

QUENERA LOCAL SPATIAL DEVELOPMENT FRAMEWORK PLAN



BUFFALO CITY MUNICIPALITY

P.O. Box 81
East London
5200

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FINAL

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DEFINITIONS

Development – All buildings, structures, fences, boundary walls, boat houses, jetties, sports facilities, facilities (including golf courses), agricultural tunnels, Development excludes soft ecotourism facilities and infrastructure such as cycle paths, bird hides that would be associated with nature reserves.

Limited Development Area – The land within the coastal buffer zone abutting the urban edge, not designated as a Development Node Rural Zone, or a No Development area, in which development may be considered subject to certain criteria and conditions. The limited development area is depicted on Plan 8 and is intended as a buffer between urban settlement and rural areas, accommodating environmentally sensitive development.

Node (Urban Node) or Nodal development area - Describes an area of land which has been designated for urban type development in terms of a Spatial Development Framework Plan and is situated within the urban edge.

No Development Areas – Coastal areas comprised of proclaimed reserves, conservation areas or state forests; or areas deemed to be environmentally sensitive in which no future development should be permitted in order to maintain the ecological integrity and aesthetic value of the area or property including:-

- ◆ Slopes of 1 in 5 or steeper;
- ◆ Estuaries;
- ◆ Land below the 1 in 100 year flood level;
- ◆ Areas identified during the EIA process as being needed for reclamation or rehabilitation of indigenous vegetation;
- ◆ River banks;
- ◆ Beaches and land below the highwater mark; and
- ◆ Any other area that DEAET considers unsuitable for development.

Ribbon Development - Describes the spatial pattern of human settlement and infrastructure that is spread out along the coastline.

Sensitive Coastal Ecosystems - Ecosystems that are particularly vulnerable to disturbances by virtue of their inherent characteristics, or proximity or exposure to potential human or natural hazards.

Urban Edge – The prescribed boundary surrounding an urban node which demarcates the limit for urban growth (refer to Plan 8).

Rural Zone – Land situated outside the urban edge and abutting the limited development area along the urban edge (refer to Plan 8), comprising larger agricultural properties, rural and semi-urban settlements, coastal tourism resorts and rural service nodes.

1. INTRODUCTION

The Quenera Framework Plan and Land Development Objectives were prepared during 1997 and subsequently approved by Council in 1998. The proposals of that Framework Plan were incorporated within the Integrated Development Plan (2000) and the Buffalo City Spatial Development Framework Plan (2003). During 2004, Buffalo City Municipality became aware of growing demands from the property development sector to change land use and develop a range of commercial, residential and industrial premises in the area between the Quenera and the Gonubie River. It was recognised that these proposals would have serious bulk infrastructure implications and Messrs FST Consulting Engineers were appointed to review the infrastructure requirements for the area in 2005. In support of the review, Tshani Consulting c.c. were appointed to provide input from a spatial planning perspective and Coastal Environmental Services, were appointed to contribute to the environmental perspective.

An important part of the review process is to give consideration to current Land Use Management Principles and Policies applicable to the area, which have an influence on the management of development applications, subdivisions, re-zonings and the positioning of various land uses. A Land Use Management System simply assists a Municipality in managing all development. In terms of the Municipal Systems Act (Act No. 32 of 2000) a Spatial Development Framework is to be prepared in conjunction with the Integrated Development Plan of the Municipality.

This document sets out the Land Use Management Guidelines for the Quenera area, including those areas proposed to be within the urban edge and also those areas proposed to be located outside the urban edge. The provisions of the city wide spatial development framework plan, the IDP and other policy plans have influenced the proposals set out below.

This Framework Plan will be adopted by the City Council of Buffalo City as a spatial development policy document for the planning area. It is intended as a management tool to assist future decision making regarding land use change, development prioritisation and to co-ordinate provision of bulk infrastructure to support development initiatives, according to agreed priorities.

2. PLANNING AREA

This document contains the review of the Spatial Development Framework and Land Use Management Guidelines for the primary planning area. The area in general is bounded to the west by the Quenera River; to the north along the old Transkei Road; to the east by the urban edge near the Gonubie River and to the south by the coastal belt along the high water mark. The primary planning area is depicted on Plan 1. A secondary planning area is considered around the primary planning area to take into account the trends, needs and characteristics of the transition zone between the "urban" area and "rural" area. This secondary planning area generally lies outside the urban edge and considers those properties adjacent to the primary planning area.

3. SCOPE OF WORK

3.1 Intentions of the Review Process

The overall intentions of the review process are as follows:-

- ◆ To establish a representative Project Steering Committee;
- ◆ To review the existing Quenera Framework Plan and Land Development Objectives in the context of changes in land use, demand for development and policy frameworks;
- ◆ To appraise the characteristics of the area, identify opportunities, constraints and needs and, provide input to the study of infrastructure implications and transportation; and
- ◆ To formulate spatial development proposals, land use management guidelines, action plans and a programme for implementation of the action plans.

3.2 Public Participation

The first public meeting was initially held as a technical discussion between engineers, consultants and developers in the Quenera area. This was followed by a general public meeting on 10 May 2005. Subsequently, a focus discussion was held with the Gonubie Estuary Management Forum on 8 June 2005. A meeting was held with property owners affected by the proposed widening of the main road and routes for service roads alongside Gonubie Main Road on 20 June 2005. In addition, a further public meeting was held on 22 June 2005, followed by further focus discussion with the Estuary Management Forum on 5 July 2005. The draft proposals were considered at a public meeting held on 23 August 2005. Details of the participants of the public meetings are provided in the Appendices.

4. CURRENT PLANNING, PROJECTS AND POLICY CONTEXT

There have been a number of planning projects affecting Gonubie, Beacon Bay and the Quenera area. These include:-

- ◆ Buffalo City Zoning Scheme;
- ◆ Quenera Master Plan 1970 (1973 updated);
- ◆ Quenera Urban Structure Plan 1988 (1993 updated);
- ◆ Buffalo City Integrated Development Plan (2000); and
- ◆ Buffalo City Spatial Development Framework (2003).

The nature of the proposals contained in these plans and their effect on the Quenera area can be summarised as follows:-

4.1 Buffalo City Zoning Scheme

This is a standard Zoning Scheme which assigns rights to the properties falling within its jurisdiction. Apart from the fact that the scheme predominately assigns

special residential rights to most of the land adjacent to the Quenera area, there are no implications to be drawn from these plans.

4.2 Quenera Master Plan (1970 to 1973)

This Plan is of interest largely from a point of view that it proposed two major road links through the Quenera area across the river (one near the mouth of the river). In addition, the plan envisaged special residential development over much of the vacant land, a new town centre in the middle of the Quenera area and holiday resort development along the Eastern banks of the Quenera River, inland. This plan recommended that sand mining activities taking place along the dune zone be halted with immediate effect (it has in fact carried on operating).

4.3 Quenera Urban Structure Plan (1988 - 1993)

This plan proposed the consolidation of Gonubie with Beacon Bay with the creation of a central business area and two road links which would integrate the urban fabric and provide a “spine” along which other development would extend. The proposed road links involved a road across the Quenera River further inland (Lagoon View Drive) and another link onto Beaconsport Drive. This plan also proposed residential agricultural land uses along the Gonubie Main Road, with higher density residential development and pockets of industry and business in the central area of the Quenera. A substantial area of holiday resort land was proposed along the Quenera River.

This plan also referred to the need to terminate sand mining along the dune zone. The Quenera Urban Structure Plan has not been approved in terms of the statute and is understood to be of no force and effect.

4.4 Buffalo City Integrated Development Plan (IDP)

The Buffalo City Integrated Development Plan was originally approved in 2000. The I.D.P is reviewed annually, although the fundamental policies, principles and proposals with regard to spatial development objectives remain largely unchanged. The objectives and strategies of the IDP are reflected in more detail in the Spatial Development Framework. (See Section 4.5 below).

4.5 Buffalo City Spatial Development Framework

The Buffalo City Spatial Development Framework (2003) has the following objectives and strategies, which impact on the Quenera area:-

4.5.1 Spatial Development Objectives

- ◆ A well structured, efficient and sustainable city, which has corrected historically distorted spatial development patterns;
- ◆ Adequate land and services for urbanising (existing and future) communities;
- ◆ Higher density settlements;
- ◆ Environmentally sustainable and spatially co-ordinated sectoral practices; and
- ◆ Managed use of natural resources and agricultural land.

4.5.2 Spatial Development Strategies

The spatial development strategies are as follows:-

- ◆ Consolidate and integrate spatial development by developing land in proximity to public transport facilities and existing services;
- ◆ Support the land reform and settlement programme by identifying zones of opportunity according to land needs;
- ◆ Proactively manage land use to achieve sustainability;
- ◆ Implement the principles of Integrated Environmental Management; and
- ◆ Identify resources and manage land use in valuable resource areas.

The Spatial Development Framework describes the preferred Land Use Outcomes in the Spatial Management Area (S.M.A), including the Quenera as follows:-

- ◆ “Through focussed land use management assist in the promotion of high income housing development in the Quenera area, as identified in the SDF, through subdivision density control and enforcement of zoning scheme regulations, as well as providing for the marginal expansion of the existing Urban Edge in the required directions (controlled urban sprawl);
- ◆ In order to give effect to the potential development mechanisms outlined in the Spatial Development Framework, a Public-Private partnership approach is likely to be necessary as most land in the Quenera area is privately owned but requires the development of bulk infrastructure to permit development;
- ◆ Apart from accommodating the necessary extension of the Mzamomhle township, no further development of public-funded housing in the Quenera area should be permitted, as there are limited job opportunities in the area and access to social and economic opportunities and associated community facilities is also limited;
- ◆ Limit the subdivision of prime and unique agricultural land into uneconomical units, in conjunction with the Department of Agriculture, through the identification of areas to be included in the scope of Act 70 of 1970 (Subdivision of Agricultural Land Act);
- ◆ Protect the riparian environment along rivers, as identified in the STEP Project and the Spatial Development Framework, through restricting, *inter alia*, holiday housing and resorts along such rivers, to environmentally sustainable and compatible developments; and
- ◆ No office and/or retail land uses are to be permitted north of the Gonubie Main Road. Such developments are favoured at existing nodes within the SMA.”

5. LEGAL CONTEXT AND POLICY FRAMEWORK

Keeping in line with the Buffalo City Municipality Spatial Development Framework, the following Municipal Policies and Guidelines will apply to all settlement planning and Land Use Management processes within Buffalo City. Also included in the following policies are special guidelines for the Quenera Area:-

5.1 Development Facilitation Act (Act 67/1995)

This Act provides a single, clear, national process for approving development initiatives by introducing a faster mechanism for obtaining approval whilst at the same time seeing to the interests of the most marginalized sector of our Society, taking into account environmental issues and redressing the backlogs and iniquities of Apartheid.

The following general principles as contained in Chapter 1 (ELSECC, EC District Council Workshop 1997) 3.1 of the DFA allows for integrated development:-

- ◆ Policy, administrative practice and laws should provide for urban and rural land development and should facilitate the development of formal and informal, existing and new settlements.
- ◆ Policy, administrative practices and laws should discourage the illegal occupation of land, with due recognition of informal land development processes.
- ◆ Policy, administrative practice and laws should promote efficient and integrated land development in that they:-
 - promote the integration of the social, economic, institutional and physical aspects of land development;
 - promote integrated land development in rural and urban areas in support of each other;
 - promote the availability of residential and employment opportunities in close proximity to or integrated with each other;
 - optimise the use of existing resources including such resources relating to agriculture, land, minerals, bulk infrastructure, roads, transportation and social facilities;
 - promote a diverse combination of land uses, also at the level of individual erven or subdivisions of land;
 - discourage the phenomenon of “urban sprawl” in urban areas and contribute to the development of more compact towns and cities;
 - contribute to the correction of the historically distorted spatial patterns of settlement in the Republic and to the optimum use of existing infrastructure in excess of current needs; and
 - encourage environmentally sustainable land development practices and processes.
- ◆ Members of communities affected by land development should actively participate in the process of land development.

- ◊ The skills and capacities of disadvantaged persons involved in land development should be developed.
- ◊ Policy, administrative practice and laws should encourage and optimise the contributions of all sectors of the economy (government and non-government) to land development so as to maximise the Republic's capacity to:-
 - national, provincial and local governments should strive clearly to define and make known the required functions and responsibilities of all sectors of the economy in relation to land development as well as the desired relationship between such sectors; and
 - a competent authority in national, provincial or local government responsible for the administration of any law relating to land development shall provide particulars of the identity of legislation administered by it, the posts and names of persons responsible for the administration of such legislation and the addresses and locality of the offices of such persons to any person who requires such information.
- ◊ Laws, procedures and administrative practice relating to land development should:-
 - be clear and generally available to those likely to be affected thereby;
 - in addition to serving as regulatory measures, also provide guidance and information to those affected thereby;
 - be calculated to promote trust and acceptance on the part of those likely to be affected thereby; and
 - give further content to the fundamental rights set out in the Constitution.
- ◊ Policy, administrative practice and laws should promote sustainable land development at the required scale in that they should:-
 - promote land development which is within the fiscal, institutional and administrative means of the Republic;
 - promote the establishment of viable communities;
 - promote sustained protection of the environment;
 - meet the basic needs of all citizens in an affordable way; and
 - ensure the safe utilisation of land by taking into consideration factors such as geological formations and hazardous undermined areas;
- ◊ Policy, administrative practice and laws should promote speedy land development.
- ◊ Each proposed land development area should be judged on its own merits and no particular use of land, such as residential, commercial, conservational, industrial, community facility, mining, agricultural or public use, should in advance or in general be regarded as being less important or desirable than any other use of land.
- ◊ Land development should result in security of tenure, provide for the widest possible range of tenure alternatives, including individual and communal tenure, and in cases where land development takes the form of upgrading an existing settlement, not deprive beneficial occupiers of homes or land or,

where it is necessary for land or homes occupied by them to be utilised for other purposes, their interests in such land or homes should be reasonably accommodated in some other manner.

- ◆ A competent authority at national, provincial and local government level should co-ordinate the interests of the various sectors involved in or affected by land development so as to minimise conflicting demands on scarce resources.
- ◆ Policy, administrative practice and laws relating to land development should stimulate the effective functioning of a land development market based on open competition between suppliers of goods and services.

5.2 The Municipal Systems Act

The Municipal Systems Act No. 32 of 2000 was promulgated to ensure financially and economically viable municipalities. A Chapter of the Act deals with Integrated Development Planning which requires for every municipality to adopt a strategic plan for the development of the municipality.

One of the core components of the Integrated Development Plan as set out in Part 2, 26(e) of the act, read as follows: ***“a spatial development framework which must include the provision of basic guidelines for a land use management system for the municipality.”***

It should be noted that the IDP and its components, once adopted by the Council of the Municipality, ***“is the principle strategic planning instrument which guides and informs all planning and development, and all decisions with regard to planning, management and development, in the municipality*** and it also indicates that a ***spatial development framework contained in an integrated development plan prevails over a plan as defined in section 1 of the Physical Planning Act. 1991 (Act No. 125 of 1991)”***.

5.3 Disaster Management Policy

The Buffalo City Municipality Spatial Development Framework indicates the following basic guidelines for Disaster Management:-

- ◆ No development should take place on land within the 1 in 100 year flood line. In certain cases, exemption may be granted for development up to the 1 in 50 - year flood line (but commonly only in cases where existing development has occurred) and with waiver of liability 50m offset from 1:50 and subject to size of catchment;
- ◆ Development is prohibited on slopes steeper than 15% (or 1m in 6m), with exemptions in certain cases being permitted for development on slopes up to 18% (or 1m in 5m) or more (but not for public-funded housing development);
- ◆ Phase 3 Engineering Geotechnical reports should be undertaken prior to planning of new areas for settlement/development; and

- ◆ Wherever possible mitigation steps should be taken to prevent informal settlement development within 1 in 100 - year flood areas. Where such settlement has occurred, appropriate steps should be taken to clear the area and secure it from future settlement. This process should be dealt with in terms of the Housing Policy.

5.4 Controlled Areas

- ◆ Policy on Controlled Areas around municipal and infrastructure installations such as Waste Disposal Sites; Waste Water Treatment Works etc. which specify minimum distances from installations within which development shall not take place.
- ◆ Policy on Controlled Areas around Airports, which include the following stipulations:-
 - Areas where $L_{Rdn} = 55$ dBA: Residential developments not allowed; nor are other noise-sensitive uses such as hospitals, educational institutions, conference facilities and places of worship;
 - Areas where $L_{Rdn} = 60$ dBA: Commercial uses are permitted, including retail/shopping, offices, consulting rooms;
 - Areas where $L_{Rdn} = 65$ dBA: Commercial/Industrial uses are permitted, including CBDs, motor trade, warehousing. Also agricultural uses involving livestock and breeding and cemeteries;
 - Areas where $L_{Rdn} = 70$ dBA: Industrial activities are permitted; i.e. manufacturing, assembly, repairing, packaging, bus depots, builders yards etc;
 - Areas where $L_{Rdn} = 75$ dBA: Agricultural land uses not involving livestock are permitted, as well as picnic facilities and open space (vacant land);
 - Areas where $L_{Rdn} = 80$ dBA: Prohibited area; i.e. no land development to be permitted; and
 - Any land uses proposed within the 55 dBA and 60 dBA noise contours surrounding an airport must be referred to the Airport Authority and/or the Airports Company of South Africa (ACSA) for approval.

5.5 General Municipal Policies

- ◆ Policy on Noxious Trade and Industry development, including a clear definition of noxious uses;
- ◆ Policy on Spaza Shops in residential areas;
- ◆ Policy of Hawkers and the appropriate management and facilitation of informal trade;
- ◆ Policy on Bed & Breakfast and Boarding House establishments;
- ◆ Policy on the minimum sizes of housing units relative to the average or norm in a given precinct, are or suburb in Buffalo City;
- ◆ The Shipping Container Policy;
- ◆ The Street-Naming Policy;
- ◆ Policy on the Closure of Public Roads for the purposes of erecting privately controlled security gates or booms (the “gating” of suburbs or precincts);
- ◆ Policy on the Operation of Taverns in residential areas;
- ◆ It is to be noted that the Social Services Directorate and the IEM Unit are currently preparing a Coastal Zone Management Plan, which could have further Implications for some of the above policies and guidelines; and

◆ Also see the Buffalo City Municipality Housing Policy and the “Red Book” Guidelines (“Guidelines for Human Settlement Planning and Design”).

5.6 Coastal Zone Management Plan

Buffalo City is currently formulating a Coastal Zone Management Plan for the one kilometre belt along the coastline and estuaries extending from the Keiskamma River to the Kwelera River. The policies contained in this Plan have been taken into cognisance in the review of the Quenera Plan in order to achieve policy alignment. In addition, it is a requirement that the requirements of the Coastal Zone Management plan be taken into account in future Land Use Management decisions for the Quenera.

5.7 Subtropical Thicket Ecosystem Planning (STEP) Project

The STEP Project identified most of the Gonubie Valley and the area between the Gonubie River and the Kwelera River as a Mega-conservancy Network. With regard to this network the STEP Handbook mentions the following:-

“to ensure the persistence of biodiversity - The Mega-conservancy Networks (MCN) (or, for short, the Network) comprise corridors of land along major river valleys and the coast which were identified as needing special safeguarding to ensure the sustainability of socio-economic systems and biodiversity. To achieve this, a co-operative strategy for conserving these corridors or pathways and enhancing livelihoods has been developed.”

As a principle development within the Mega-conservancy Network (as identified by STEP) must contribute towards the upgrading of the thicket, so that there is a net gain for the environment once the development is done – this is in line with the recommendations of STEP for these ‘Network Areas’.

It should be noted that the STEP mapping is done on a bioregional scale and should be used as a ‘flagging’ tool to make role-players aware of the Subtropical Thicket Ecosystem. The Mega-conservancy Networks are intended to be flexible and to promote sustainable Land Use Management. These networks are demarcated broadly and networks should be established within these broadly demarcated areas. Development that promotes the long term survival of the thicket could be allowed in these networks.

5.8 Sustainable Development

According to the National Environmental Management Act (NEMA) ‘sustainable development’ means the integration of social, economic and environmental factors into planning, implementation and decision making so as to ensure that development serves present and future generations. It is clear that sustainable development means adopting a broad approach to development by considering social, economic and ecological factors in an integrated fashion.

Sustainable development with respect to the management of growth also concerns the greenhouse gas emissions, inefficient uses of energy, all of which occurs when urban sprawl is not entirely dealt with.

The cost benefit analysis must deal with the above in terms of additional distances travelled and quantify consequent additional pollution and energy wastage.

With urban sprawl, issue is no less about where the city ends and the rural areas begin but rather about what is sustainable.

According to Chapter 7 of the Constitution, the objectives of local government are:-

- ◆ To provide a democratic and accountable government for local communities;
- ◆ To ensure the provision of services to communities in a sustainable manner;
- ◆ To promote social and economic development;
- ◆ To promote a safe and healthy environment; and
- ◆ To encourage the involvement of communities and community organizations in the matters of local government.

If the three elements of sustainable development, namely Economic Vitality, Ecological Integrity and Social Equity, and the objective of local government in terms of the Constitution are considered it becomes clear that a balance should be found and that compromise becomes necessary.

6. SITUATION ANALYSIS

6.1 Physical and Social Characteristics

6.1.1 Land and Developed Form

The Quenera area has a diverse character including; beaches, dunes, indigenous dune vegetation, river valleys, open grassland and steeper rocky slopes inland. Most of the land is developable with only certain portions being affected by steep slopes overlooking the upper reaches of Gonubie and Quenera Rivers and should accordingly be protected.

From an orientation point of view the major portion of Quenera faces south to south west which is special due to river views. Alternatively, from a climatic point of view the orientation can be problematic due to prevailing winds from the south west, resulting in exposure to wind to rain. This feature has to be countered by design and construction of residential buildings. It is a feature of the orientation of roads (particularly in Gonubie and the Gonubie Main Road) that the rising and setting sun can be a hazard to drivers of motor vehicles.

The Quenera area is relatively underdeveloped and is enfolded by the suburban character of Beacon Bay and Gonubie. There is a relatively low density of urban form in the area and there are few buildings which dominate the landscape.

There are a number of properties where development has occurred since the original Framework Plan was approved. These include several along the Gonubie main road, properties at Meisie's Halt and commercial clusters at major intersections. At the time of the review of the Plan, several more properties, both within the Quenera area and east of the planning area, were the subject of

development applications before the Municipality, or being investigated by property owners and developers for future development. These included:-

- ◆ Farm 793 (East of the Gonubie river - Green Eco-village);
- ◆ Farm 809 portion 2 (along the Gonubie main road);
- ◆ Farm 809 portion 5 and Erf 1342 (at the N2 interchange);
- ◆ Farm 784/1 (overlooking the Gonubie River);
- ◆ Farms 1273 (situated between the East Coast Resorts road and Sunrise-on-sea);
- ◆ Farm 807 portions 21,22,23,31,30,29 and28 (Adjacent to Mzamomhle);
- ◆ Farm 799 portion 76(North of the Gonubie main road);
- ◆ Farm 808 (West of Mzamomhle);
- ◆ Farms 807/37, 808/6, 808/3 and 808/2 (East of the Quenera river);
- ◆ Portion 51 of Farm 817 (adjacent to the N2); and
- ◆ Farm 764/5 (east of the Gonubie River).

The large number of properties involved are indicative of the buoyant nature of the property market in the city and the high level of demand for development at the time of review.

6.1.2 Land Use

The proximity of the planning area to the developed urban area and its history of being a rural district under the jurisdiction of the Amathole District Municipality has resulted in the Quenera area becoming a mixed land use area. There is predominance in agricultural land use in the areas further from the coast and beyond the Gonubie Main Road and the N2. However, a noticeable diversity of land uses exists along the main roads, ranging from horticultural nurseries, to service industries and shops. It is noticeable that many under-utilised and unoccupied properties exist between Gonubie and Beacon Bay itself, which might relate to the uncertainty about future of development in the area and a desire to avoid investment until more certain plans exist.

A common characteristic of marginal farm land on the edge of urban areas is the excavation of building materials, stone and gravel. There are several quarries and sand excavations which exist. The most environmentally contentious being the excavations along the dune zone by the Public Servants Association (P.S.A.). The development of the river and coastal strip for holiday resort purposes has tended to be limited because the Quenera Valley is relatively remote (accessible by gravel road) and the river is relatively limited in carrying capacity.

6.1.3 Land Ownership

Almost the entire study area is privately owned, with small pockets of properties owned by the Amathole District Municipality, Eskom and Government. Buffalo City is negotiating to acquire land adjacent to Mzamomhle for the purpose of reconstruction of these informal housing areas; however these procedures are lengthy and complex.

6.1.4 Population

◆ Existing

Buffalo City was estimated to have a total population of 701 895 in 2001 (Integrated Development Plan and Census). Some 35 000 to 40 000 people were believed to be living in the study area of the Quenera Framework Plan in 1997 and according to the IDP, the population of the city has grown relatively slowly at an average of 0.6% per annum. The 2001 census statistics for the Quenera area would suggest the 2001 population was 46 383 in wards 3, 4 and 5 (refer to Table 1). At the average annual growth rate of 0.06%, the estimated population in 2005 is possibly in the order of 46 494 people.

Table 1: Gender and Population

	MALE	FEMALE	TOTAL
Ward 3	7 274	8 009	15 283
Ward 4	7 590	8 630	16 220
Ward 5	7 066	7 814	14 880
TOTAL	21 930	24 453	46 383

Source: STATSSA (2001)

The majority of the population are females (24 453) with some 21 930 males. It is also important to note that 13 556 of the population (namely 29.2%) were under the age of 15 or over 65 years in age.

◆ Future Population

It is of interest to note that the Urban Structure Plan for the Quenera area (1988, amended in 1993) suggested that development of the under-utilised farms could accommodate some 30 000 people (in addition to Beacon Bay and Gonubie). The estimates of the Quenera Framework Plan 1998 supported this estimate although in reality, little growth has occurred outside of Gonubie and Mzamomhle. The IDP Review suggests a relatively slow growth rate (0.6% per annum) although the demand for property in the area seems to suggest this low growth scenario is unlikely.

The extent to which the growing population can be accommodated at Quenera is directly related to certain key factors:-

- The development of privately owned land;
- The nature and density of future development;
- Availability of bulk infrastructure and road access to support development; and
- The pace at which development can match population growth and demand.

◆ **Socio-Economic Characteristics**

The census statistics of 2001 reveal that the majority of the population earn less than R1 600 per month (see Table 2 below):-

Table 2: Annual Income

CATEGORY	WARD 3	WARD 4	WARD 5	TOTAL
No income	158	1 063	738	1 959
R 1 – 38 400	1 761	2 284	2 461	6 506
R 38 401 – R307 200	3 115	1 928	1 126	6 169
R307 200 – R614 400	202	278	222	702
R614 401 +	54	96	59	209

Source: STATSSA (2001)

These lower incomes are considered typical of the nature of employment in the area which is predominantly domestic employment, commerce and small building enterprises.

The lower levels of average household income (which are generally below the Household Subsistence level of R1500.00 per month, are indicative of the fact that many of the people have limited incomes. Accordingly, proposals relating to housing and infrastructure have to take into account these lower affordability levels.

It is important to note that whilst a number of the residents have employment, many earn a very low income. Table 3 depicts the employment status.

Table 3: Employment Status

	EMPLOYED	UNEMPLOYED
Ward 3	7 124	523
Ward 4	6 013	2 779
Ward 5	5 313	2 446
TOTAL	18 450	5 748

Source: STATSSA (2001)

Table 4: Employment Profile 1995

	FULL TIME	PART TIME	SELF EMPLOYED	WELFARE	UNEMPLOYED
Nompumelelo	43%	23%	9%	8%	42%
Mzamomhle	36%	17%	5%	4%	42%
Ducats	26%	14%	3%	35%	53%

Source: STATSSA (2001)

6.1.5 Public Funded Housing

The informal housing area of Mzamomhle was estimated in 1998 to accommodate some 10 000 people. Formalisation of the settlement through public funded subsidies has not yet accommodated all the families living in shacks, which is particularly due to the continued growth of the informal settlement. A desk top shack survey conducted with aerial photographic

interpretation over the period 2001 to 2004, revealed that some 2100 families need a formal home.

Buffalo City has proceeded with a programme of purchasing adjacent smallholdings in the vicinity of Mzamomhle to enable additional housing and social facilities to be constructed. It is projected that at least 2500 homes should be provided in such a public funded housing project.

6.1.6 Institutional Characteristics

With the amalgamation of the municipalities of East London, Gonubie and Beacon Bay there has been a re-arrangement of the institutional structure in the area. Of greatest significance is the fact that most of the Quenera area is now within the boundaries of the Buffalo City Municipality and no longer administered by the Amathole District Municipality. This means that the planning area is covered by statutory plans such as the Buffalo City Zoning Scheme promulgated in terms of the Land Use Planning Ordinance and the Spatial Development Framework (2003 – see Section 4.5 above) in terms of the Municipal Systems Act. The institutional approach at present involves the application of planning and administrative control on the basis of policy and standard practices. There are a number of institutional structures in existence, representing the needs of the people in the area, including:-

- ◆ Ratepayers Association for Gonubie; and
- ◆ Ward Committees for Wards 3, 4 and 5.

6.1.7 Development Trends and Development Potential

The greatest amount of development activity is occurring at the nodes along the N2 at Meisie's Halt and along the Gonubie Main Road. With respect to residential development trends, there are three main development trends namely;

- ◆ Development of smallholdings into residential sites north and south of the Gonubie Main Road in Quenera;
- ◆ Expansion of Riegerton Park in a Westerly direction, and
- ◆ Expansion of Mzamomhle in a northerly and/or westerly direction.

The Quenera area is seen to have considerable development potential due to the vastness of its relatively underdeveloped land and superb views and vistas over the Gonubie and Quenera Rivers. The areas considered to have the most development potential, accordingly include the hillsides overlooking the rivers, the Quenera river mouth and the land alongside the Gonubie Main Road.

The areas with less development potential are the tracts of land which have been mined out (adjacent to the dune zone and Mzamomhle), the areas affected by clay soil and poor sub-soil drainage (situated north of the dune zone) and areas where infrastructure would prove very costly to develop (i.e. the area north of the Gonubie Main Road).

6.1.8 Implications

The relatively large tracts of under-utilised land situated in the Quenera and Gonubie Valley are considered to have high potential for suburban development. At the same time, there are areas of alluvial soil in the Gonubie Valley believed to have high potential for agriculture and other areas having attractive scenic value and environmental sensitivity.

There is a rising mood of expectation that development could occur in the area and several owners have indicated an interest in maximising the potential of their properties. The predominance of privately owned land means that this area differs from other sectors in the city where the land is in the hands of the authorities and accordingly development is directed by the Municipality. For there to be successful development of Quenera there will need to be a partnership between the City Council, officials, residents and landowners to see to a co-ordinated programme of infrastructure provision and development, which is in accordance with the trends, needs and common vision of all the role players in the area.

7. ENVIRONMENTAL ASSESSMENT

The environmental assessment conducted in 1997 (S. Muller: Coastal; and Resource Management) provides a sound basis for understanding the characteristics of the primary planning area. This assessment is set out below. In addition, the characteristics of the coastal zone in the context of the Coastal Zone Management Plan and the findings of the STEP Project have been reviewed in 2005, so as to update the earlier assessment.

The area assessed is the primary planning area as described in Section 1 above and depicted on Plans 1, and 2. The assessments are based on an existing working knowledge of the study area, a survey of existing literature and numerous site visits.

7.1 Existing Environmental Conditions – Abiotic

7.1.1 Geology

The geological data for the original Quenera Framework plan report was extracted from the Estuaries of the Cape, Part II, Report no 42 by Wiseman et al. The majority of the geological formations encountered in the study area belong to the Karoo system. The mud and sandstone deposits of the Beaufort Series predominate and are mainly of fluvial origin, having been laid down during the warmer Permian and Triassic periods. Sandstones tend to predominate along ancient flows whilst mudstones occur elsewhere (Rust 1988).

The hinterland and river catchment descends towards the coast in a series of steps at the 250 to 300 m; 200 to 180 m; 90 and 60 m contour intervals. The major topographical features have been created by uplift and faulting during the Jurassic period when the seaward extension of the coastline caused the rivers to erode to new base levels. The hilly and undulating topography within the coastal region has been created by the numerous unnamed tributaries of the major rivers which established themselves during the glacial periods.

7.1.2 Soils

The Quenera area is affected by four predominant soil systems namely:-

- ◆ Mudstone and sandstone;
- ◆ Post Karoo Dolerite;
- ◆ Fixed Dunes and Dune Rock; and
- ◆ Beach and Bare Dunes.

These soil characteristics influence the development potential, costs of infrastructure and nature of construction in different ways. The most sensitive and fragile area is that situated along the dune zone and within the influence of that system.

These sandy areas are underlain by clay soils which are extremely costly to build on and require sub-soil drainage measures (Mzamomhle is an example of this).

Further inland there is a ridge of Lower Beaufort Sandstone and Mudstone with generally shallower soils and better founding conditions. The river valleys have alluvial soils which are valuable for intensive agricultural concerns. The Quenera area (and the hinterland) is noticeable for its pockets of successful agriculture operations including strawberries, tomatoes, flowers, nuts and fruit. Most of these activities are centred along the upper reaches of the river valleys beyond the N2 and in the Gonubie Valley between the N2 and the Gonubie Main Road. Clay deposits in the Gonubie river valley supported brickworks which operated for many years.

A detailed soils investigation was undertaken in the Quenera area, for the expansion of Mzamomhle. An engineering geological investigation at Mzamomhle by Gavin Fisher (Blue Horizon Consulting) was undertaken in 1996 with the aim of assessing the surface and sub-soil conditions, with the view to further urban expansion.

The study showed that development of Mzamomhle in a westerly direction will be problematic from a geotechnical point of view. Major drainage and shallow water table problems exist, coupled with the occurrence of expansive clay horizons and un-cohesive sandy material displaying collapse potential and extremely low allowable safe bearing capacities. Successful development in the area implies increased costs as a result of the need for specialised civil engineering solutions.

7.1.3 Topography

The area is a dissected coastal plain with the watersheds/catchments of two major rivers (Quenera & Gonubie) forming the study area. The coastline features a cordon of vegetated dunes. Numerous small streams and rivers traverse the area with riverine vegetation along their banks and slopes (See Plan 2). The Gonubie has the highest conservation status of the three major rivers.

At the time of preparing the original Quenera Framework plan, the Buffalo City Municipality Director of Community Services pointed to the need for special protection of the environment in the vicinity of the streams and rivers. This

matter is now the subject of a city-wide Environmental Management planning process, including a Coastal Zone Management Plan.

Erosion/degradation of the Gonubie and Quenera Rivers could seriously affect the river mouths which are important to the City. It is of importance to note that the beach at the Gonubie River mouth has “Blue Flag” beach status and the condition of the estuary is critical to this significant tourism product.

7.1.4 Pollution

The pollution associated with the rivers in the study area indicate that there are problems. For example, it is reported by Arcus Gibb that significant quantities of solid waste is disposed in the river that flows through the Gonubie Golf Course. The quality of water is poor and often displays an unnatural contouring and an oily film on the surface. Although some industrial nodes do emit, they are small and the pollution problems are minimal.

7.1.5 Existing Environmental Conditions - Biotic

7.1.5.1 Flora

The diversity of climatic conditions and the topography of the Study Area dictate that large variations in vegetation occur. Forests, grasslands and savannah thicket form a complex mosaic of vegetation communities. Characteristics of both Cape Flora and Sub Tropical Flora are evidenced within the transitional floral types found in The Study Area. The main Floral types represented are:-

- ◆ **Littoral Strand Vegetation** - pioneer species colonising the sand dunes, Found all along the coast within the Study Area.
- ◆ **Dune Forest/Coastal Thicket** - vegetation along coastal dune sections inland of the littoral strand zone; characterised by dense cover, consisting mostly of shade intolerant species and species adapted to tolerate high salt spray; good examples may be seen at the PSA Sand Mine.
- ◆ **Transitional Coastal Forests** - found in some of the river valleys close to the coast including Quenera and Gonubie Rivers; exhibits well structured layers consisting of the canopy layer and intermediate tree and shrub layers.
- ◆ **Valley Bushveld** - subtropical thicket occurring within rivers; characterised by succulent type vegetation; examples can be found in the large river courses including Gonubie, and Quenera. The thicket vegetation in these areas usually contain a mixture of species from ii), iii) and iv).
- ◆ **Grasslands** - grass covered hills inland from the coastal thicket; commonly referred to as sour grass; isolated patches of this occurs the Study area but the bulk of the plains have been man modified.
- ◆ **Savannah** - acacia and grass commonly called thornveld; a coastal vegetation type which is under pressure from coastal developments and agricultural practices.

- ◆ **Mosaic of Natural Vegetation and Agriculture** - this vegetation type occurs where the thicket communities are in the process of, or have been cleared for agriculture and there is a transition between the former natural vegetation type and the secondary grassland or cultivated land. The disturbance is generally irreversible and from a conservation aspect such areas are of reduced significance.
- ◆ **Alien and invasive Vegetation** - stands of alien plants species are well established within the study area. *Lantana camera*, *Sesbania punicea*, *Acacia mearnsii*, *Acacia saligna* *Acacia cyclops*, *Cestrum laevigta*, *Pereskia aculeata*, *Cirium vulgare*, *Psidium guajaa* and *Ricinus communis* are major problem species encountered along the coast.

7.1.5.2 *Fauna*

All fauna species found in the environmental assessment are confined to the water courses and the coastal dune systems and are highly sensitive to habitat destruction or modification. In addition, evidence of trapping and hunting further impact upon the species abundance. Free access to preferred habitat can be facilitated by allowing corridors along watercourses and thickly vegetated areas, which link adjoining habitat areas.

7.1.6 **Environmental Development Impacts**

- ◆ Established Formal Townships such as Gonubie and Beacon Bay which are located on land that was grassland and forested but has been significantly man modified. The Director of Community Services suggested that there is a need to complete the East London Metropolitan Open Space System proposals and include this area into those policies.
- ◆ Informal Settlements such as Mzamomhle are having a considerable on the environment. Signs of degradation such as solid waste accumulation and inappropriate agriculture methods in close proximity to watercourses are becoming apparent. Further, it is reported that soil erosion, ground water contamination, removal of dune vegetation and socio-economic impacts of informal settlement are significant.
- ◆ Coastal resort developments such as Quenera Caravan Park and the PSA holiday camp as well as certain other proposed developments. These resorts are frequently in remote locations and create demands for infrastructure with significant distances between supply and demand. As such they have environmental impact that is greater than development within the existing built-up area.
- ◆ Agriculture/rural farming communities (such as the area around Meisie's Halt) which are also detached from the existing built up area similarly have an impact upon the environment.

7.1.7 Environmental Impacts and Income Levels

Population groups at different income levels tend to have different priorities and different perceptions of the importance of environmental concerns relative to other needs. Environmental values tend to be a priority only for those whose basic needs have been satisfied. Low income settlements produce a solid waste disposal problem that is frequently very visible but the upper income settlements are responsible for the bulk of the solid waste production and disposal. One of the major problems associated with the middle and upper income settlements is the hardening of surfaces and the consequent pollution of water courses and beach areas from stormwater run-off. The demand by all income groups for a single dwelling on a plot of land as opposed to high density, attached forms of housing is a stimulator of urban sprawl. Other environmental problems in the upper income area include the desire to build upon primary dune structures for reasons of proximity to the beach and sea views.

7.1.8 Agriculture

Agriculture plays an important role in the Study Area. Most agricultural land use takes place to the south and north of the Gonubie main road. Small holding and larger farming units dominate the land use pattern. Small agricultural holdings do not allow productive large scale farming activities, but provide for the daily needs of the residents. Large agricultural holdings are situated in the east of the study area and are market orientated producing fresh produce, dairy products and market vegetables. The only agricultural processing in the area is that of packaging tomatoes. Although the agricultural activity on some of the farms in the area are economically viable, the following land use conflicts have been identified:-

- ◆ The laws (Nema and Water Act) protecting the water courses on farming properties appear to be flouted in the study area. Water courses are indiscriminately dammed; streams dry up and natural flushing no longer occurs. The riverine vegetation becomes heavily impacted and usually dies and alien vegetation chokes the rivers.
- ◆ Fertiliser, fodder and waste products on farms are often flushed into water courses, adding nitrates and phosphates, which result in eutrophication within watercourses and eventually stagnancy and death of the system.
- ◆ Lands are often inappropriately farmed. The research required to determine the optimum utilisation of the land is available, but farmers are disinclined to change old practices or involve themselves in what they consider unnecessary expense. As a consequence many farms are not productive.

7.1.9. Commercial and Industrial

In most residential areas within the study area, neighbourhood shopping nodes supplying convenience goods have developed. Small holdings in the vicinity of the Gonubie Main Road and the old Transkei Road are used for a variety of industrial, commercial and business purposes. Examples include; backyard motor vehicle workshops, Seed plan, Caravans-R-U's, the Stonehenge industrial

flats, furniture warehouses, motor vehicle sales, frozen food storage, sand quarrying, and other light industries. The main environmental problem associated with these land uses are multiples of access points onto the main road and uncontrolled methods of waste disposal. Large stockpiles of waste are accumulated and fluid waste is dumped into water courses, which eventually percolates into the ground water.

The development of the informal commercial sector will result in a greater demand for water, power and particularly a greater demand for solid waste disposal. The north east and south west sectors of the planning area are dominated by nodes of commercial development. Toward the southern sector of the area industrial activities become more fragmented, although there is a tendency to aggregate in the vicinity of Meisie's Halt and the Gonubie Main road. From the environmental perspective there are few objections to developing light industries in the already existing industrial/commercial nodes. However the expansion of these nodes into or onto the headwater of any of the streams should be discouraged. The discharge of waste products should therefore be particularly well controlled.

7.1.10 Conservation, Recreation and Tourism

Approximately half of the coastline within the planning area is protected by a strip of State Forest which parallels the shoreline from the high water mark to approximately 200 - 400 m inland. The Coastal State Forest Land is utilised as a buffer zone along the coastline for the following reasons:-

- ◆ To prevent the landward encroachment of sand;
- ◆ To protect back dune development from wind blown sand;
- ◆ To afford back dune vegetation protection from the salt spray, especially during north easterlies;
- ◆ To enhance the aesthetics of the surroundings; and
- ◆ To allow educational groups access to a small part of an active dynamic zone not normally available or accessible due to development.

The Gonubie Nature Reserve (a municipal nature reserve proclaimed through the provincial ordinance) has high avian species diversity. It is the only nature reserve within the Study Area.

7.2 Existing Infrastructure

7.2.1 Water

The bulk raw water supply to the planning area is from the Bridle Drift Dam on the Buffalo River and forms part of the greater Amatola Water Resources System.

The greater Beacon Bay and Gonubie residential areas are provided with bulk treated water from the Umzoniana Water Treatment Works in Wilsonia. Water is gravitated to consumers by means of bulk pipelines as shown on Plan No. 4.

There are two mains from Vincent Heights, crossing the Nahoon River, to Beacon Bay. The 250mm main gravitates directly into the Beacon Bay

reservoirs from where the lower lying areas of Beacon Bay are supplied. The 375mm main runs to the intersection of Bonza Bay and Edge Roads and supplies water directly off the main to the higher areas of Beacon Bay, Nompumelelo and Homeleigh.

From the intersection of Bonza Bay and Edge Roads 100 mm and a 250 mm main proceed directly to the Gonubie reservoir. A 400 mm main crosses the Quenera River to the Wembly reservoir site. The Wembly reservoir is at present not fully utilised and has spare capacity. The two mains from the Wembly reservoir to the Gonubie reservoir are 100mm and 200/250 mm in diameter.

The residents of the higher areas of Beacon Bay, Nompumelelo, Homeleigh and Quenera and those living along the Gonubie Main Road to the west of the Gonubie reservoir are supplied with water directly from these bulk supply pipelines. During summer peak demand periods a low pressure supply is experienced.

This problem is a direct result of the dedicated bulk conveyance water mains (trunk mains) being increasingly utilised to feed directly into adjacent reticulation networks without the buffering effect of Reservoir Storage, resulting in a loss of Bulk Conveyance Capacity especially during peak demand periods.

In all aspects, existing Bulk Supply pipelines have not been sized to cater for the full development of agricultural land in the Quenera area, or any other area zoned as agricultural land adjacent Beacon Bay or to the north east of the Gonubie River.

The resorts of Sunrise-On-Sea and Rainbow Valley to the east of Gonubie are supplied with treated water from the Gonubie reservoir via a pipeline across the Gonubie River.

7.2.2 Sewerage

The sewerage infrastructure serving the planning area ranges from temporary toilets and portable chemical toilets, to full water borne sewer system.

The major components of the full water borne sewer system are shown on Plan No. 5 and comprise the following:-

- ◆ Two pump stations in Beacon Bay which pump sewage to the Quenera gravity sewer;
- ◆ A 450/525mm diameter gravity sewer from the Beacon Bay residential area to the Gonubie Sewage Treatment Works (via the Quenera);
- ◆ Gravity and pumped sewers from the Gonubie residential area to the Gonubie Sewage Treatment Works; and
- ◆ The Gonubie Sewage Treatment Works which is situated between Mzamomhle and the coast. It treats all the domestic sewage from Beacon Bay and Gonubie.

The effluent is treated by means of an activated sludge reactor and clarifier. Waste mixed liquor is discharged to a sludge lagoon. Most of the treated effluent is discharged to the Indian Ocean via the Klokha river. Some of the

effluent is disposed of by irrigation at the Gonubie Golf Course and at a private farm in the Quenera area. The treatment works has a 6 Ml/day capacity, with 2 Ml spare capacity. The treatment works are being investigated by Consulting Engineers, with regard to future expansion potential or relocation.

The majority of the agricultural small holdings have septic tanks.

7.2.3 Electricity

Eskom presently supplies electricity to the Buffalo City Municipality for distribution in the region, and more specifically to the planning area, from the national grid via the substation at Aloe Glen just south of the Ducats informal settlement. From here it is distributed to the Royston and Greenacres substations at Beacon Bay and Gonubie respectively (refer Plan No.6).

The Municipality supplies power from the Greenacres substation in Gonubie to the network that serves Gonubie. A 66kV servitude between Royston and Greenacres is registered should it become necessary to upgrade the bulk supply to the area.

Consumers in the Meisie's Halt, Quenera, Gonubie Valley areas and those adjacent to the main road to Gonubie are provided with power directly from the Eskom 11/22 kV network.

All "formal" houses in Mzamomhle, as well as the clinic and school, are provided with power from the [Buffalo City](#) 11kV network.

7.2.4 Solid Waste

There is one solid waste transfer station/disposal site within the study area, which is privately owned and situated south of the Gonubie Main Road on the Rieger Estate.

With regard to removal of solid waste, Buffalo City serves the entire area including, Meisie's Halt, Gonubie, Mzamomhle and the ribbon along the Gonubie Main Road.

The servicing of new developments in the Quenera area would be a natural extension of the present system. For disposal of garden refuse, the Rieger's garden refuse site is used, which is favourably situated on Farm 800/1 along the Gonubie Main Road. It is currently for use by Gonubie residents only. The site essentially comprises a large depression created by sand mining activity which still continues along the western fringes. Its present use for the disposal of garden refuse is mutually beneficial to Council and owners. The site is fairly well maintained and not situated in a water course. The back filling operations with garden refuse, builder's rubble and excavated soil actually assists with the rehabilitation of this mining site. Certain businesses in the Quenera area operate their own limited disposal sites and this practice must be discouraged.

7.2.5 Transportation

The North-East Corridor which serves the Quenera area contains the high income residential areas of Nahoon, Beacon Bay and Gonubie. The corridor stretches along the coast to the east of the CBD and adjacent employment areas. All commuters living within this corridor currently travel to work by minibus taxi or car; using the east-west arterials to reach their work destinations in the west of the corridor (mainly East London's CBD and the West Bank) Few people work within the corridor itself. At the first public meeting of the review process, members of the public indicated that there is a need for accessible taxi ranks with public facilities, to serve commuters into and out of Mzamomhle and Gonubie. This would require a detailed study to identify appropriate positions and the needs of the commuters concerned.

The planning for and implementation of transport projects in East London is carried out by the Municipality on behalf of the Buffalo City Metropolitan Transport Advisory Board. The first Comprehensive Integrated Transport Plan is currently being prepared by the Transport Planning and Development Section within Buffalo City Municipality and will cover all aspects of private transport, public transport, non-motorised transport, freight transport, arterial road network development, traffic safety, special needs passenger transport and environmental issues related to transport. The Board is responsible for undertaking regular traffic counts and preparing an Integrated Transport Plan which is updated on an annual basis.

Congestion during the morning peak is experienced on the west bound side of the N2 between the Bonza Bay/N2 and North East Expressway NEX/N2 interchange and along the Gonubie Main Road. Limited congestion is also experienced along the Gonubie Main Road during the evening peak.

The Directorate of Development Planning appointed Consulting Engineers to investigate the road network requirements of the Quenera area, including the routes for service roads along the Gonubie Main Road, the possible alignment of link roads in the Quenera and Gonubie valleys. and investigations into the upgrading requirements of the Gonubie Main Road.

During the review process the municipality constructed safety barriers along a portion of the Gonubie Main Road, as part of the first phase of upgrading the route. The second phase will involve constructing a pedestrian and cycle track behind the barrier and, the third phase will involve the main road becoming a three lane road. The two west bound lanes will carry traffic from the Gullsway intersection to the N2 intersection and a single lane will cater for east bound traffic. Ultimately it is proposed to have a four lane road, service roads on both sides of the main road and traffic circles at key intersections.

The preliminary design of the Beacon Bay/Gonubie link road and an environmental assessment of the proposed link road between Beacon Bay and Gonubie commenced during the review period.

7.2.6 Roads

The major roads serving the study area are shown on Plan No. 3 and comprise the following:-

- ◆ The N2 freeway which runs parallel to but inland from the coastline. This serves as the primary access road for residents of Gonubie and the Quenera wishing to travel to the East London CBD, King William's Town and Mthatha;
- ◆ The Gonubie Main Road (M10 E-W) which is the only access road to Gonubie and the Quenera;
- ◆ The East Coast Resort/Old Transkei Road which forms the North Eastern boundary of the planning area. This road provides access to the residents of Gonubie Valley via Meisie's Halt;
- ◆ The NEX from the N2 interchanges to the East London CBD in the South;
- ◆ The N6 which provides access to the hinterland via Macleantown and Stutterheim; and
- ◆ A gravel surfaced district road through the Quenera (DR 02721) to the Quenera Lagoon. This road provides access for some of the small holding residents of the Quenera as well as the residents of Mzamomhle.

7.2.7. Telecommunications

The majority of home owners in Quenera and Gonubie have private telephone services. Public telephones are available at Mzamomhle and cellular telephone coverage is provided by Vodacom, Cell C and MTN.

8. KEY DEVELOPMENT ISSUES

8.1 Opportunities

The broad physical opportunities that exist in the Quenera area include the following:-

- ◆ High development potential for high value residential properties overlooking the sea, and the Quenera River and Gonubie River;
- ◆ Opportunities presented by the Main Roads, N2 and junctions, involving accessibility and business linkages;
- ◆ Intensive commercial farming in the area providing much needed jobs, with high technology methods and infrastructure;
- ◆ Opportunities offered by the dune zone and river mouths for tourism/holiday resort developments;
- ◆ At the time of the review, there was a limited opportunity provided by an existing bulk sewer with a small amount of spare capacity, passing through the Quenera area. On this basis, the existing sewerage treatment works are only able to accommodate approximately 2000 new connections;
- ◆ A more positive development approach appears to be forming between property owners and the municipality, concerning co-operating over mutual interests in bulk infrastructure capacity and resulting capital costs; and
- ◆ Broad opportunities exist for residential development on the under-utilised land which has a relatively easy slope adjacent to Gonubie Main Road.

8.2 Constraints

Constraints to development are fairly severe in relation to the following:-

- ◆ Environmental sensitivity of the rivers, coastal zones and, in particular the subtropical Thicket Biome;
- ◆ Insufficient infrastructure capacity regarding water, sewerage and roads along the Gonubie Main Road, at Meisie's Halt and in the Quenera valley;
- ◆ Existing servitudes and reserves for electricity and Gonubie/Beacon Bay Link road are to be respected in future design;
- ◆ The informal settlement of Mzamomhle, is constrained by insufficient infrastructure investment, lack of capacity and shortage of suitable land for expansion;
- ◆ The informal settlement is a constraint to higher income developments in the Quenera area;
- ◆ The area is traversed by numerous small well vegetated water courses, which makes planning more complex than normal;
- ◆ There is a lack of consensus on areas where development should not be permitted for environmental reasons; and
- ◆ Development below the existing gravity sewer and in the Gonubie river valley, will require pump stations and pumping mains.

8.3 Needs

There are a number of needs which need to be addressed including:-

- ◆ Land for expansion of affordable housing for those people who wish to reside and work in and around the Quenera area;
- ◆ An environmental policy of respect and understanding of the importance of good environmental practice to ensure sustainable development;
- ◆ Regular monitoring and review of development in relation to the plan and development management principles;
- ◆ Upgrading of infrastructure to cater for the development objectives of the people of Quenera;
- ◆ Increased capacity of the Gonubie Main Road;
- ◆ Construction of a secondary link between Gonubie and Beacon Bay, as a means to improve accessibility within the Quenera area;
- ◆ Formulation of land use development guidelines which can be used as a management tool to co-ordinate the phased provision of infrastructure and also, guide the development process on the basis of consensus by all stakeholders in the Quenera area;
- ◆ Adequate allocation of land for regional and local commercial and industrial land uses;
- ◆ Accommodation of the development trends which are occurring in the area so as to maximise the opportunities for beneficial development, job creation and an enhanced quality of life in the area; and
- ◆ A public transport system with appropriate facilities for the travelling public.

9. DEVELOPMENT PERSPECTIVE

9.1 Spatial Development Perspective

The Quenera area is considered to be a prime development area (special development zone) due to its physical features and relationship to the coastline and pristine rivers. Buffalo City is expected to experience continued growth in population and the relatively under-utilised land between Beacon Bay and Gonubie offers itself for predominantly residential development in many different forms to suit demand. Recognising that most of the land is privately owned, the original Quenera Framework Plan stated that **“The success of residential development will depend upon the extent to which the property owners and the Municipality are able to secure funding for bulk infrastructure in accordance with demand for homes in the area.”** This statement still remains valid at the time of the review process and active discussions concerning financial contributions by developers have taken place, leading to firmer Council policy in this matter.

The Quenera area includes a main tract of land which is particularly expensive and difficult to service. This is the Gonubie River Valley, to the north of Gonubie Main Road. It is considered uneconomic and illogical to invest in large scale development in these areas whilst other, more easily serviced areas are available in the Quenera Valley.

With regard to the primary strategy of the Buffalo City SDF, which is the creation of sustainable employment, the Quenera area is considered unsuitable for large scale industrial and commercial development. This is due to the fact that most of the existing commercial and industrial areas are in the western sector and inland (along the N2). It is accordingly suggested that the creation of sustainable employment in the Quenera area be focused around the main strategic areas of opportunity which exist already. These include the development corridors and nodes along the major road links and at intersections. Provision needs to be made for appropriate land reservations to accommodate commerce, service industry, institutional and educational facilities in an integrated form as development proceeds.

There is a growing mood of interest and optimism among all stakeholders in the Quenera area that positive progress can be made in developing this sector of the City. This goodwill and positive energy needs to be harnessed and channelled to achieve balanced and beneficial growth for the City. The key requirements to achieve this will be having agreement on the vision for the planning area, prioritising of infrastructure upgrading and consensus on the key actions to be taken within the short to medium term future.

9.2 Alternative Scenarios

Over the years, various plans for the Quenera area have referred to the alternative options of trying to make the area self-sustaining in order to reduce the impact of traffic on the Gonubie Main Road and the N2.

The alternative scenario to this was that of accepting the dominance of the City and planning the future development on the basis of the linkages between Quenera and the City in the form of a traditional suburban area.

The transition that is underway in the Central Business District does reinforce the likelihood of decentralised commercial and industrial centres in outlying suburban areas. Accordingly, the future development scenario for the Quenera is seen to be that of a predominantly suburban area with pockets of mixed commercial/service industrial development integrated into a varied residential landscape.

A further scenario which will have an influence on the future of the Quenera relates to the perception of land value and development potential by the land owners themselves. Continued political stability, favourable interest rates and demand for residential accommodation will support residential development. Instability, insecurity, high interest rates and a fall off in economic development and demand will result in the stagnation of much of the Quenera area.

9.3 Strategic Approach

In order to maximise opportunities in the Quenera it is seen to be strategically important for the overriding significance of private land ownership to be identified and engaged in a constructive relationship between the land owners, City Council, Municipality and other stakeholders.

In order to achieve positive and sustainable development in the area, a strategic partnership must be put in place to maximise the resources of all role-players in the interests of all parties. This should be achieved by a constructive and proactive process of consultation between the Development Planning Directorate and the landowners and stakeholders in the area.

10. FRAMEWORK PLAN

10.1 Development Principles

The framework for the study area is based on the key development issues identified and the alternative scenarios. The following development principles (as recommended by the Development Facilitation Act) are recommended for the Quenera Local Spatial Development Framework:-

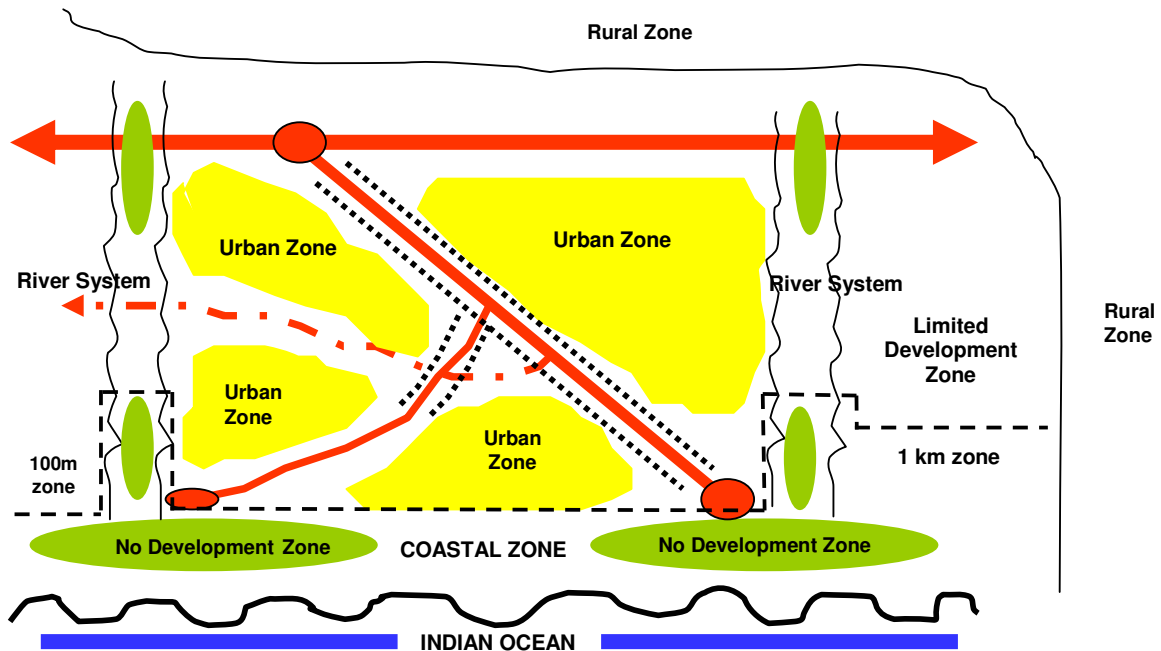
- ◆ Provide for urban and rural, formal and informal and existing and new development;
- ◆ Discourage illegal land occupation (land invasions) but acknowledge informal development;
- ◆ Stimulate and promote efficient and integrated development through:-
 - Integrating the socio-economic, institutional and physical aspects of development;
 - Promoting integrated development in urban and rural areas in support of each other;

- Rationalizing residential and work areas (work close to home);
 - Optimal use of existing resources;
 - Diverse combination of land uses (mixed land uses);
 - Discourage urban sprawl and promote (appropriate) greater densification resulting in more compact cities and towns and thus better use of existing infrastructure;
 - Rectify historically skewed/distorted infrastructural and service provision and maximise use of existing infrastructure and services; and
 - Sponsor environmentally sustainable development practices and processes.
- ◆ Allow for active and direct community participation in development and assist in mobilising resources;
 - ◆ Assist in developing community and individual skills and capacity, particularly those from disadvantaged backgrounds, who are involved in development;
 - ◆ Encourage and optimise the participation and involvement of all sectors of the economy (public and private sectors);
 - ◆ Promote sustainable development at the required scaled, vis-à-vis:-
 - Within fiscal, institutional and administrative means;
 - Establish viable communities;
 - Sustained protection of the environment;
 - Safe utilisation of land (geo-technical, undermined, etc); and
 - A suitable development levy system.
- ◆ Provide that any and all development will be adjudged on its own merits and no preferences will be given to any particular type of development or land use.
 - ◆ Development should fund conservation.

10.2 Conceptual Development Framework

At a conceptual level, the Quenera Area is framed by sensitive environmental systems under increasing pressure. These comprise the coastal environment extending up the estuaries and the riverine network up to the hinterland catchments. Being the last area in the Buffalo City eastern seaboard, in close proximity to infrastructure, major road access and facilities; the Quenera and Gonubie Valleys need to accommodate mixed use development as the City grows. This development needs to be managed carefully.

The conceptual development framework (refer to diagram below) simply represents a rectangle of developable land, dissected by a development corridor along the Gonubie Main Road, with a link down to Mzamomhle. This rectangle of developable land is framed by the sensitive environments of limited development and no development zones located in the river valleys and coastal zone.



10.3 Planning Proposals

The distribution of proposed future land uses is depicted on Plan No 8 and the estimated phasing of development is shown on Plan No 10.

10.3.1 Proposed Structuring Elements and Density Zones and Land Uses

The Quenera area is underdeveloped, partly due to a lack of accessibility and an absence of bulk infrastructure. In addition, the establishment of Mzamomhle has created an atmosphere of uncertainty and investor concern related to the growth of shacks and an apparent lack of decisive and rapid action by the authorities to manage and upgrade the settlement. Finally, a further activity which has affected the spatial structure of the Quenera is the widespread sand mining in the area behind the primary dune zone, which has detrimentally affected the visual/aesthetic quality of the area.

The analysis of trends and development opportunities establishes a clear spatial pattern in the Quenera area, based on certain spatial structuring elements, focussed around the Gonubie Main Road corridor and the mixed land use concentrations on each end of that link (namely the Gonubie business area and Meisie's Halt – refer to Plan No 7).

The spatial structuring elements comprise the following:-

- ◆ Nodes – including urban areas, mixed use nodes, tourism resorts and rural service nodes;
- ◆ Limited development zone;
- ◆ No development zone;
- ◆ Rural zone;
- ◆ Urban edge; and
- ◆ Activity streets.

The specific spatial structuring elements, density zones and land uses are described below:-

10.3.1.1 Urban Edge

This Spatial Development Framework Plan recommends the urban edge contained in the Buffalo City Spatial Development Framework Plan (2003) be reviewed as part of the Urban Edge study to be conducted in the near future. Such a study would need to take into account the development trends of the area, the inherent potential for agricultural activities, the environmental implications and infrastructure consequences of moving the urban edge to a new position.

10.3.1.2 Activity Street

As a consequence of the above factors, the spatial structure of the Quenera is seen to remain focussed around the Gonubie Main Road (an activity street) as defined in the Buffalo City Spatial Development Framework Plan, extending down a development “spine” along the Quenera Road towards Mzamomhle.

The new link road between Beacon Bay and Gonubie would “break the ice’ in the under developed Quenera area and provide an opportunity for development to take place further away from the Gonubie main road corridor. In this way it is envisaged that more concentrated, higher density and higher rise development could occur along the activity street, then down the Quenera Road to Mzamomhle. Less concentrated and lower density development would be encouraged closer to the rivers, further away from the main transport routes.

10.3.1.3 Zone 1: Nodes – Urban Areas

There are two major nodes being that of the N2 junction with the Gonubie Main Road and secondly, the Gonubie business centre. Other mixed use nodes are expected to develop along the main road at junctions (for example; at the intersection with Gullsway) and further down the Quenera valley itself.

The existing density of development in Gonubie and Beacon Bay ranges from low density detached dwellings (at 10 dwelling units per hectare) to attached dwellings and group homes (at 30 dwelling units per hectare). There are a few pockets of medium density housing involving flats and/or double storey townhouses. Generally, it could be said that development density is not considered high, since high density development usually involves 100 or more dwellings per hectare.

The rapid growth of the City, increased demand for land and facilities; coupled with the higher costs of services, is necessitating the development of higher density residential precincts. National policy is encouraging densification of cities to maximise utilisation of resources and achieve more economic/efficient use of services or infrastructure.

In keeping with these policies and the structural proposals it is recommended that the current development management principles be amended to encourage

higher density development. Accordingly, the development corridors along Gonubie main road and the Quenera Road should enable higher density development of at least 80 dwellings per hectare in mixed use zones (including flats, houses, shops, institutions and service industries). The surrounding areas, including existing informal settlements, should accommodate medium density development (up to 50 dwellings per hectare). Finally, it is recommended that increasingly lower density residential development be encouraged away from transport routes at an approximate density of between 10 and 20 dwelling units per hectare.

The plan recommends that commercial and industrial development be focused around various nodes at junctions between main roads. It is also proposed that nodes be supported at the junctions along the proposed new road link between Beacon Bay and Gonubie at its intersection with Gullsway and another intersection in the central Quenera valley. The size, scale and intensity of service industrial development needs to be investigated, particularly as the Gonubie main road provides a gateway to the area and uncontrolled, ugly industrial buildings could blight the urban environment to the detriment of the area.

The bulk of the Quenera area is proposed for residential development including, higher density residential (80 to 100 dwellings per hectare of developable area) along the development corridors and medium density to low density development (50 dwellings to 20 dwellings per hectare) to 20 dwellings per hectare or less further away from the development corridors. The level to which these proposals are achieved is going to be determined by the demand for residential accommodation, the availability of bulk services and the interest in property owners/developers in maximising the potential of their land.

Of critical and urgent importance is the pro-active action by the City authorities to redevelop and upgrade Mzamomhle. The extension of Mzamomhle in a northerly direction onto more suitable land is seen to be urgently needed in order to replace the shack areas that are growing around that suburb. In future, it is envisaged that higher intensity/medium density housing would be developed in a westerly direction. These would comprise attached dwellings and possibly even two to three storey walk up flats for those families who wish to lease rather than own accommodation.

Provision has been made for a variety of land uses involving institutional and community uses, including:-

- Recreation area north of Mzamomhle
- One secondary school site is to be constructed at the intersection of Gullsway and the proposed link road to Beacon Bay.
- Expansion of Sewage Treatment works (currently being investigated); and
- **Provision for future schools**, social facilities and amenities needs to be made by developers/private land owners at the time of submission in accordance with accepted planning standards. The standards for the provision of schools are debatable but the 'Guidelines for Human Settlement Planning and Design' (redbook), compiled for the Department of Housing by the CSIR, indicates that 1 high school should be provided for every 6 000 – 10 000 people and that 1 primary school must be provided for every 3 000 –

4 000 people. If this standard is applied to the Quenera area, in terms of the maximum development capacity indicated in Table 5, a total number of 7 high schools and 18 primary schools will be required. Two of the required high school sites are indicated on Plan 8, but clearly, more will be required. The size of these school sites is to be determined using the standards set in the 'Guidelines for Human Settlement Planning and Design' (redbook). Combined sites (i.e. a high school and a primary school combined on one site) of ±6 ha are encouraged.

Land close to the river mouth zones has been earmarked for tourist resort sites and similar holiday resort development, subject to Environment Impact Assessments, the Coastal Zone Management Plan and flood level studies.

10.3.1.4 Zone 2: Limited Development Zones

These environmentally sensitive areas comprise areas where there can be low intensity, environmentally and culturally sensitive development. These zones act as buffers between the urban settlement and rural areas.

The principle that will apply is that development must pay for conservation and the I.E.M.P Unit must indicate what actions and what contributions are needed. It is also proposed that the application of an Environmental Levy be investigated by the I.E.M.P Unit. Agricultural activities, in particular erection of agricultural tunnels and clearing of land, in this area are also to be controlled by means of an E.I.A.

The Gonubie Valley area is recognized as being generally more environmentally sensitive than the West Bank area. Development in the Gonubie Valley area should therefore be limited and managed and the density of developments (number of units) should therefore also be limited further for this area. In terms of the West Bank Local Spatial Development Framework Plan, a developer could develop 3 units on a 1 hectare property in the Rural Zone in the West Bank area and this relates to a density of 3 units per hectare.

In view of the current understanding of the environmental sensitivity of the Gonubie Valley area and in the absence of an Environmental Management Framework and applying the Precautionary Principle (as required by NEMA), densities approximately 10% of normal urban densities are proposed. This relates to a density of 2 dwelling unit per hectare with the proviso that this will be the maximum density permitted and exclude hotels.

Should any scientifically valid environmental data come to light that indicates that the 2du/ha policy and the stated proviso's are insufficiently cautious, the policy will be reviewed. Densities of 2 dwelling units per hectare in the absence of specific national guidelines appears to be a suitable compromise when sustainability is looked at holistically i.e. pressure for development, economic growth, potential environmental sensitivity and growth of the city.

Development should be clustered in such a way as to promote the movement of species in the Thicket corridor.

10.3.1.5 Zone 3: No Development Zone.

This zone comprises the designated Nature Reserves, coastal forest areas, estuaries, land below the 1 in 100 year flood line; areas needed for the reclamation or rehabilitation of indigenous vegetation, river banks and slopes of 1 in 5 or steeper. This zone is essentially a no physical development area, located both within and outside the urban edge, to protect the biophysical environment, as well as to preserve areas of outstanding natural beauty.

No development is allowed in this area, except for soft ecotourism and adventure activities.

10.3.1.6 Zone 4: Rural Zone

The rural zone is situated outside the urban edge, comprising larger agricultural properties, rural and semi – urban settlements, coastal tourism resorts and rural service nodes. The rural zone is under pressure for development involving land use change and subdivision. This occurs particularly in the transitional area located along both sides of the urban edge, where the urban area changes to rural character.

The Land Use Management Guidelines below set out the details concerning desired development in the rural zone, that of agricultural and conservation being the predominant uses. It is however, recognised that small clusters of resort and accommodation type developments could be developed in the remote rural zone, where services and infrastructure are difficult to access.

The land beyond the N2 is generally recommended for continued agricultural land use in the interests of protecting valuable productive smallholdings. However, certain key pockets situated close to the Gonubie River are recommended to remain for agriculture, where it can be established that deep alluvial soils with high potential for agricultural production exist. Applications for other land uses allowed in this zone on these high potential agricultural soils would be subject to the availability of infrastructure to support the change in land use, the STEP policy guidelines, the Coastal Zone Management Plan, environmental assessment findings and approval from the Department of Agriculture.

10.3.2 Potential Development Capacity

The Quenera area has a developable area of some 2000 hectares, excluding No Development Zones steep slopes, river banks and areas below flood levels. If the different density proposals (discussed above) are allocated to the various portions of land according to the proposed spatial structure, it is possible to derive an estimate of the total potential development capacity which could be achieved at full development of developable land (at maximum density - refer to Table 5 and Appendix 9).

Table 5: Maximum Development Capacity (Hypothetical)

Development	Hectare	Units	People
Low/Residential	996.0	6 972	20 916 (3)
Medium/Residential	183.8	6 436	32 180 (5)
Commercial/Industry/Residential Mixed Uses	286.1	5 722	17 166 (3)
Limited Development Zone/Agricultural (Other uses subject to services)	475.7	476	1 428 (3)
Tourist Resorts etc	14.2	426	1 278 (3)
TOTAL	1 955.8	20 032	72 968

Note: Appendix 9 depicts the calculations used to calculate the maximum development capacity.

The above table indicates a hypothetical situation whereby some 20 000 dwelling units could be achieved, accommodating some 73 000 people (at maximum development). The spatial distribution of the amount of developable land is depicted on Plan No 9.

This future development will in many respects be influenced by the investor confidence of the country and Buffalo City, the availability of privately owned property, the future scenarios affected by crime and stability, bulk infrastructure and the demand for accommodation in this sector of the City. As a result, it is expected that maximum development capacity is unlikely to be reached in the short to medium term, if at all.

With regard to water supply, the required water demand generated by the future developments in the Quenera area will have to be investigated as part of the Water Master Plan, which is being prepared at the time of the review of the Quenera Framework Plan.

10.3.3 Proposed Infrastructure

10.3.3.1 Introduction

The existing and future infrastructure needs were assessed and a cost estimate, prepared for the Buffalo City Municipality to service the vacant land in the greater Quenera area by providing bulk infrastructure based on the following:-

- ◆ Review of the existing bulk engineering services.
- ◆ Liaison with BCM Directorate of Development Planning and Engineering Services as well as Eskom staff to obtain information regarding existing services, planned projects and current capacity problems
- ◆ Liaison with other Consulting Engineers appointed by BCM and private developers for infrastructure projects in the Quenera area
- ◆ Evaluation of future infrastructure demands and future bulk engineering services
- ◆ Positioning and sizing of infrastructure to meet the projected demands

The total cost to provide this bulk infrastructure is estimated to be R596 million as shown in Appendix 10 and is based on the information on plan numbers 3 to 6 included with this report.

10.3.3.2 *Water*

The Raw Water Conveyance System Capacity requires to be augmented by means of the raising of the Intake Weir, the addition of a new suction main from the Weir Intake to the small pump station, small pump station upgrade, including upgraded electrical small supply, the installation of an additional rising main.

The Umzoniana Water Treatment Works in Wilsonia will need to be upgraded by approximately 22 Megalitres per day. A new 500 mm diameter bulk gravity main will also need to be constructed from the treatment works to Beacon Bay to supply sufficient water to meet the demands of the development of the Quenera area. A number of additional reservoirs and bulk supply mains, as shown on plan number 4 will also need to be constructed within the study area to meet these future demands.

10.3.3.3 *Sewerage*

It is estimated that the capacity of the Gonubie Sewage Treatment Works would have to cater for the additional 16 Megalitres per day of sewerage that would be generated by the development of the Quenera area.

The September 2005 report on the existing capacity and upgrading possibilities of the Gonubie Sewerage Treatment Works by SRK Consulting Engineers indicates the following:-

- ◆ In the short term an additional 3 Megalitres per day capacity could be created at the present treatment works by constructing 2 new sludge lagoons, upgrading the present aerators and boosting the electricity supply to the works. This would address the present shortage of capacity at the treatment works that is hampering development in the area and can be completed within one year depending on the availability of finance.
- ◆ Upgrading of the treatment works to the full required capacity is possible and this would require more significant changes to the works and this is seen as a medium term solution.

The long term solution to the treatment of sewage effluent within the boundaries of the Buffalo City Municipality is presently being investigated and will be managed on a regional scale, which falls outside the scope of this report.

Upgrade of existing sewage pumpstations and construction of new pumpstations with bulk mains will be required, as shown on plan number 5, to service the Quenera area.

10.3.3.4 *Electricity*

Most of the areas within the Quenera Framework Plan area are not covered by a reticulation network and coupled with the present electricity network shortages, would require major extensions and upgrades to the existing networks and substations.

The existing Eskom 66 kV electricity transmission network will be extended north from Royston to the Greenacres 66/11 kV substation, utilising an established

servitude. The new 66 kV reticulation will comprise a combination of underground cables in the established residential area along Edge Road, and overhead powerlines through the Quenera and Gonubie areas and will also include the construction of the new Quenera 66/11 kV substation as shown on plan number 6.

The Eskom electricity powerlines will be positioned within the road reserves in the Quenera area to provide an electricity service grid for internal development. Streetlighting will be supplied to Buffalo City Municipality standards within the road reserves of the roads indicated on Plan 3.

10.3.3.5 Solid Waste

Servicing of the additional Quenera area erven would fall within the existing Buffalo City Municipality's waste disposal system which would be extended to cover the entire area of this study.

10.3.3.6 Transportation

Further to the ongoing traffic studies within this area a "regional" overall traffic study is required to incorporate the effects of the additional traffic generated by the development of areas like this and the Industrial Development Zone on the Buffalo City area wide metropolitan network study.

10.3.3.7 Roads

Upgrading of the Gonubie Main road ultimately to 4 lanes with service lanes on either side and designated controlled entry points with separate pedestrian/cycle track lanes. The Beacon Bay to Gonubie Link road and a network of roads within the study area will need to be constructed to provide access for the development of this area. The extent of the required road networks is shown on plan number 3 attached to this report.

10.3.4 Development Contributions

Council has stipulated a policy for Buffalo City requiring developers to make a contribution to bulk infrastructure costs based on a square metre rate according to the estimated cost of infrastructure to render a development possible.

Apart from any other contributions required for infrastructure the cost of rehabilitation, upgrading and maintaining the portion of land to remain as undeveloped could also be considered to be the applicants "development contribution" or "green levy" in return for the additional zoning rights applied for.

With regard to school sites, developers with suitably located flat land will be required to allocate and rezone portions of their land for education purposes. The process of allocating these sites is to be done by the developer in conjunction with the Buffalo City Municipality and the Department of Education, taking into account the required standard sizes for school sites as well as the number of schools that will be required to service the Quenera area as calculated in Section 10.3.1.3 of this document. The location of the proposed

sites are flexible up to a point only as the provision of school sites is a non-negotiable.

The detailed Council policy pertaining to development contributions for infrastructure is contained under separate cover. However, it is considered appropriate that this policy be refined to take into account factors relating to whether the development is inside or outside the urban edge, generates traffic, has social development and/or conservation implications.

11. LAND USE MANAGEMENT GUIDELINES

Consideration of these Land Use Management Guidelines needs to take into account the Conceptual Development Framework and Spatial Structuring Elements described above.

11.1 Background

The following miscellaneous guidelines taken from the Buffalo City Spatial Development Framework (BCM SDF) are highlighted:-

- ◆ “For the purposes of settlement planning, the standards for settlement design and development set out in the Guidelines for Human Settlement Planning and Design (the so-called “Red Book” compiled by CSIR Building and Construction Technology, 1998) be adopted and used in the scrutiny of relevant land developments;
- ◆ The General Principles set out in Section B.2.1 (BCM SDF) be incorporated into the preamble of the Land Use Management System;
- ◆ All land developments should be undertaken in accordance with an approved Layout Plan and/or Site Development Plan. After approval, only minor deviations from the applicable plan are to be permitted; and
- ◆ Land development within identified nodes and development corridors should be approved subject to appropriate conditions in relation to landscaping, which should aim at enhancing the legibility of the built environment.”

11.2 Land Use Management Guidelines Applicable to the Identified Density Zones

Table 6 provides a summary of the proposed Land Use Management Guidelines.

11.2.1 Zone 1: Nodes/Urban Areas

These encompass the generally developed urban areas and mixed use development nodes located at major intersections (such as Meisie’s Halt) rural service centres (such as Crossways) and areas of commercial/industrial concentrations. Standard provisions of approved policies, Town Planning controls, building by-laws, aesthetic and signage controls are in place for these areas.

11.2.2 Zone 2: Limited Development Zone

This zone embraces generally more sensitive areas due to their position near to the Gonubie River. This zone would accommodate the following development:-

- ◆ Limited and regulated tourism activities;
- ◆ Small accommodation facilities that are low-key, low-impact and in harmony with the natural environment;
- ◆ Controlled low density residential housing development;
- ◆ Agricultural activities;
- ◆ Infrastructure other than eco-tourism facilities and residential use (such as schools and retail offices) are to be discouraged;
- ◆ Full IEM procedures are to precede any development;
- ◆ Density: 2 dwelling units per hectare;
- ◆ Building footprint 200 m²; and
- ◆ Subdivision : Maximum size – 1500 m².

These are areas where limited development may occur subject to an environmental assessment and management plan, the STEP guidelines, Coastal Zone Management plan and associated protocols.

Residential development on erven immediately adjacent to, and outside abutting the Urban Edge (in the Limited Development Zone of transition between urban and rural areas) will be considered up to a maximum of 2 dwelling units per hectare and the following criteria will apply:-

◆ Planning Considerations

- The density of 2 dwelling units per hectare excludes hotels;
- In the event that more than 50 % of the property is constrained by slopes steeper than 1 in 5 gradient and 1 in 100 year flood level, the density shall be reduced to a maximum of 1 dwelling unit per hectare.

◆ Environmental Considerations

- The Coastal Zone Management plan and STEP principles will apply;
- A full EIA will be required as per NEMA which must consider inter alia:
 - The sustainability of ground water.
 - Other aspects of long term sustainability.

◆ Social

Social impacts such as the location and extent of employee housing, associated social facilities, public access to coastal zones, negative social effects of gated communities, the impact of urban sprawl, infrastructure cost impact on rate payers, traffic congestion and alternative land uses which could generate employment opportunities, are to be taken into account in a cost benefit analysis study (see 11.2.5.1).

11.2.3 Zone 3: No Development Zone

- ◆ No development is to be permitted on any dune within coastal forests, nature reserves and the outer boundary of the vegetation of coastal forests and reserves.

- ◆ All river valleys and ground with slopes equal to or exceeding 1 in 5 should be demarcated as no-development zones.
- ◆ It is widely recognised that sea levels are expected to rise in the foreseeable future and it is therefore recommended that no development should be allowed below the 10 meter contour (i.e. 10m amsl).
- ◆ All estuaries within the study area should be given protected status and development of the banks of the estuaries, up to the ebb and flow, is prohibited to a distance of 100 metres from the high water mark. It is recommended that access to estuaries be limited and that boat launching only be allowed where the estuaries are permanently open and of sufficient depth.
- ◆ Launching sites should not be located at the mouth of the estuary but rather be located up stream and well within the tidal compartment. No development including, jetties and boat houses, should be allowed within 100 meters of the high water mark and all structures should be located vertically, at least 10 metres above the high water level.
- ◆ Areas below the 1 in 100 year flood line are excluded from development (development specifically includes all boundary walls and fences);
- ◆ Areas required for the rehabilitation of indigenous vegetation identified in the environmental management plan are excluded from development;
- ◆ Areas that are developable, but cannot be accessed without going through undevelopable land are also regarded as undevelopable;
- ◆ A suitable setback line on either side of all water courses, streams and rivers should be determined (by the EIA process) before any development takes place. These offset distances may include the 100 year flood level but the vegetation within this zone is not to be disturbed, cleared or altered, except to remove alien vegetation. No clearing of riverine vegetation (excluding alien vegetation) should be allowed.
- ◆ Access to rivers and beaches are only to be created after specialist evaluation and prior approval from the relevant authorities.
- ◆ Development within 1km of the coastal high water mark needs to be controlled in terms of the provisions of the Buffalo City Coastal Zone Management Plan and the Coastal Management Bill.

Table 6: Quenera: Land Use Management Guidelines (Summary)

No	Zone	Definition/objective	Proposed Permissible Land Uses & Activities	Proposed Development Controls/Guidelines
1	Nodes/Urban Areas	<p>Nodes encompass the designated first and second order nodes. First order nodes are the most urban and extensively developed areas, of a 'seaside resort' nature, such as Sunrise on Sea.</p> <p>Second order nodes are less developed and less urban in nature, being more focused on 'family holiday' tourism and recreation facilities, provided by both the development and the environment.</p>	<ul style="list-style-type: none"> • Rural Areas: Transport interchanges, shops, government and municipal satellite offices, retail outlets and social facilities • Second order nodes: Tourism cottage settlements, smaller cluster complexes and family hotels may be developed. B&B's, Lodges and small Shops. • Densities: First order Nodes 80 du/ha 50 du adjacent to activity street 10 - 20 du/ha elsewhere 	<p>Infrastructural requirements: Infrastructure and service provision should be designed to accommodate increasing use by tourism developments and local communities within acceptable carrying capacity limits.</p> <p>Access: Usually on main road – gravel to be upgraded to tar, where possible. Suitable pedestrian paths to beach etc to be provided;</p> <p>Appropriate bulk services to be provided by municipality Electricity supply and Telkom lines where possible.</p> <p>Carrying Capacity: To be determined for each node and not to be exceeded (constraints to include facilities, bed numbers, day visitors etc).</p> <p>Building code: Cottage-type architectural vernacular to be encouraged/enforced, minimum set-backs to be encouraged, developments not to disturb/break existing views treelines (i.e. height restriction – possible max 2 storey)</p>
2	"Limited Development" Zone	<p>Areas which fall within the "limited development" category, but not within the No Development Zone are areas where there can only be low intensity, environmentally and culturally sensitive development. Development should protect and promote environmental, cultural and landscape integrity.</p> <p>Land use in this zone must be compatible with the relevant provisions of Coastal Zone Management Policy and the provisions of the Land Use Management Guidelines. These zones should act as a buffer zone between the nodes and Conservation Areas.</p>	<ul style="list-style-type: none"> • Limited and regulated tourism activities. • Small accommodation facilities that are low-key, low-impact and in harmony with the natural environment. • Controlled low density residential housing development. • Agricultural activities. • Infrastructure other than eco-tourism facilities and residential use (such as schools and retail offices) to be discouraged. • Full IEM procedures to precede any development. • Density: 2 du/ha (excluding hotels). • Building footprint 200 m². • Subdivision : Maximum size – 1500 m². 	<p>Infrastructural requirements: Access along existing roads into areas, No roads parallel to the beach. Suitable service infrastructure to cater for eco-tourism developments.</p> <p>Carrying Capacity: To be determined for each development Development constrained by agreed carrying capacity and sense of place statement Ecological, social and quality of experience criteria to apply. Number of people visiting remote areas to be restricted to preserve the quality of the experience.</p> <p>Building code: Use of natural/local material where possible, blending in with the natural environment. 1 storey only. Minimal development/building footprint to be enforced. Facilities to be tailored to the specific characteristics of the local geographical area.</p>
3	No Development Zone	<p>These comprise the designated Nature Reserves, coastal forest areas, estuaries, river banks and steep slopes (1 in 5 or greater) Essentially a "No physical Development" zone to protect & conserve biophysical environment, as well as to preserve areas of outstanding natural beauty/scenery/ sense of place.</p>	<ul style="list-style-type: none"> • Regulated through DEAET and co-management arrangements and EMPs. • Controlled subsistence harvesting in line with Environmental Management Plan. • <u>No permanent physical structures.</u> • No development other than eco-tourism and soft-adventure activities. 	<p>Infrastructural requirements: Access along existing paths/trails only. No tar roads permitted. No bulk services /servitudes.</p> <p>Carrying Capacity: to be determined for each development.</p>

4	Rural Zone	Areas situated beyond the urban edge, the limited development zone, around the rural tourism nodes and service centres.	<ul style="list-style-type: none"> • Agricultural uses • Conservation, nature reserves, special uses, and private open space • Tourism accommodation and resort development (refer to Tables 7 and 8) • Building Footprint <ul style="list-style-type: none"> ▪ Holiday 100 m² ▪ Ownership 200 m² • Subdivision max. size of erven <ul style="list-style-type: none"> ▪ Holiday 1000 m² ▪ Ownership 1500 m² • Densities – refer to Tables 7 and 8 	<p>Infrastructure Requirements:</p> <ul style="list-style-type: none"> • Existing access to be utilised where possible • Infrastructure to be self sustaining • National Building Regulations apply
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11.2.4 Zone 4: Rural Zone

The type of development to be permitted outside of the Urban Edge should promote tourism and the creation of sustainable job opportunities (long term). There are several development controls for developments proposed outside the urban edge, including those set out below.-

11.2.4.1 Business and Commercial Developments

Criteria for Business and Commercial developments outside the urban edge require that the rezoning of Business/Commercial/Industrial uses must occur in conjunction with identified rural nodes.

11.2.4.2 Agricultural Land

The East London Zoning Scheme indicates that the minimum subdivision of agricultural land is 0,8 ha. However, it is proposed that within Buffalo City Municipality a minimum subdivision size of 10 hectares for agricultural land is applicable in order to be in keeping with the above permitted number of dwelling units. This will also ensure that agricultural land is not developed for residential purposes under the guise of an agricultural zoning.

In keeping with the Land Use Planning Ordinance 15 of 1985, Scheme 8 Regulations, where no subdivision is involved a density of 1 dwelling unit for every 10 ha up to a maximum of five additional dwelling units is permitted.

The subdivision of farms into multiple individual farms to avoid the rezoning process and/or the density requirements below are not considered desirable as it negates the intention of the density and coverage policy and will not be supported.

With regard to the policy on the subdivision/development of sensitive environmental areas and agricultural land, including the conservation of Prime and Unique Agricultural Land, the following aspects are proposed:-

- ◆ The local Department of Agriculture must assist in the identification of Prime and Unique Agricultural Land and land that has irrigation potential;
- ◆ The guidelines produced by the STEP programme must be included as part of a checklist to confirm biodiversity and sensitivity of an area for which land development has been proposed;
- ◆ The provision of all relevant environmental legislation must be complied with; and
- ◆ The flood line policy must be complied with.

11.2.4.3 Residential Accommodation Type Development

All residential/accommodation type development in the rural zone is to be subject to the following limitations.

◆ Permitted Coverage

In order to achieve small clusters or footprints of development, the permitted coverage on any property is to be located on one area or a limited number of portions of the property and, must be located on portions of the land that would have the least impact. The remainder of the property must be zoned as private open space (the use of the private open space must be indicated), nature reserve or special (conservation purposes).

A Site Development Plan showing the development area and the remainder for the whole property will be required (including for any proposed Resort 1 and Resort 2 developments). Future applications will take the original Site Development Plan into account and no sectional title schemes, further subdivision or rezoning for resort/residential uses of the remaining area will be permitted (this must be included as a Condition of Title).

◆ Permitted Density

The density in Table 7 and 8 below is considered to be applied as maximum densities. Should the EIA/Scoping Report indicate lower densities then those prescribed densities would be applicable.

The following density principles apply to the rezoning of land for Resort uses:-

- Additional resort uses and ownership outside the urban edge are permitted at low densities; this is considered desirable for the specific purpose of populating rural land with residents who will act as custodians of the natural environment.
- The intention is to allow rezoning to resort uses where the owners will actively manage and upgrade the remaining, surrounding natural environments of the land being rezoned. This remainder would be rezoned private open space, nature reserve or special (conservation).

Table 7: Development of Land for Tourism Resort Purposes (Non ownership of units) outside of the Urban Edge e.g. Resorts.

PROPERTY SIZE (HA)	COMBINED COVERAGE	NUMBER OF UNITS PERMITTED
1 - 10	10 %	2-20
11 - 25	10 %	40
26 - 50	10 %	60
51-100	10 %	80
101-150	10 %	100
151-200	10 %	120
201 +		120 (for all farms larger than 200ha)

- Notes:
- 1.) The application of the above densities must clearly demonstrate that the development is associated with nearby tourist attractions and not merely a means of obtaining higher densities for some form of ownership.
 - 2.) A unit for purposes of Table 7 includes a dwelling unit as well as inter-leading or separate units within a dwelling unit or other buildings that can be used/rented/leased separately.
 - 3.) In Table 7 the number of dwelling units permitted in the definition of dwelling units excludes second dwelling units and bono fide servants quarters or labourers cottages. If there are servant's quarters or labourers cottage on the farm no additional such units will be permitted.
 - 4.) In addition no separate title will be granted to any servant's quarters or labourers cottages unless these are linked to legitimate Land Reform process.
 - 5.) The maximum footprint of individual units would be limited to 100 square metres.
 - 6.) Combined coverage area includes all development, buildings, sports facilities, golf courses, tennis courts etc. No development outside the combined area.

The following density principles apply to proposed accommodation/resort type developments outside the urban edge where ownership of units would be involved. In this case the recommended densities are much lower than those involving non-ownership type accommodation.

The intention of the densities permitted in Table 8 is to allow for the development of holiday/tourism accommodation types such as hotels, resorts and game farms but to discourage the development of urban type densities and in particular ownership of units outside of the Urban Edge.

Table 8: Development of Land for Residential/Accommodation Purposes outside of the Urban Edge (Full ownership of units)

PROPERTY SIZE (HA)	COMBINED COVERAGE	NUMBER OF UNITS PERMITTED FOR OWNERSHIP
< 2	10 %	1
2 -10	10 %	3
11 -25	10 %	4
26 -50	10 %	6
51-100	10 %	8
101-150	10 %	10
151-200	10 %	12
201 +		12

- Notes:
- 1.) A unit for purposes of Table 8 includes a dwelling unit as well as inter-leading or separate units within a dwelling unit or other buildings that can be used/sold/rented/leased separately.
 - 2.) In Table 8 the number of dwelling units permitted in the definition of dwelling units excludes second dwelling units and bonafide servants quarters or labourers cottages. If there are servant's quarters or labourers cottages on the farm no additional such units will be permitted. In addition no separate title will be granted to any servant's quarters or labourers cottages unless these are linked to legitimate Land Reform process.
 - 3.) No further units, subdivisions, developments or schemes that permit ownership of any sort (such as lease-hold, share block, sectional title, closed corporations, trusts etc.) will be permitted.
 - 4.) The maximum footprint of individual units would be limited to 200 square metres.
 - 5.) The maximum subdivision size is limited to a maximum of 1500 square metres.

11.2.5 **General Guidelines Applicable to all Development**

- ◆ The abstraction of water for any use from any river within the study area must have prior approval from DWAF and should require a full EIA to ensure that environmental impacts are negligible;
- ◆ In terms of the Water Act, no septic tank will be allowed in an area where underground water is utilised for domestic purposes, and no part of any septic tank or soak-away may be closer than 100 m to any river or water source;
- ◆ The applicant/developer is required to fully inform the affected communities by means of advertisements in the press and public meetings where any development type as described above is proposed;
- ◆ Erosion control and effective control of alien plants and animals will need to be addressed by the developer;
- ◆ The establishment of conservancy areas and possible game farming should be done as a co-operative venture between the BCM, DEAET and the land owners. It is recommended that local area committees for each area be established and developed. External management may be required initially;

- ◆ Dumping or creating of solid waste sites within a water course should not be permitted;
- ◆ Agricultural practises should be encouraged to minimise pollution of water courses and to manage erosion and alien vegetation invasion;
- ◆ “Greenways” should be encouraged and planned to provide quality space for future inhabitants of this area. These Greenways should, where possible, be linked and contiguous with other well established Greenways. The possibility of establishing a Open Space System within this area should be investigated.
- ◆ No further sand mining should be allowed to occur and those areas already mined should be rehabilitated to the satisfaction of the local authority and a independent environmental consultant;
- ◆ Mining activities within the area need to be more effectively controlled and limited to sites licensed by DMEA and operated within the requirement of a full Environmental Management Plan (EMP) with rehabilitation of the area after mining ceases;
- ◆ The erection of tunnels for farming as well as the clearing of land where indigenous vegetation is affected is to be subject to an E.I.A;
- ◆ **Appropriate Zoning**
In keeping with the principle of openness and transparency, the proposed zoning of any portions of land referred to in a rezoning application should accurately reflect the intention of the proposed land use. In particular, the zoning of land required for residential purposes (i.e. ownership) should clearly be distinguished from the zoning of land required for genuine resort or hotel purposes (i.e. non-ownership). Resort 1 zoning is considered appropriate for some non-ownership options whilst the relevant Residential zoning must be used for ownership options. In view of the above, the Resort 2 zoning is considered to be redundant and misleading and it is recommended that it not be used. Furthermore, it is recommended that ‘Special Zone’ be used for the environmentally sensitive portions of a particular development. The accurate use of zoning categories will allow for a more accurate assessment for municipal rating purposes;
- ◆ As a Best Practise it is recommended that approvals from National or Provincial Departments be obtained before Council make a decision regarding development applications. This should be done in order for Council to consider all aspects of the application before a decision is taken;
- ◆ A suitable set back for development from any identified STEP corridor, shall be determined in the EIA process;
- ◆ Should rezoning and subdivision applications be submitted separately for the same property, environmental scoping/EIA’s will be required;
- ◆ All Developments proposing not to link into the municipal sewerage treatment system must comply with the Low Volume (Waste) Water Treatment Plant Policy. In particular, the applicable buffer zone required around the above plants must be provided for on the developer’s site and must not impact negatively on any surrounding land use rights; and
- ◆ The land flanking the Gonubie Main Road/N2 off-ramps has a strategic location within the overall urban framework of Buffalo City and should be viewed as such when considering appropriate land uses for this land.

11.2.5.1 Documentation Requirements

◆ Motivation Report

- The Motivation Report of any application for development must motivate why Buffalo City should deviate from current policy and show how the application complies with the principles of the Development Facilitation Act (as more fully detailed in the BCM SDF), especially with regard to limiting 'urban sprawl' (as defined in the BCM SDF).
- The Motivation Report must indicate whether the dwelling units (outside of the Urban Edge) are going to be used seasonally (for holiday accommodation) or be permanently occupied.

◆ Documentation

- A Heritage survey will be required to be completed and submitted as part of any land use application;
- A report confirming availability of a sustainable water supply must be submitted as part of the land use application;
- A stormwater management plan;
- An agricultural assessment report which considers current and future agricultural potential, with written comment obtained from the Department of Agriculture, is to be supplied by the developer/applicant prior to local authority planning approval being considered.

◆ Environmental Impact Assessment/Scoping Reports

- A full EIA or Scoping Report will be needed as required by NEMA and the associated regulations. Scoping reports will also be required for subdivision applications.
- The full EIA or Scoping Report must:-
 - Indicate water resources to be used;
 - Indicate whether an Environmental Management Plan (EMP) is needed, and if so, it must indicate those areas identified for rehabilitation and the contributions required by the applicant/developer;
 - Indicate the impact on STEP in sufficient detail and in particular, the position of any STEP corridors;
 - Indicate what land is not developable as defined;
 - Indicate which sanitation system is to be used and discuss the impacts;
 - Deal with the impact of the development on ground water;
 - Indicate how solid waste management will be achieved; and
 - Indicate how the development will improve the natural environment.

- ◆ An Environmental Management Plan (EMP) must be formulated for each development in the Sub Tropical Thicket Biome unless otherwise advised by DEAET. This plan must deal with construction and operation; indicate what areas are to be conserved or rehabilitated. The DEAET must advise BCM whether a regular independent environmental audit will be required in terms of the EMP.

◆ Cost-Benefit Analysis Report

- Any application for development deemed significant (i.t.o. number of units, densities, height, visual or environmental impact, consumption of resources etc) in the Limited Development Zone or Rural Zone must provide a fully substantiated Cost-Benefit Analysis Report with such an application. The Cost-Benefit Analysis (CBA) is to include all the current and future costs to society in general as well as the affected community (proposed beneficiaries and general public); environmental costs; financial costs to the City Council from an operating and Capital point of view.
- Such a CBA Report must clearly indicate that the current and future benefits clearly outweigh the costs.
- Council reserves the right to request an independent review of the CBA at the expense of the applicant.
- The CBA Report must deal comprehensively with claims of job creation and distinguish between sustainable permanent jobs; casual jobs; non-permanent jobs (such as construction jobs). The level of skills required for jobs must be indicated, including a proposed skills development programme.
- With the emphasis on sustainability, the CBA must also take into account impact on greenhouse emissions, efficient use of energy and scarce resources.
- Cost Benefit Analysis must also evaluate social impacts (such as the location and extent of employee housing associated social facilities), public access to coastal zones, the social effect of gated communities, the impact on urban sprawl, the encouragement of ribbon development, the knock on effect and infrastructural cost impact on the ratepayers, traffic congestion and alternative land uses that could generate better employment opportunities (such as tourism and agriculture).

◆ Site Development Plan

- All applications for development (including subdivisions) require a detailed Site Development Plan. For applications for rezoning to Resort I and Residential zoning (i.t.o. the Section 8 Scheme), Site Development Plans must contain the following: density, layout, land-scaping, building design, position of all structures, stands, parking and internal roads.

11.2.5.2 Land Use, Aesthetic and Architectural Controls

The following architectural and aesthetic guidelines have been formulated in alignment with the Coastal Zone Management Plan. Generally development within the primary planning area should be designed in such a way as to respond to the scale and form of development appropriate with the type of urban area i.e. first & second order nodes; commercial, limited development area, tourism resort, etc. The following guidelines apply to all areas, and are followed by specific guidelines for primary, secondary and tourism nodes:

- ◇ Although certain types of development may be dependent on a coastal/estuarine location those that are not should be set back to minimize risks from sea level rise and coastal erosion, as well as protect the visual quality of the landscape from hard architectural settings;
 - ◇ Only public facilities/amenities should be permitted along the shoreline, subject to specialist evaluation and authorization from the relevant departments;
 - ◇ Structures should not restrict or disrupt public access to the coastline;
 - ◇ Public facilities and access should be provided for disabled persons;
 - ◇ Nodal development areas should provide planned and controlled public access to the coastline in appropriate locations with the appropriate amenities;
 - ◇ Public car parks should not be situated in dynamic coastal areas and should be setback from the coastline;
 - ◇ Public car parks to be landscaped to manage storm water runoff;
 - ◇ Public access points and facilities should be designed and located in such a way as to direct people away from sensitive coastal areas to facilitate management of coastal resources;
 - ◇ Development should not be allowed to block the views of the coastline from key public viewing points; and
- Primary Nodes/Urban Area
 - Larger types of housing developments permitted;
 - Architectural style to be in harmony with the setting & design to minimise visual intrusion and disruption to the natural and/or semi-built setting;
 - Only paints which blend in with the natural setting must be used for roofing and walls; and
 - Height restrictions as provided in the zoning scheme shall apply.
 - Secondary Nodes/Limited Development Zone
 - Maximum of two storey houses permitted;
 - Design should compliment the landscape character rather than compete against it;
 - Designs should maintain a vegetation zone between the coastline and the development to act as a buffer from winds and salt spray while assisting with visual screening;
 - Hard surface areas to have a maximum coverage of 50%;
 - Only paints which blend in with the natural setting must be used for roofing and walls;
 - Architectural style to be in harmony with the setting & design to minimise visual intrusion and disruption to the natural and/or semi-built setting;
 - Visual obtrusion of infrastructure (e.g. bulk water supply reservoirs) should be minimized by appropriate design and where possible should be sited underground (e.g. power lines); and
 - Tunnels for agricultural purposes are considered to be development and should be subject to an EIA (at least involving a scoping assessment) enabling public input to the proposed development.
 - Tourism Nodes
 - Single storey accommodation units;
 - Double storey public facilities may be constructed provided they are carefully sited and are not visually obtrusive;

- Development should be clustered in groups with minimal disturbance to vegetation through careful layout planning;
- Footprints should be minimized as far as possible;
- All buildings to blend in with the surrounding environment as far as possible with minimal removal/disturbance of vegetation for construction;
- Visual obtrusion of infrastructure (electricity and telephone lines) should be minimized by appropriate siting and design and where possible should be placed underground; and
- Plans and layouts to be accompanied by an architect report on inter alia, design specifications. Colour and form, height etc., as well as a site-specific environmental report which demonstrates how environmental considerations will/have been incorporated into the layout and design of the units and facilities. Depending on the sensitivity of the site, an environmental management plan may be required by the BCM IEM Unit.

11.2.5.3 *Environmental Requirements*

◆ STEP:

All applications for development (including subdivisions) within the STEP (Subtropical Thicket Biome) area and outside of the urban Edge require a Special EIA as contemplated in the STEP Guidelines.

◆ Coastal Zone Management Principles:

All developments are to comply with the BCM Coastal Zone Management Plan and Coastal Zone Management Act.

◆ National Environmental Management Act:

Any application must comply with NEMA (as amended) and the relevant regulations (especially Chapter 4).

◆ To ensure quality of EIA's the following is proposed:-

- A review consultant is to be appointed at the discretion of DEAET and at the developers expense, to confirm/review inter alia
 - whether a sustainable water source is available
 - whether sufficient areas for endangered, indigenous vegetation (forming part of the no-development zone on the property concerned) has been retained/rehabilitated.

◆ A water specialist study as part of the EIA or Environmental Report is required for any developments outside of the Urban Edge that do not have access to a sufficient municipal water supply.

◆ The concept of clustering development is a strong recommendation in environmentally sensitive areas.

12. PROPOSED PROJECTS AND PLANNING ACTIVITIES

The Framework Plan should be reviewed and updated on a regular basis with the time interval between updates not exceeding 5 years but preferably being every 3 years. This would allow the planners and decision makers the opportunity to keep abreast of trends and to reassess the baseline criteria currently used by which they judge potential development proposals for an area. The following projects need to be implemented to fulfil the objectives of the Framework Plan.

12.1 Urban Edge

It is proposed that the first phase of the Urban Edge Study (Gonubie to Summerpride) be undertaken in the 2005/2006 financial year by the City Planning Division.

12.2 East Coast Spatial Development Framework Plan

It is essential that a spatial development framework plan be carried out as soon as possible for the area beyond the Quenera area towards the Kwelera River and inland to the upper catchments of the Quenera, Gonubie and Kwelera Rivers. Such a planning process needs to include appropriate inputs from agricultural, environmental, infrastructure, social and physical planning perspectives.

12.3 Development Levy Policy

The appropriate development levy policy concerning the Quenera Area and beyond requires finalisation in terms of the infrastructure implications of proposed development in the area. In addition, further consideration of the policy is required in terms of the implications of development inside or outside the urban edge, traffic generation, socio-economic and integrated human settlements needs, effluent issues and best practice examples.

The existing Policy is Generic in nature and may not adequately provide for a basis of the apportionment of costs relating to Water infrastructure amongst Developers on a rational, equitable basis. In this regard, the need for back reinforcement, i.e. Augmentation of Infrastructure remote from the Quenera area needs to be clearly defined and costed into the agreements.

It is essential that all new Developments especially, Agricultural Land which rely on the Umzoniana Gravity Supply System Feed to Gonubie Reservoirs must be included forthwith in the calculation of the Development Levy, to ensure the broadest base and scrupulously fair and equitable treatment of all the Developers in this regard.

In conclusion, additional costs relating to Bulk Water Supply Augmentation have been established, obtainable from Element Consulting Engineers: Mr D. Smith.

It is essential that the Development Levy Policy is applied immediately, with amendment as necessary to address certain unique aspects relating to water supply.

12.4 Environmental Projects

- ◆ The recreational carrying capacities of the Quenera and Gonubie rivers need to be determined. In addition, recreational management plans should be commissioned to assist in directing future tourist development on vacant land in close proximity to the rivers and the coastline.
- ◆ Greater detailed research regarding flood lines and set back lines for rivers and water courses should be undertaken to ensure the proper functioning of the rivers and streams in the area. These should be incorporated into a Policy Document for the area and could in fact serve as a base line for future studies.
- ◆ A conservation status should be accorded to all the streams, estuaries and rivers in the area, extending into the upper catchments beyond the primary planning area.
- ◆ Greenways, or other areas identified as unsuitable for development (all no development zones) should be given a zoning which will prevent degradation, settlement or inappropriate development. The areas should rather be regarded as quality space for all, rather than useless land. If, and whenever possible, these Greenways should be located close to schools, office parks etc. so that they can be used as recreational and learning areas as well as areas to enhance the quality of life of the residents of the area.
- ◆ Investigation of an Environmental Levy for developments, especially within the Limited Development Zone and Sub – tropical Thicket environment.

12.5 Public Funded Housing

The needs of the Mzamomhle community require an integrated housing project providing at least 2500 starter homes, social facilities, taxi rank, access to employment and local economic development enterprises in commerce, service industry and urban agriculture.

13. PHASING, PROGRAMME AND BUDGET

These represent the proposals identified by the stakeholders in the various Project Steering Committee meetings and the planning workshops.

13.1 Phasing Of Development

It is extremely difficult to manage the phasing of development in an environment where much of the land is owned by the private sector. The greatest influence on phasing is availability of bulk services and the policy of the authorities towards development applications.

On the basis of a strategic alliance being formed between the role-players of the area and the municipality it is believed possible for future development to be managed according to logical phases. An optimistic five year programme has been prepared and these are expected to be as follows (see plan 10):-

- ◆ **Years 1 and 2**
 - Continued development of mixed uses along the Gonubie main road corridor;
 - Development around the N2 interchange;
 - Development of north east Beacon Bay;
 - Development at Quenera mouth; and
 - Mzamomhle expansion north.

- ◆ **Year 3**
 - Continued westward expansion of Gonubie;
 - Eastward expansion of Beacon Bay into the Quenera valley;
 - Northwards expansion of Mzamomhle continues; and
 - Expansion of Meisie's Halt Node.

- ◆ **Year 4**
 - Mixed use development alongside the Gonubie main road;
 - Residential development westwards away from Mzamomhle towards Beacon Bay; and
 - Infill of houses in the heart of the Quenera area.

- ◆ **Years 5 and Beyond**
 - Infill of residential development in the Gonubie Valley (west of the river).
 - Infill of residential development in the north west portion of the Quenera area; and
 - Commercial nodes at junctions.

Phasing will be dependent upon the availability of funds for infrastructure and the ability of developers to undertake development to meet demand.

13.2 Actions, Programme and Budget

Table 9 below provides a draft programme for the prioritised projects. The development of the Quenera area is expected to be largely dictated by the private landowners working in co-operation with the municipality. The availability of bulk infrastructure and demand for new premises will determine the pace and timing of development. The synchronisation of these factors is difficult to achieve and accordingly a joint venture approach will be crucial in future.

Table 9: Quenera Local Spatial Development Framework: Project Programme

PROJECT	BUDGET	YEAR 1	YEAR 2	YEAR 3
Urban Edge Study	370 000			
East Coast SDF	200 000			
Development Levy Policy	50 000			
Recreational Capacity of Rivers	150 000			
Floodline Study	500 000			
Conservation Status for Streams, Rivers and Estuaries	250 000			
Environmental Levy Policy	100 000			
Public Funded Housing (Mzamomhle)	65 000 000			
Transportation/taxi facilities study	50 000			
Bulk Engineering Infrastructure Programme	595 677 071			
TOTAL:	662 347 071			

**APPENDIX 1:
REFERENCES**

REFERENCES

1. City of East London Draft Framework Plan 1996.
2. Quenera Area Urban Structure Plan 1988 (Amended 1993) Structure Plan Consortium.
3. Quenera Framework Plan and Land Development objectives September 1998: Wanklin and Associates.
4. Buffalo City Zoning Plan.
5. Quenera Master Plan 1970 (1973 updated).
6. Estuaries of the Cape: Part 11, Report No. 42 by Wiseman et al.
7. Buffalo City Integrated Development Plan.
8. Buffalo City Spatial Development Framework Plan 2003.
9. Buffalo City Draft Coastal Zone Management Plan 2005.

**APPENDIX 2:
MINUTES OF MEETING HELD ON 10 MAY 2005**

**APPENDIX 3:
COMMENTS FROM PUBLIC MEETING: 10 MAY 2005**

**APPENDIX 4:
ATTENDANCE REGISTER – MEETING 10 MAY 2005**

**APPENDIX 5:
MINUTES OF MEETING – 15 JUNE 2005**

**APPENDIX 6:
MINUTES OF 2ND PUBLIC MEETING – 22 JUNE 2005**

**APPENDIX 7:
ATTENDANCE REGISTER – 2ND PUBLIC MEETING 22 JUNE 2005**

**APPENDIX 8:
ATTENDANCE REGISTER OF 3rd PUBLIC MEETING – 23 AUGUST
2005**

**APPENDIX 9:
CALCULATIONS OF MAXIMUM DEVELOPMENT CAPACITY**

1. Calculation of Maximum Development Capacity

The different areas of developable land for various land uses were calculated. A percentage was deducted for shops, roads, social facilities, schools and park spaces (for example). The remaining land was multiplied with a density factor of dwelling factor of dwelling units per hectare to obtain an estimate of the potential number of dwelling units. The various calculations differed according to the expected land use. For example in the mixed land use along the Gonubie Main Road, it was estimated that only 25 % of the land would accommodate housing due to the likelihood (and demand for) of commercial development there.

1.1 Low Density Residential

996 hectares x 70 % = 697.2

697.2 hectares x 10 dwelling units per hectare = 6 972 units

1.2 Medium Density Residential

183.8 ha x 70 % = 128.66

128.66 x 50 du's/ha = 6 436 units

1.3 Commercial/Industry/Residential Mixed Uses

286.1 hectares x 25 % = 71.5 ha

71.5 ha x 80 du's/ha = 5 722 units

1.4 Limited Development Zone/Agriculture

475.7 ha x 50 % = 237.85 ha

237.85 x 2 du/ha = 476 units

1.5 Tourist Resorts

14.2 ha x 50 % = 7.1 ha

7.1 ha x 60 du/ha = 426 units

2. Population/Estimate

The number of dwelling units were multiplied by the occupancy rate of persons per dwelling/household. The average household size in Buffalo City is 4.5 persons (Integrated Development Plan 2000) but in certain residential densities, the occupancy rate varies. The following assumptions were made:-

◆ Low Density Residential	- 3 persons per unit
◆ Medium Density Residential	- 5 persons per unit
◆ Commercial/Industry/Residential Mixed uses	- 3 persons per unit
◆ Limited Development Zones/Agriculture	- 3 persons per unit
◆ Tourist Resorts	- 3 persons per unit

APPENDIX 10:
BULK ENGINEERING INFRASTRUCTURE COST ESTIMATE

QUENERA LOCAL SPATIAL DEVELOPMENT PLAN
COST ESTIMATE FOR PROPOSED BULK ENGINEERING INFRASTRUCTURE

BULK ENGINEERING SERVICES	Amount (including VAT)
WATER	
Quenera Bulk Water Supply Mains	R 14,195,854
Quenera Bulk Water Supply : Reservoirs	R 22,981,965
Upgrade of Umzoniana Water Treatment Works by 22 Megalitres per day	R 64,325,000
New 500 mm Ø gravity main from Umzoniana Water Treatment Works to Edge Road	R 29,963,059
Sub Total Bulk Water Supply	R 131,465,878
SEWERAGE	
Quenera Bulk Sewage Network : Pumpstations & bulk sewers	R 36,612,887
Upgrade of Gonubie Sewage Treatment Works by 16 Megalitres per day	R 80,000,000
Sub Total Sewerage System	R 116,612,887
ELECTRICITY	
Bulk Electricity Supply to Quenera : 66kV Network, including the upgrading of the Royston, Greenacres and new Quenera Substations	R 75,047,606
Internal Electricity Reticulation and Consumer Substations for Quenera	R 116,279,829
Street Lighting of Proposed Road Network	R 22,272,144
Subtotal Electricity Network	R 213,599,579
ROADS	
* Link Road from Beacon Bay (via Quenera Drive) to Gonubie (Gullsway Road)	R 25,042,757
Edge Road & Beaconhurst Drive connectors to Link Road (Including intersections and minor upgrades)	R 3,500,000
Gonubie Main Road feeder to Quenera Mouth (Costed on road remaining within existing gravel road's alignment)	R 12,259,170
Gonubie Main Road feeder to Quenera Mouth (Second road)	R 10,692,800
Gonubie Main Road Emergency Short Term Upgrade : Cycle & pedestrian track, guard rails, repairs & road marking	R 5,000,000
Gonubie Main Road Upgrade to 4 Lanes (Including relocation of services and N2 Interchange)	R 31,800,000
Quenera Service Roads Parallel to Gonubie Main Road	R 18,500,000
Quenera Collector Roads	R 27,204,000
Sub Total Road Network	R 133,998,727
TOTAL	R 595,677,071

* Cost estimate taken from THM's Route Location & Preliminary Report for the Beacon Bay to Gonubie Link Road, May 2004.
 Estimate excludes land acquisition costs, expropriation costs or relocation of informal settlements.