for disposal and treatment. Current trends from the available data indicate that waste volumes are outstripping population growth by 5% (CoCT, 2006). Increasing waste generation leads to cumulative contamination and pollution in the long term as the receiving environment, including waterbodies has limited capacity to assimilate and breakdown waste.
In District A, 98.24% of households have regular formal refuse removal service by the local authority (CoCT, 2007), which is significantly higher than the city average.

The City of Cape Town runs six waste disposal sites, of which only three are currently operational (one of these sites, Vissershok, accepts hazardous waste). None of these sites are located within District A, but the district does have one transfer facility located in Athlone and two drop-off sites, one at the Athlone Transfer Station and one in Woodstock.

The CoCT has recently adopted an Integrated Waste Management Policy to try to minimise and effectively manage waste.

8. References

Anon. n.d. Langa Heritage Brochure


City of Cape Town (CoCT) (2006a).


CoCT (City of Cape Town). (2007a). Planning Districts Socio-Economic Analysis 2007, Strategic Development Information and GIS Department, Emille van Heyningen, 146 Pages.


DME (Department of Minerals and Energy) (2000), Mining Structure Plan Summary.


Murray, M 1964. *Under Lion's Head. Earlier days at Green Point and Sea Point.* Cape Town: AA Balkema


Winter, S and Baumann, N. 2003. *DRAFT Assessment of the significance of the heritage value of Valkenburg East* Draft report

C Policy Rationalisation

Extract from Report on local area spatial planning policies & plans audit & review - towards local spatial planning work priorities for District A (August 2006).

1. Summary of the Spatial Planning Policy Audit & Review Findings

There are approximately 135 spatial planning policies or documents dealing with District A alone that could be found in an audit on existing spatial documents. The following trends or indicators give some essence of the nature and characteristics of these documents:

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<td>Guidelines</td>
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<td>Other Themes</td>
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<tr>
<td>Metropolitan</td>
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<tr>
<td>Cape Peninsula National Park Conservation Development Framework</td>
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<tr>
<td>Cape Town Central Waterfront: Draft Contextual Framework</td>
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<td>CMC Densification Study</td>
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<td>Green Point Common Master Plan</td>
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<td>Greenpoint Development Framework</td>
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<td>Langa Local Area Spatial Development Framework</td>
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<tr>
<td>Lower Gardens Policy Plan</td>
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<td>Maitland Local Area Plan</td>
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<td>Mapping Slave Sites in Cape Town: Baseline Study for the Development of Walking Routes</td>
<td>No</td>
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<tr>
<td>National Ports Authority Development Framework Cape Town</td>
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<tr>
<td>Observatory Policy Plan</td>
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<td>Port of Cape Town: Strategic Environmental Assessment for the Port of Cape Town</td>
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<td>Precinct Plan and Rezoning for Somerset and City Hospital Precincts</td>
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<td>River Club, Observatory Precinct Plan</td>
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<tr>
<td>Signal Hill &amp; Lion's Head Development and Management Guidelines Report</td>
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<tr>
<td>Somerset Hospital Precinct: Contextual Framework Heritage Component</td>
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<tr>
<td>Two Rivers Urban Park Contextual Framework and Phase 1 Management Plan</td>
<td>Yes</td>
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<td>Upper Table Valley Policy Plan</td>
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<td>Woodstock - Salt River Revitalisation Framework</td>
<td>Yes</td>
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<td>Woodstock East Conservation Study</td>
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The number of plans considered no longer useful is 107 out of the total of 135. It should however be remembered that the oldest document dates back 1947 and a substantial number of these old documents had been superseded or replaced by more up to date documents.

Council has approved 19 of the documents (none of them as 4(10) approval) with one document being approved through environmental legislation and processes (i.e. Cape Peninsula National Park Conservation Development Framework). No documents were approved by the Provincial Government (so called 4(6) approval).
Areas that received noticeable planning attention, as revealed by the audit include:

- Culemborg, Black River area;
- District 6;
- Green Point and Sea Point;
- Victoria and Alfred Waterfront; and
- Woodstock and Salt River area.