



NELSON MANDELA BAY MUNICIPALITY

URBAN EDGE REVIEW PROJECT

incorporating

RURAL LAND USE MANAGEMENT POLICY

and

URBAN DENSIFICATION GUIDELINES

(November 2007)

DRAFT

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Section

A

SECTION A : GENERAL INTRODUCTION

A 1 Background

The importance and need to manage urban growth and development pressure brought about by the unsurpassed demand for suitable land within the Nelson Mandela Bay Metropolitan area was identified as part of the Spatial Restructuring Strategy of the Metropolitan Spatial Development Framework (MSDF) and the Sustainable Community's Methodology Project recently adopted by the Nelson Mandela Bay Municipality (NMBM). The pressure to develop land on the urban peripheries and in particular in the rural underdeveloped area of the NMBM is increasing at a rapid rate. The Metropolitan Municipality is receiving applications to subdivide and rezone agricultural land at an increasing rate. In the absence of development guidelines and a scientifically tested Land Use Management system, arguments for development and subdivision of agricultural land are based on development trade-offs motivated in terms of return on investment, the conservation of natural vegetation and the inability to farm economically on agricultural land surrounding the built up urban area. These adhoc developments spread at random throughout the Metropolitan area fail to take into account a holistic perspective where urban sprawl is curbed and managed.

In short, NMBM area is facing the danger of losing its unique character and natural features to urban sprawl and leap-frogging development.

The creation of the Urban Edge was identified as a mechanism to protect the character, significant environment and resources and to contain urban sprawl, in order to rationalise service delivery managing growth and densification. The adoption of the MSDF and the Sustainable Community's Development Project endorse the need for urban growth management policies, including an Urban Edge that clearly defines an outer limit to urban development.

The Metropolitan Government is further constitutionally bound to develop policies that will enable sustainable development while simultaneously promoting economic and social development. In this regard, the Nelson Mandela Bay Metropolitan Municipality initiated a project to review the Urban Edge defined in the draft NMBM SDF prepared in January 2006.

A 2 The Purpose of the Study

The greatest pressure for development occurs in the less expensive vacant land adjacent to the existing Urban Edge. These applications are difficult and sometimes controversial with arguments both for and against the proposed development being equally convincing. Resultant decision making process associated with the assessment of such development application needs to deal with complexity within the local context. Applications for development are often motivated on the basis of interpretation of policy documents promulgated by National and Local Government. The National policy documents often contain wide ranging phrases and jargon (e.g. Infill development, densification, economic sustainable, etc.) which can be used to substantiate a variety of reasons for development, either suitable or not. Relevant principles that apply at the Metropolitan scale need to be contextually interpreted and applied to the specific local situation.

The purpose of the report is therefore to provide a decision making framework that allows the planning officials to review, evaluate and approve, or reject, various development applications submitted in the rural and urban area of the Nelson Mandela Metropolitan area.

The previous MSDF defined the Urban Edge boundaries and to some extent made proposals for development within the edge. No clear policy for the large tract of land beyond the Urban Edge is provided in the current MSDF. The NMBM is also challenged by land practitioners and developers that current Urban Edge does not address the demand for land needed for development within the short and medium term. It is argued that insufficient policy guidelines or development directives are imposed by the current MSDF. The inability of the Metro Planning Officials to defend the existing Urban Edge and to assess applications received for development beyond and within the Urban Edge defined, also creates a problem to manage development.

The focus of this study will be to assess criteria impacting on the locality and position of the existing Urban Edge, to prepare Rural Land Use Management and Development Guidelines for the large rural undeveloped component of the Metropolitan area and to provide planning practitioners and officials with appropriate guidelines for urban development densities in appropriate locations. The guidelines are therefore focused on translating the macro principles contained in various sets of National, Provincial and Local Legislation and Policy into a micro level context where they can be applied to the assessment of development applications within and beyond the Urban Edge. The Urban Edge Review document uses current Urban Edge boundaries as a starting point, but provide the framework within which decisions regarding local development applications can be made.

In the absence of any policy guiding or regulating development beyond the Urban Edge of the NMBM as well as a lack of planning integrated and development policy based on contemporary views for land management, it is important to note that the planning process adopted formulates policies for the following two (2) components :

- The preparation of a Rural Land Use Management guideline
- The preparation of Urban Densification Strategies.

It is important to note that the Rural Land Use Management Policy and the Urban Densification Policy once completed must not be applied in isolation. It is the intention of this document to identify a clear boundary between the Rural Land Use Management Policy boundary and the Urban Densification Strategy boundary. This boundary will form the reviewed Urban Edge for the Metropolitan Municipality. The existing Urban Edge defined in the draft MSDP serves as the baseline boundary for these policies. Where alteration is necessary, the Urban Edge will be reviewed and redefined according to the outcome of the study.

It is further important to stress that the Rural Land Use Management Policy and the Urban Densification Strategy are 2 important components of the NMBM Land Use Management System currently being formulated in terms of National Legislation.

The preparation of the Rural Land Use Management Policy and Urban Densification Strategy are key components of the legislated strategic plan process undertaken by the NMBM. It is important to understand the legislative relationship between the Urban Edge study, the Rural Land Use Management Policy and the Urban Densification Strategy.

A3 Relationship from the Spatial Development Framework to the Integrated Development Plan

The Spatial Development Framework forms a part of the Municipality's IDP. The Guide Pack for Integrated Planning makes it clear that the Spatial Development Framework is a key element in the integration of development processes applicable to different sectors. It notes that:

“Integrated habitable cities, towns and rural areas are achieved through policy, strategy and action”.

Where policies, strategies or actions identified in an IDP have a spatial dimension, these need to be accounted for in the Spatial Development Framework.

In short, all development that affects the way land is used, or which has an effect on the built environment, must be guided by a coherent set of policies and guidelines. These policies and guidelines are embodied in the Spatial Development Framework.

In turn, the Spatial Development Framework is to include guidelines that will inform the development of an appropriate Land Use Management System, based on the different requirements (i.e. need for land use management of development control) of different areas within a Municipality.

The inter-relationship between the IDP, the Spatial Development Framework and the Land Use Management System is illustrated below in Diagram A.1: -

Diagram A.1: - Relationship between IDP, Spatial Development Framework and Land Use Management System

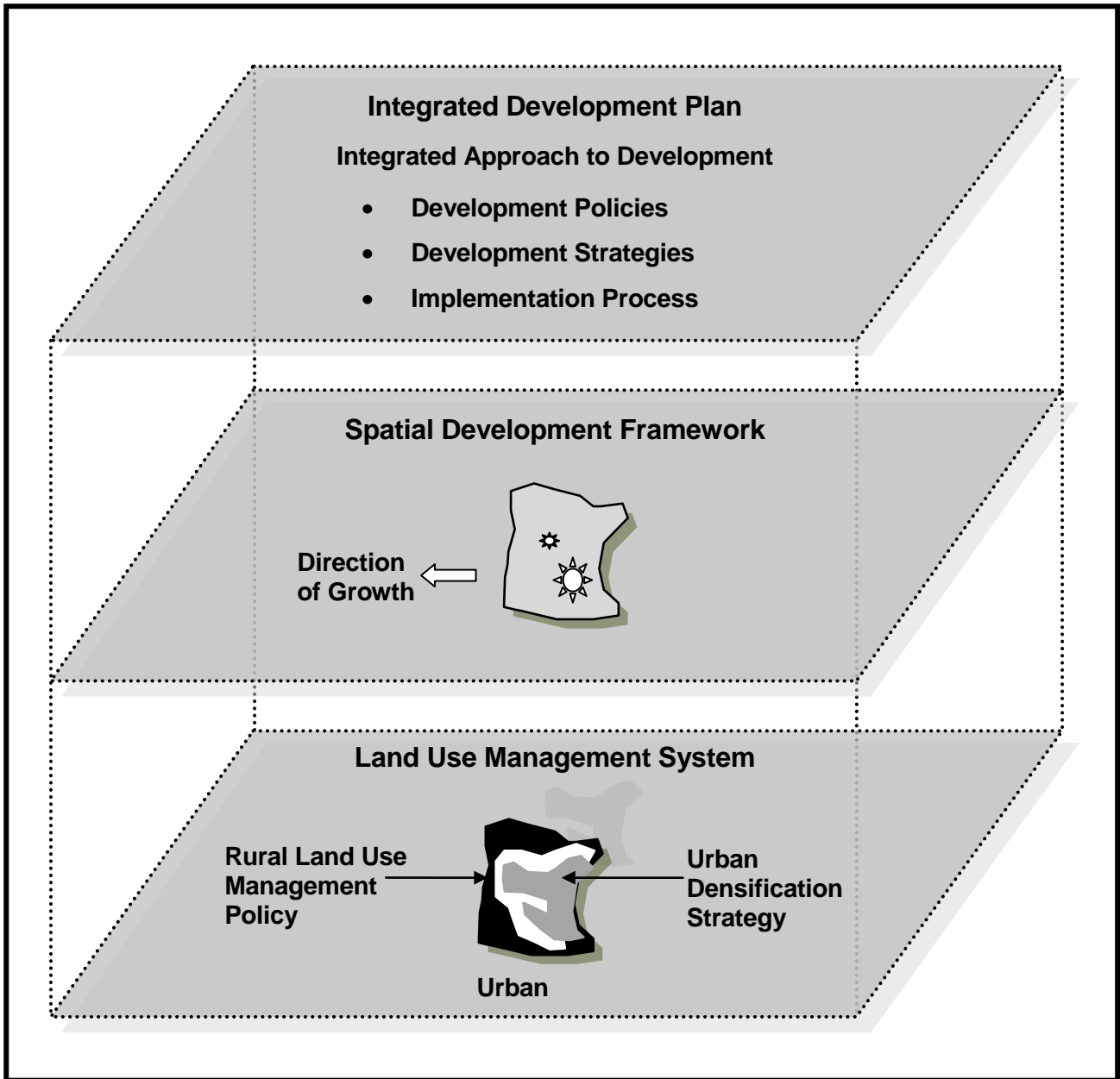


Diagram A.2: - Generic Process of the Spatial relationship between IDP SDF LUMS

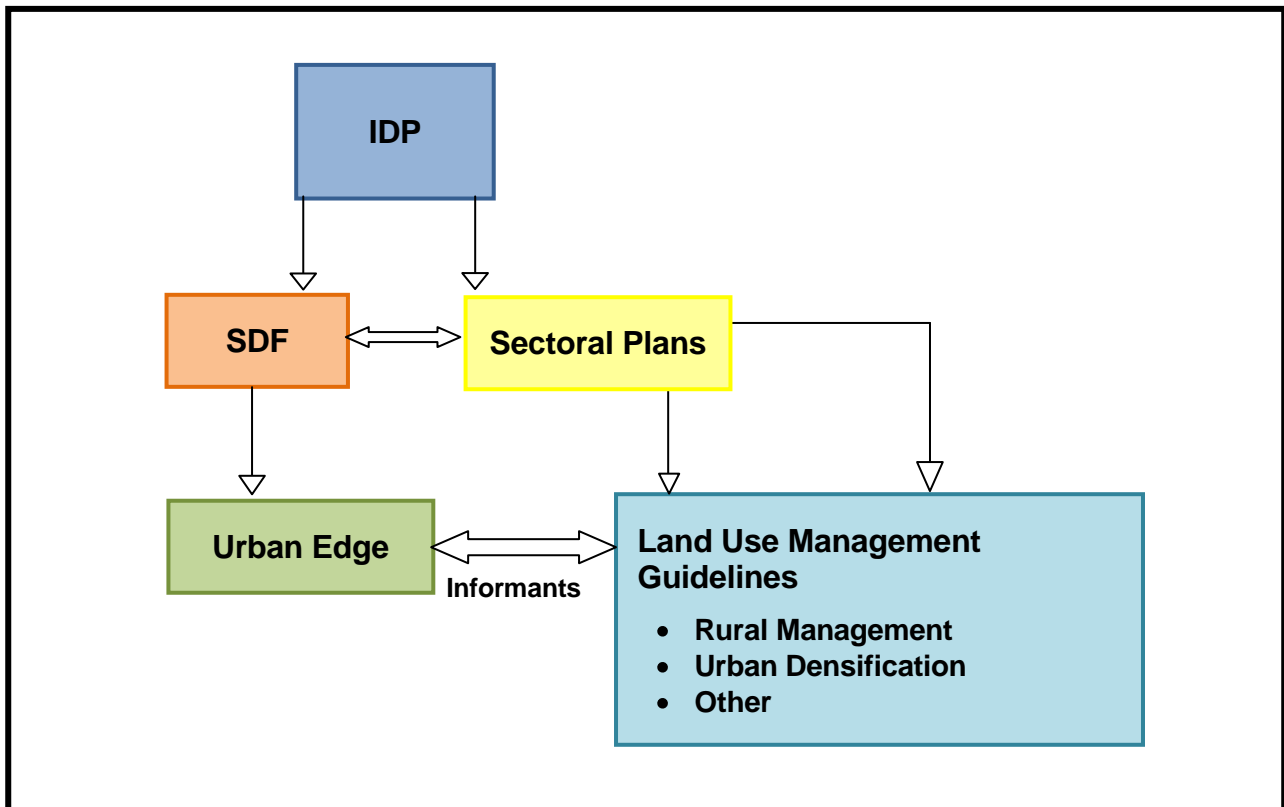
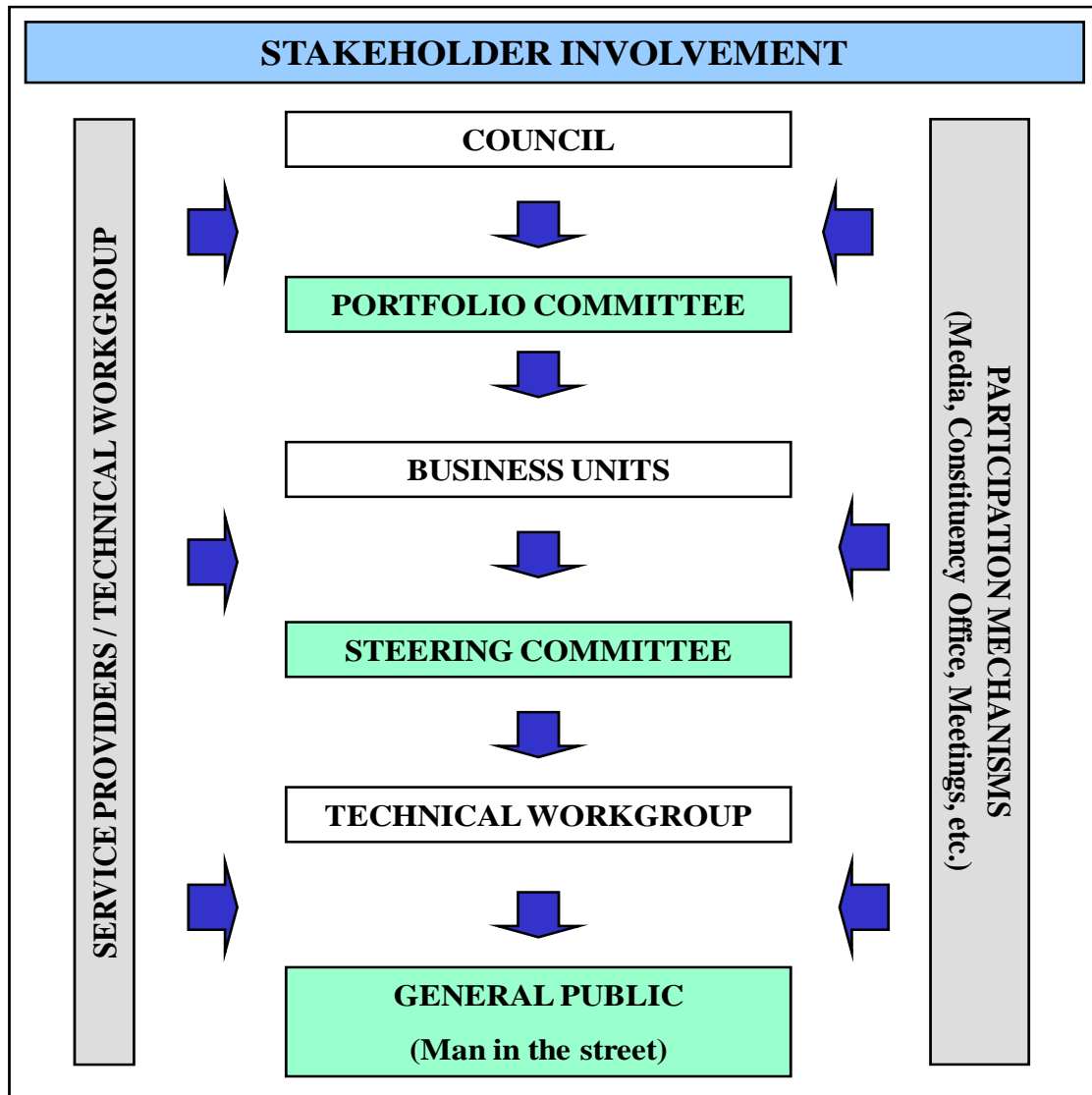


Diagram A.3: - Public Participation Structures

Based on the principles of transparency and developmental Local Government, including the Sustainable Communities Project guidelines, public participation is of critical importance.



Key to the planning process is the involvement and contribution of the elected Steering Committee. The Steering Committee is the main driving force and interaction between the relevant stakeholder community, consultant team and Council.

The Steering Committee comprised of the following stakeholders:

- *Four Councillors*
- *A Project Co-ordinate*
- *Officials from:*
 - Housing and Land Business Unit
 - Infrastructure and Engineering Business Unit
 - Parks and Recreation Business Unit
 - Environmental Services Business Unit

Section

B

SECTION B : THE LEGISLATIVE AND POLICY CONTEXT

B 1 Introduction : A New System of Spatial Planning

Specifically significant, the spatial planning system that had developed in South Africa before 1994 had been shaped by numerous external influences (such as pre-1947 town planning legislation in Britain) and placed considerable emphasis on *controlling the form and spatial location of development by means of legal mechanisms*. This emphasis on control and manipulating the use of land for different purposes to achieve certain desired political and socio-economic outcomes served to feed into the burgeoning Nationalist ideology of separate development throughout the post-World War II period in South Africa.

The result has been a characteristic fragmented socio-economic and spatial environment in the greater part of the country, the development of which was, in many instances, prescribed and policed by a range of equally fragmented and control-oriented planning and related laws, which sought deterministic solutions to achieve ideologically defined goals. This is typified by the nature of spatial development in Nelson Mandela Bay, which has been to the disadvantage of economic development processes in the area, and has led to most of the residents of Nelson Mandela Bay being excluded from the benefits that flow from integrated socio-spatial development.

Since 1994, the post-Apartheid government has sought to respond to the situation of fragmentation, inequity and inflexible planning systems by enacting a series of laws and policies that seeks to entrench a *culture and methodology of planning* which is rights-based, flexible and integrating, principle-led and, generally, *facilitative* of development as a dynamic and complex process of change.

With the passing into law of the Development Facilitation Act (Act No. 67 of 1995), the mature of spatial planning in South Africa experienced a profound philosophical change, in line with the changes following the transition to a democratic state in 1994.

Significant key Legislation impacting on spatial orientation and planning promulgated is as follows:

- *The Municipal Systems Act (Act 32 of 2000);*
- *The Development Facilitation Act (Act 67 of 1995);*
- *The White Paper on Wise Land Use: Spatial Planning and Land Use Management (March 2001);*
- *The Draft Land Use Management Bill (July 2002); and*
- *The White Paper on National Transport Policy (August 1996).*

The above laws and policy documents provide the foundations for establishing the parameters of a Spatial Development Framework. As such, these are the principle informants on matters of policy for the Nelson Mandela Bay Municipality and, in the case of the enacted laws, the Municipality is legally obliged to apply their provisions when engaging in spatial planning and land use management.

B 2 The Municipal Systems Act (Act 32 of 2000)

The Municipal Systems Act, promulgated in 2000, enshrined in law the principal planning tool of local government, namely, the Integrated Development Plan (IDP).

Chapter Five of the Municipal Systems Act describes IDP as a single, inclusive and strategic plan for the development of a municipality that will be the principal strategic planning instrument which guides and informs all planning and development, and all decisions with regard to planning, management and development in the municipality.

The key aspect of the Act is the requirement that every IDP include a '*spatial development framework, which must include provision of basic guidelines for a land use management system for the municipality*'.

The SDF acts as a forward planning document describing the intended nature of the spatial development in a Municipal Area. The Regulations No. R 796 published in August 2001 to support the Act clearly formulate the components and content of the SDF product. A synopsis from the regulations prescribe the following: -

"A spatial development framework reflected in a municipality's integrated development plan must-

1. *give effect to the principles contained in Chapter 1 of the Development Facilitation Act ' 1995 (Act No. 67 of 1995);*
2. *set out objectives that reflect the desired spatial form of the municipality;*
3. *contain strategies and policies regarding the manner in which to achieve the objectives referred to in paragraph (b), which strategies and policies must –*

- 3.1 *indicated desired patterns of land use within the municipality;*
- 3.2 *address the spatial reconstruction of the municipality; and*
- 3.3 *provide strategic guidance in respect of the location and nature of development within the municipality;*
4. *set out basic guidelines for a land use management system in the municipality;*
5. *set out a capital investment framework for the municipality's development programs;*
6. *contain a strategic assessment of the environmental impact of the spatial development framework;*
7. *identify programs and projects for the development of land within the municipality;*
8. *be aligned with the spatial development frameworks reflected in the integrated development plans of neighbouring municipalities; and*
9. *provide a visual representation of the desired spatial form of the municipality, which representation:*
 - 9.1 *must indicate where public and private land development and infrastructure investment should take place;*
 - 9.2 *must indicate desired or undesired utilisation of space in a particular area;*
 - 9.3 *may delineate the urban edge;*
 - 9.4 *must identify areas where strategic intervention is required; and*
 - 9.5 *must indicate area where priority spending is required."*

B 3 The Development Facilitation Act (Act 67 of 1995)

The Development Facilitation Act (Act 67 of 1995), or *DFA* is of great relevance to all spatial planning and development processes. Emphasis is placed on re-orientation of the assumptions underlying the existing complex, often racially fragmented and control-orientated planning system in South Africa prevailing and emanating from the past.

The most important element of the DFA is the introduction of a normative (or principle-based) approach to planning – as opposed to the prevailing control-orientated approach. This is encapsulated in Chapter I of the Act, which provides **General Principles for Land Development and Conflict Resolution**.

These **General Principles** are of particular note, as they effectively *spell out the norms and standards or directions required in terms of national law* of both spatial planning development actions and, in so doing, place the onus on decision-makers responsible for land use and spatial development decisions to respond in a considered and creative manner to local development conditions.

The DFA clearly establishes that spatial planning is pre-eminently a public sector activity and requires planning at Local government level to become positively involved in addressing the spatial and development needs of their jurisdiction areas.

B 3.1 General Principles for Land Development – extracts Section 3(1) of the DFA

Whilst it is possible that the General Principles for Land Development and Conflict Resolution, which are contained in Chapter I of the DFA, are to be superseded by similar, normative principles to be contained in new national legislation on spatial planning and land use management, they remain, for the present, the only legislated principles applicable to spatial planning in South Africa. As such, those that apply particularly to spatial planning are defined below.

The following general principles apply to all land development:

- (a) ***“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.”***

Synopsis: *This principle requires land practitioners and developers to think holistically.*

In the past we focused our attention on the towns and cities and neglected the rural areas. We did not think about the sorts of programmes that would be required to encourage developments (such as commercial, housing and educational facilities) beyond the urban footprint of cities.

We neglected the recognition of informal settlements as accommodating thousands of needy families. Informal settlements are just as important for providing shelter as conventional housing projects.

The draughting of developmental policies should therefore:

- 1. Give equal attention to urban and rural concerns.*
- 2. Address both formal and informal processes for creating settlements with secure tenure for residents.*
- 3. Recognise that development activities are required in new settlements on vacant pieces of ground, as well as in existing settlements.*

- (b) ***“Policy, administrative practice and laws should discourage the illegal occupation of land, with due recognition of informal land development processes.”***

Synopsis: *Illegal occupation results in a fragmented settlement pattern and creates conflict. It is difficult to deliver services such as water, sanitation and roads to a fragmented settlement. Public authorities should discourage the illegal invasion of land.*

Land should be for legal occupation at a rate that meets the demand. If this is not done, pressure for illegal occupation mounts.

It is also important to recognise the difference between illegal settlement and informal settlement of land.

- (c) ***“Policy, administrative practice and laws should promote efficient and integrated land development in that they -***
- (i) ***promote the integration of the social, economic, institutional and physical aspects of land development;***
 - (ii) ***promote integrated land development in rural and urban areas in support of each other;***
 - (iii) ***promote the availability of residential and employment opportunities in close proximity to or integrated with each other;***
 - (iv) ***optimise the use of existing resources including such resources relating to agriculture, land, minerals, bulk infrastructure, roads, transportation and social facilities;***
 - (v) ***promote a diverse combination of land uses, also at the level of individual erven or subdivisions of land;***
 - (vi) ***discourage the phenomenon of “urban sprawl” in urban areas and contribute to the development of more compact towns and cities;***
 - (vii) ***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***
 - (viii) ***encourage environmentally sustainable land development practices and processes.”***

Synopsis: *The objective of this principle is to achieve ‘integrated and efficient land use’.*

- (i) *The first sub-principle calls for a unified approach to planning.*
- (ii) *The second sub-principle emphasises that urban and rural planning cannot be done in isolation from each other. Planning and implementing new urban developments must influence and impact development on the adjacent rural, undeveloped land.*
- (iii) *The third sub-principle recognises the importance of residential and employment locations. It is important for people of lower income who cannot afford high transport costs and the large amount of time taken to travel to work. The planning of industrial and commercial developments must be based on integrating working and residential areas and ensuring the integration of land use with transportation.*
- (iv) *The fourth sub-principle is linked to the previous sub-principle. Resources are limited and therefore we must make the best possible use of investments made in existing developments. This sub-principle recognises that certain land parcels have intrinsic qualities such as minerals or good quality soils and that these should be taken into account.*
Similarly, existing investments on bulk and link services, communal facilities and developments should inform planners identifying land or development projects.
- (v) *The fifth sub-principle promotes mixed land-use developments. This means that we should not necessarily plan new areas that are exclusively residential or exclusively commercial. It is better to have a range of different types of land uses. This creates urban vibrancy, employment viability and sustainability. This principle does not call for mixed land use on every property or every street. If a particular neighbourhood is exclusively residential and the adjacent neighbourhood has retail and other non-residential uses, this also satisfies the principle. The places that are most suitable for mixed developments are places of high accessibility. It is important to seek opportunities for mixed land uses, but in a way where other planning principles, such as sustaining the natural environment or providing for residential amenity, are protected.*
- (vi) *The sixth sub-principle seeks to rectify past planning mistakes. With apartheid and the planning of the past, we have created towns that are characterised by ‘urban sprawl’. In other words they are very spread out. Local authorities must spend large amounts on providing and maintaining excessive amounts of infrastructure. Urban sprawl does not use existing infrastructure efficiently because new developments take place on the edge of the urban areas. It also reduces agricultural and conservation worthy land.*

The way to correct urban sprawl is to plan for new developments to take place within the already developed areas either on vacant land or through the re-development of existing properties. Densification and urban compaction are used where more intense development takes place in existing urban areas.

(vii) *The seventh sub-principle is similar to sub-principles (iv) and (vi) as a holistic approach to planning is necessary to address the crucial and serious impacts created by the Apartheid legacy.*

(viii) *The eighth sub-principle is about sustaining a good relationship between urban areas and the natural environment. Any settlement has an impact on the natural environment. When planning settlements, unique land features, plants and animals should be protected. Settlements should not be situated in areas where there is a high risk of floods, pollution or land subsidence. Also, water catchment areas should be protected from settlement because of the risk of pollution. The impact of a settlement on the natural environment should be as small as possible.*

- (d) **“Policy, administrative practice and laws should promote sustainable land development at the required scale in that they should -**
- (i) ***promote land development which is within the fiscal, institutional and administrative means of the Republic;***
 - (ii) ***promote the establishment of viable communities;***
 - (iii) ***promote sustained protections of the environment;***
 - (iv) ***meet the basic needs of all citizens in an affordable way; and***
 - (v) ***ensure the safe utilisation of land by taking into consideration factors such as geological formations and hazardous undermined areas.”***

Synopsis: *This principle is concerned with sustainable development. From a physical, social and economic point of view, it means that new developments must be viable to last in the long-term.*

Land development policies, laws and administrative practices written by public authorities must address the issue of sustainability. Sustainable means:

- (i) *The first sub-principle is concerned with the capacity of the public authorities. Developments must be planned in a way that recognises the resource and capacity limitations of the public authorities.*
- (ii) *The second sub-principle is about the sustainability of communities. To achieve this, land planning must ensure that communities are located close to work opportunities and social facilities and must have basic services such as water and sanitation.*
- (iii) *The third sub-principle emphasises the natural environment. All development has an impact on environment and eco-systems. It is important that these considerations are taken into account in land planning and development.*

- (iv) *The fourth sub-principle focuses on affordability. The standard of services that are supplied must be appropriate for each community's economic and social viability and affordability.*
- (v) *The fifth sub-principle has to do with the need to investigate physical conditions*

- (e) ***“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.”***

Synopsis: *No one land use is more important than any other, so no land use should be favoured above any others. Decisions about land uses must be based on sound planning where a number of different factors, such as population projections, economic growth strategies, the environment and other factors are taken into account. This principle recognises that not all necessary activities are protected by the mechanism of the land market. It therefore requires local authorities and the sustainability of the land when they draw up plans.*

B 4 The White Paper on Wise Land Use: Spatial Planning and Land Use Management July 2001

The White Paper on Wise Land Use: Spatial Planning and Land Use Management July 2001 expands on the conceptual approach to land use and development embodied in the Development Facilitation Act by **entrenching the normative approach to spatial planning and land use management.**

The normative approach to planning endorsed in the White Paper, is presented in the form of directive *principles* and *norms*.

‘The principles are conceived of as first principles in the sense of general or fundamental values of a democratic and open society, on which the norms are based or from which the norms are derived. The norms emanating from the principles are understood as principles of right action, as authoritative rules or standards asserting or denying that something has to be done or has value.’

Both the principles and norms are focused on and correlated to the field of spatial planning and land use, but need further actualisation in specific, concrete contexts (i.e. *spatial development frameworks*).

The purpose of a normative approach is 'to ensure wise land use'. Wise land use is inspired by humane considerations regarding the responsibility society and the state has to preserve the earth's natural assets for present and future generations in a sustainable and economic way. Wise land use is premised on the consideration that by rational planning of all uses of land in an integrated manner, it is possible to link social and economic development with environmental protection and enhancement, making the most efficient trade-offs, and minimising conflicts.

B 4.1 Spatial Development Framework and the ancillary components (Policies and Land Use Management guidelines)

The White Paper sees the preparation and approval of a *Spatial Development Framework*, as an integral part of a Municipality's IDP, as the most critical spatial planning responsibility within all three spheres of government. Once the Spatial Development Framework is approved it will have a binding effect on the public and the private sector as well as on all spheres of government. It will thus become a central element in the system of *cooperative governance*.

B 5 The Land Use Management Bill July 2001

The Land Use Management Bill is intended to ultimately replace the Physical Planning Acts and other land use and spatial planning Acts and Ordinances. The goal of the Bill is to provide a legislative and policy framework that enables government, especially local government, to formulate policies, plans and strategies for land-use and land development that address, confront and resolve the spatial, economic, social and environmental problems of the country.

It is anticipated that the proposed Land Use Management Bill and the Municipal Systems Act together form a comprehensive framework for local authorities embarking on Integrated Development Planning. The Land Use Management Bill highlights the provisions of Section 26(e) of the Municipal Systems Act by confirming that the SDF is to form the centrepiece of forward planning in the new spatial planning system in South Africa.

B 6 Other Legislation

Several other pieces of legislation provide guidelines and input on spatial development and the need for land use management and appropriate management of resources. Amongst the most noteworthy are: -

- The **Conservation of Agricultural Resources Act** (No. 43 of 1983), which empowers the Minister of Agriculture to prescribe control measures relating to (amongst others) the utilisation and protection of land that is cultivated; the maximum number and the kind of animals that may be kept on veld; the utilisation and protection of vleis, marshes, water courses and water sources, etc.
- The **Environment Conservation Act** (No. 73 of 1989), which provides for the listing of activities that require certain environmental impact assessment procedures to be complied with before implementation. This Act is of particular note for the activities of settlement planning and land use management, as it requires environmental approvals to be granted before land use changes that are listed may be approved by the land use regulating body.
- The **National Environment Management Act** (NEMA – No. 107 of 1998), which establishes in law certain principles that provide a framework for environmental management in South Africa. In addition, NEMA makes provision for the formulation of Environmental Implementation Plans by Provinces. These Implementation Plans are the vehicle for implementing the NEMA principles, and municipalities are required to adhere to them.
- The **National Water Act** (No. 36 of 1998), which provides that no person or authority shall establish a township unless the Layout Plan or Site Development Plan indicates in a clear manner (that is acceptable to the approving authority) the maximum level likely to be reached by floodwaters on an average once in 100 years (i.e. the 1 in 100-year flood line). However, in practice, development is sometimes permitted up to the 1 in 50-year flood line, as this was previously the norm. In addition, the Act provides for a range of protective and preventative measures against the pollution of wetlands, watercourses and estuaries, coastlines / shorelines, etc. Finally, of importance for spatial planning is the fact that the Act makes provision for river flow management and allows the Minister of Water Affairs to regulate land-based activities that impact on stream flow.
- The **National Forests Act** (No. 84 of 1998), which enacts special measures to protect coastal and other natural forests from disturbance, damage or destruction.
- The **National Heritage Resources Act** (No. 25 of 1999), which provides for the creation of the South African Heritage Resources Agency (SAHRA). SAHRA and provincial heritage resources authorities are obliged to identify those places that have special national and / or provincial significance in terms of heritage assessment criteria. Once declared, a heritage resource site is protected in law from certain actions, including alteration, subdivision and / or a change in the planning status unless the relevant heritage resources authority issues a permit for such action.

B 7 Local Policy Informants: Nelson Mandela Bay Municipality Integrate Development Plan (NMBM IDP)

The Nelson Mandela Bay Municipality's Integrated Development Plan, prepared in compliance with the Metro's developmental role and requirements outlined in the Municipal Systems Act, identifies the 2020 Vision as the basis for all future development in the Metro.

The Vision formulated for the Metro is:

“The Nelson Mandela metropolitan area practices social justice in a culture of public participation guided by efficient, accountable, non-racial, non-sexist and sustainable municipality that focuses on sustainable environmental, social and economic development, in proving the quality of life of its communities in a secure, safe and tourist friendly environment.”

The success of the NMBM IDP is dependent on the integration and co-ordination of the following municipal developmental priorities:

- Institution Building
- Service Delivery
- Housing and Land Delivery
- Investment and Economic Growth
- Investment in Tourism and Tourism Infrastructure Development
- Public Safety
- Waste and Environmental Management

The IDP outlines detail medium term expenditure frameworks for implementation of the development priorities with measurable targets, budgets, objectives and strategies.

The Municipal Systems Act (see paragraph B2) impose the NMBM's IDP to prepare and implement Metropolitan for its area of jurisdiction. The Spatial Development Framework is one of the Integrated Development Plan's sectoral strategies and is prepared towards fulfilment of the Metro's Vision and developmental role.

B 8 Local Policy Informants: Nelson Mandela Bay Municipality Spatial Development Framework (NMBM SDF)

The Spatial Development Framework for the Nelson Mandela Bay Municipality has as its objectives the following:

- An analysis of spatial opportunities, constraints, patterns and trends within the metropolitan area.
- An identification of the need for spatial restructuring and land reform.
- Provision of spatial solutions to developmental issues.
- An identification of national spatial development principles and the spatial application in the metropolitan area.
- An understanding and provision for the spatial implications of social, economic and environmental sustainability in the Spatial Development Framework.
- To produce a document that will give guidance to decision-making with regard to developable and non-developable areas and the sequencing of development
- To create a framework for public and private investment decision to facilitate investor confidence.

The Spatial Development Framework is a broad city wide framework for future development, land use management and spatial restructuring. The purpose of the SDF is to provide overarching guidelines for more localized Spatial Development Frameworks, and Land Use Management guidelines.

The following guidelines for spatial planning and planning processes flow directly from the principles emanate from the legislation policies and influences as per the city wide SDF. These guidelines should be seen as tools available to remedy the problems identified with respect to land use management in the Metro.

- **A Democratic And Transparent Approach.**
- **Human Rights And Democracy**
- **Integration**
- **Densification**
- **Planning For Sustainability**
- **Accessibility-Transport And Activity Corridors**
- **Enforcement**
- **Urb-concept**
- **Urban Fence or Urban Edge**
- **Conservation Of The Natural Environment**
- **Conservation Of The Built Environment**
- **Reinforcing the significance of the Downtown Centre**

B 9 Local Policy Informants: Sustainable Community Planning Project and a Guide

The Sustainable Communities Guide (SCG), formulated in June 2007 by the Nelson Mandela Bay Municipality, seeks to achieve a more integrated and sustainable City with a better Urban Environment and quality of life for its inhabitants.

Good governance is essential for sustainable development. At local government level, sound environmental, social and economic policies, responsiveness to the needs of the people, the rule of law, anti-corruption measures, gender equality and an enabling environment for investment are the basis for sustainable development.

The NMBM as an City, has certain characteristics, that need to be addressed in order to rectify the segregated society created by past planning practices. Similar characteristics can be said to exist in most large South Africa cities. These characteristics include the following:

- The existence of severe imbalances in the provision of services and infrastructure in various parts of the city
- Segregated planning areas without employment opportunities, caused by Apartheid planning
- A general lack of socio-economic and cultural integration
- A need to restructure the city
- A predominantly poor population, with unemployment at 40%, and 38% living below the poverty line
- A housing backlog in excess of 80 000 units
- HIV/Aids incidence of 25%, with an expectation of 52 000 Aids orphans by 2010

Apart from the above, the city is characterized by low-density, wealthy, well-serviced area in the south and west; older higher density residential areas, which are overcrowded and poorly serviced in the north and central parts; and, on the outskirts of the city, newer residential areas for the poor.

The Sustainable Communities Project identifies a planning methodology for application in new areas, and for analyzing and re-planning existing areas to ensure that all residential areas afford the inhabitants a good minimum standard of living.

It envisages urban areas of the city divided into a number of planning units or entities, to be known as Sustainable Community Units (SCU's). These are defined by the distance within which an average person can comfortably walk in half an hour, i.e. a 2km radius. The project aims to provide the requirements for a minimum standard of planning and living within those areas, and with amenities facilities and job opportunities within walking distance of all residents.

All SCU's in the city are to be linked by a public transport network, which will ensure that all areas of the city are accessible to all communities by means of public transport.

B 9.1 The basis for sustainable community planning is found in the development principles that have been adopted at national, provincial and at local government level, and which are supported by legislation and government policies. Spatial Planning in Sustainable Community Units is strongly guided by the following Principals:

- i. Poverty alleviation and the satisfaction of basic needs
- ii. Focus on special needs groups – HIV/AIDS, children and the aged
- iii. Gender equality
- iv. The environment – physical, social and economic
- v. Participation and demographic processes
- vi. Local economic development
- vii. Accessibility – public transport and pedestrian focus
- viii. Mixed use development
- ix. Corridor development
- x. Safety and security
- xi. Variation and flexibility
- xii. Densification
- xiii. Reducing urban sprawl

B 9.2 The development principals should be reflected in spatial plans and urban development in various ways. The spatial structure of a Sustainable Community Unit must reflect characteristics related to a combination of Structural Elements identified as follows:

- i. **Housing** : *This element focuses on the provision of a range of housing options, and the creation of socio-economically mixed residential neighborhoods, with differing housing types and tenure.*

Mixed housing types will range from detached units, semi-detached units, single and double-storey units and walk ups. Higher densities will be promoted along the main transport routes through the SCU.

This element has importance for socio-economic integration and allowance for a longer term evolution of community life including housing for special needs groups.

Social Housing opportunities must be provided for an special needs groups, such as the elderly, disabled and HIV/Aids affected, need to be provided for within the SCU's.

- ii. **Work** : *The work element cover the need to provide significant employment, within and close to housing areas. It covers the requirements of economic activities, from a home base as well as higher order employment in local centers, within the sustainable community units. Home base employment can include food gardening, and home industries.*

Local centers within the SCU's will have opportunities for a higher and more formal order of employment such as enterprise zones and employment in the community and commercial centers. Some members of the community will work in neighboring areas or the major employment centers of the city.

For this reason, the public transport link between sustainable community units and elsewhere in the city will be important to provide accessibility in the entire municipal area, for those who need it.

- iii. **Services** : *In considering this element the focus will be on engineering infrastructure as well as other soci-economic infrastructure services. The usual technical engineering services will be provided, such as water, sewerage and electricity. This element also covers the use of alternative service delivery mechanisms, which are environmentally friendly and more sustainable.*

Socio-economic services, which need to be examined to enhance the quality of life, such as crèches, schools, clinics, public open spaces, commercial, recreational and cultural facilities will need to be provided at acceptable levels for all needs within the SCU.

- iv. **Transport** : *The transportation system within the SCU includes different modes of transport such as walking, cycling, taxi, bus, train and private vehicles, which need to be viewed holistically. The different modes will be complimentarily linked in the overall transportation structure of the city. This is contained in the NMMM Integrated Transport Plan. All sustainable community units need to be linked by an efficient public transport network.*

It is a reality of development in the city that the majority of the population will not have access to private transport. The premise of the SCU concept is that the need for each citizen to travel needs to be reduced, and this is done by providing for needs within walking distances of homes.

The focus on pedestrian movement emphasizes the need for safe and defined pedestrian routes within areas, as well as planning for the car.

- v. **Character and Identity** : *This element involves both spatial and non-spatial aspects. From a non-spatial perspective it is emphasized in the project that communities need to be involved in the planning for their areas, and to understand their areas so that they have sense of ownership, and can relate more easily to their living environment.*

From a spatial perspective, landmarks and legibility are concentrated upon, to engender a sense of place and identity within the area amongst the resident community. The pedestrian, transport and open space structure of the area will go a long way towards enhancing legibility and character of the areas, as well as providing for essential environment needs.

- vi. **Community** : *The community element covers the participation aspects of the project as well as providing for community and cultural activities in a spatial sense. It involves a participation strategy that establishes forums and processes, in order to include the community interest, as far as possible, in defining the criteria for consideration of what makes a community sustainable and integrated and in the process of planning of an individual SCU.*

Community needs are satisfied spatially through the provision of well located meeting places and community halls and facilities.

- *Key to the Sustainable Community Planning Project is the sustainable community planning guide and checklist. In addition to these tools, sustainable community planning is strongly based on community and stakeholder participation on various levels throughout the planning process.*

B 10 Local Policy Informants: Zoning and Town Planning Schemes

The main purpose of the zoning scheme regulations is to manage existing land use and development rights and provide clear and specific requirements for changing this land use rights, i.e. rezoning, consent uses and departures. Scheme regulations further outline legal procedure and requirements and as a part of Council's regulatory function in managing land use.

Zoning Schemes and some land use management components within the Metro are mainly geographically based and inherited from the pre-1994 era.

Twelve zoning schemes are currently implemented and utilized by the Metro in different areas and geographical locations. Each of these schemes are characterized by significantly different sets of land use categories, zones, development parameters, definitions, zoning schemes formats and relevance with respect to the areas that they serve.

The twelve schemes are:

- i. Area A Zoning Scheme
- ii. Despatch Zoning Scheme
- iii. Ibhayi Town Planning Scheme
- iv. Khayamnandi Town Planning Scheme
- v. Kwadwesi Town Planning Scheme
- vi. Kwamagxaki Town Planning Scheme
- vii. Kwanobuhle Town Planning Scheme
- viii. Lovemore Park Zoning Scheme
- ix. Port Elizabeth Zoning Scheme
- x. Motherwell Town Planning Scheme
- xi. Land Use Planning Ordinance: Section 8 Zoning Scheme
- xii. Uitenhage Zoning Scheme

Section

C

SECTION C : THE URBAN EDGE IN CONTEXT

C 1 Introduction

Besides being a legislative obligation to demarcate an Urban Edge on the Metropolitan Spatial Development Framework of the Nelson Mandela Bay Municipality, it is also the intention of this Municipality to consolidate the urban areas and achieve a more compact City where scarce resources are maximised and managed. In order to establish and implement a consistent approach to deal with urban growth, Infill development and sustainable rural management, a well-defined Urban Edge supported by urban and rural management guidelines is necessary.

Sustainable development is dependent on the local conditions where the development takes place as the effected environmental characteristics would differ in each case. The different urban and rural areas in and around the Metropolitan area will need to be assessed differently for the implications of development and management. Understanding the different environmental elements affected by urban growth therefore becomes crucial to the study.

C 2 The Definition of the Urban Edge

For the purposes of this study, the Urban Edge marks the transition between rural and urban land use that is between development areas where full Municipal services are provided to a mix of land uses other than agriculture, conservation, nature areas and low density residential ominously associate with the ecology of the area. Urban Edges are intended to include an adequate supply of land that can be efficiently provided with urban services in the short and medium term to accommodate the expected growth of the urban area for a defined period. By providing adequate land for urban uses within the Urban Edge, the rural area can be protected from urban sprawl.

The definition of the Urban Edge as contained in the Provincial Urban Edge Guideline of the Western Cape (Department of Environmental Affairs and Development Planning of the Western Cape Provincial Government) is as follows:

“It is a demarcated line to manage, direct and control the outer limits of development. the intension of the Urban Edge is to establish limits beyond which urban development should not be permitted.”

C 3 The purpose and functions of the Urban Edge

It is important that purpose of an Urban Edge is clearly understood by all land use management and development practitioners. Its purpose is to manage, direct and phase urban growth proactively and to manage and protect the land resources outside the urban area. The Urban Edge must assist all role player in addressing holistic development encompassing the social economic and environmental sustainability in achieving the developmental goal. The Urban Edge therefore has a dual purpose, namely :

It is a growth management tool use to limit sprawl and output growth of the urban area in favour of achieving densification and Infill development to ensure more efficient utilisation of resources and land within the urban footprint;

It must act as a management and conservation tool, used to exclude certain elements of the environment from the urban area, in order to protect or preserve them and to manage land use which minimises the impact on the preserved environment in the short and medium term in order to promote sustainable development compatible with this environment.

An Urban Edge boundary must not be defined as a single, simple boundary depicting urban growth, but rather a purpose drawn boundary line influenced by a variety or combination of influencing factors. The line or boundary to be determined to address specific objectives identified for various areas of the Metropolitan area. The objectives identified refer to the conservation of environmentally sensitive areas, (e.g. Metropolitan coastline, Groendal Nature area, riverine areas and coastal basins) promoting growth in areas suitable for development, promoting the integration in the urban area, containing urban sprawl, managing the expansion in the infrastructure reach areas, surmising development along the major transport route and service reach areas and harmoniously promoting development within the edge and managing limited development beyond the edge boundary.

C 4 Criteria for determining the Urban Edge boundary

The determination of the Urban Edge is seen as a mechanism to manage growth and development pressures within the Nelson Mandela Bay Municipal Area. The mechanisms are formulated to protect resources and sensitive environments, contain urban sprawl to rationalise service delivery by managing and promoting growth through infill and densification.

The intention of the Urban Edge should be the demarcated and creation of a clearly defined edge which recognises the informants and their contributions to the establishment of a total Metropolitan wide “green” system where the enhancement and maintenance of the naturally environment (unspoiled condition) is achieved.

The natural informants provide the foundation for identifying, acknowledging and preserving the unique natural qualities of the NMBM area. The natural and manmade elements in the metropolitan environment that provide the most defensible growth boundaries needs to be defined and analysed in detail.

The Department of Environmental Affairs and Development Planning of the Western Cape Provincial Government identifies the certain factors, issues and criteria as informants when considering and reviewing Urban Edges for Urban Areas. Due to the different diverse between the Western Cape and the Nelson Mandela Metropolitan Areas only certain criteria listed by the Policy document are selected as being relevant to the Metro Area. These elements selected are the following:

C 4.1 Prominent landform and character areas;

A natural area is defined as an area that is characterised by undisturbed natural conditions. In general natural areas can be expected to be of high conservation value because of their biophysical characteristics and due to their scenic/aesthetic worth.

The gradient and slope of a prominent landform must be considered in addition to the feature value thereof. Steep slopes are often valuable opportunities for high value development. The cost of development and maintenance of the services on steep slopes however detract from the attraction thereof from an authority perspective.

C 4.2 Valuable soils;

Roughly 3% of the soil in South Africa or 3.6 million hectares can be classified as high-potential agricultural land.

The jealous protection of high-potential and unique agricultural land against any change of land use, is of utmost importance for sustainable agricultural production.

Soil quality, which gives rise to the “valuable soil” criterion, has often mistakenly been understood to refer to high, medium or low quality soils, depending on the value of products cultivated thereon. Soil quality and therefore the value of the soil however refer to the ability of the soil to serve its intended use.

C 4.3 Hydrology (surface and ground water features);

The riparian zones of rivers are of the utmost importance in river conservation. Riparian zones from the part of the catchment that directly affects the river ecosystem and has an effect on the quantity and quality of stream flow.

The vegetation in the riparian zone supplies food to the aquatic fauna, controls the drainage of water, nutrients and other minerals to the stream, provides shade to decrease the harmful effects of warm water on the biota and stabilises the stream banks, thereby keeping the water silt-free. Many uses such as agriculture, forestry, urban and tourism development contribute towards disturbance of water bodies and more specifically rivers and riparian zones. Modifying natural watercourses by the removal or destruction of riparian vegetation can rapidly bring about the collapse of the stream system and reduce it to an unattractive drainage system that merely serves to dispose of polluted water and top-soil into estuaries and the ocean (Department of Environmental Affairs and Development Planning: Western Cape Government).

Wetlands are as important as river systems. "A wetland is defined as land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water and which under normal circumstances support or would support vegetation typically adapted to life in saturated soil"

Wetlands play a significant role in flood regulation and groundwater recharge. Wetlands also play an essential role in maintaining wildlife populations, providing key habitat for a diverse fauna and flora.

C 4.4 Ecological resources (aquatic and terrestrial);

Ecological resources such as water, land, vegetation, wildlife and minerals are the basis of economic activity and often the grounds for the establishment of urban areas.

Biological diversity or biodiversity as it is mostly referred to, is the collection of all living organisms in the environment. As all organisms have generic differences, it is important to preserve as wide a generic pool as possible, to ensure the continued presence of life for as long as possible. In order to achieve the highest diversity, the largest possible collection of living organisms needs protection and preservation in the environment, as an ecosystem.

It is essential to consider the proximity of development to the coast and / or hydrological resources, as mentioned above. Sensitive and rare collections of living organisms should not be isolated by development. They should rather form part of a wider biodiversity network where natural migration is not inhibited, which suggests exclusion of such ecosystems from the urban area.

C 4.5 Protected areas;

Protected areas proclaimed in order to conserve cultural or ecological resources or biological diversity. They are proclaimed in terms of specific legislation that would determine whether or not a specific area could be included into an urban area or not and in what context.

C 4.6 Services Infrastructure (barriers effect);

Services infrastructure has the potential of creating barriers to development. Servitudes, combined with roads, other servitudes or ecological corridors present visible and often easily definable boundaries and therefore urban edges.

Railway lines, inaccessible and higher order roads (freeways and elevated roads), create barriers to development and are often undesirable within urban areas. Elements of transport infrastructure, when included into the urban areas, hasten urban expansion and promote growth.

C 4.7 Services Infrastructure (capacity and reach);

Development that occurs adjacent to the urban edge should be planned and designed in such way that future development could take place on the outside thereof, unless there are insurmountable obstacles that would prevent development, regardless of changes in technology and policy. The internal road network, link and connector services and the service distribution network, should on the one hand ensure that sprawl and incremental growth is not encouraged, but on the other, it should provide sufficient scope for feasible extension of the development.

C 4.8 Vacant / under-utilised land in urban area;

Consideration of the extent of vacant and under-utilised land in urban area plays a role in the determination of the amount of land to be included in the urban edge, i.e. its proximity to the existing development.

There is a benefit to the availability of vacant and under-utilised land, as it contributes to the reduction in the cost of land and accommodation in urban areas. Accommodation therefore remains affordable, whereas numerous resources indicate the lack thereof as a significant factor causing high land values and accommodation costs. Infill policies, such as the establishment of urban edges in proximity of the existing urban fringe, attempt to encourage the development of vacant land within urban areas.

Infill development is supposed to be more efficient than edge development, as it conserves rural land and land uses, promotes the more efficient use of existing facilities and infrastructure and reduces services infrastructure maintenance cost.

C 4.9 Higher order roads, access routes and transport infrastructure;

Transport infrastructure is a major contributing factor in urban growth, especially in low density, high income neighbourhoods. Inclusion of the infrastructure theoretically promotes growth, whereas exclusion leads to a duplication of the infrastructure, i.e. additional cost, as new development and growth is reliant on transport linkages.

C 4.10 Cadastral boundaries of adjoining land units;

It could be drawn on an existing cadastral boundary, such as nature reserve boundary, whereas in others a feature in the landscape could be used, e.g. a river, or it could also be a definable line between two points.

C 4.11 Growth requirements over 10 – 20 year periods;

One method used in determining urban edges is the calculation of the growth rate of the urban area in relation to the availability of developable land. The growth rate determination includes the calculation of land requirements for supporting infrastructure and facilities, at predetermined development densities.

C 4.12 Land use applications for new development;

If the market dictates, then the urban edge would be a flexible line with no real purpose. If forward planning is the determining factor, then an urban edge has real value in achieving the goals set out above. The SDF and the defined demand for housing is a more reliable informant than the market forces.

C 4.13 Visual impact;

The value of the environment is often under-estimated from a visual perspective. The diversity of the landscapes makes it essential to consider all developments and more particularly the expansion of urban areas, an issue that requires special consideration. The intention is to manage urban development in such a way that no development would detract from the visual quality of the environment and that all development conform to a characteristic style and urban form that suits the character of the area.

C 4.14 Cultural / heritage resource areas;

Cultural value means areas, sites or objects which have historical significance. This includes modifications to the natural environment, which are of historical significance as well as natural environments that reflect cultural or historical heritage. This includes areas or sites:

- that are designed as national heritage sites;
- that are designed as national monuments;
- that are documented as being of cultural significance by the relevant authority (e.g. South African Heritage Resources Agency);
- that have a long-standing tradition of being of cultural importance to a community or that are designated as being sacred sites by spiritual leaders in the community.

C 4.15 Ownership of land and existing land use rights;

Many land owners acquired land at the urban edge solely for development purposes. Large tracts of land around urban areas are owned by local authorities and in some instances the state.

There are also numerous examples of historic land use authorisations that have remained undeveloped or partially developed, outside of the urban fringe.

The ownership of land will be one of the lesser criteria in determining the edge. Undeveloped land with historic rights should be treated likewise.

C 4.16 Informal settlements;

Informal settlements and subsidy housing schemes have traditionally occurred outside of current urban areas as a result of the old segregation policies of the country.

This phenomenon has now become an entrenched practice, as the land values, i.e. agricultural land values, outside the urban edge are relatively low and large areas can be acquired to enable “economies of scale” in subsidy housing development.

Informal settlements also bring about a social aspect to the determination and management of urban edges, as informal settlements are generally perceived as having significant negative impacts on economic land uses. Thus, the perception or the affects need changing, through pro-active planning measures, such as the establishment of suitable edge use areas, the determination of restrictive edges that promote the integrated growth of urban areas or allowing edges that would contribute to development in vicinity of the informal settlements.

C 5 Additional Edge Determination And Management Issues

A high priority edge is one that must be retained at all possible cost, whereas a low priority edge would be one that could be amended in response to a suitable application or in the course of a spatial development framework planning process.

As a growth management tool, used amongst others to limit sprawl and promote densification and infill development, land for alternative development inside of the urban areas needs to be identified. Thus, **if there is suitable land for development inside of the edge, then the edge should be retained until the available land has been utilised.** This requires forward planning and probably rezoning of land as part of the process.

The indication of land creates ideal opportunities for a reversal of the segregated development that occurred previously.

Section

D

SECTION D : CURRENT REALITY OF THE NMBM AREA

D 1 Topography features and land form (See Map 1 & 2)

The Nelson Mandela bay Municipal Area has a number of dominant topographical features. These features range from the prominent Swartkops River valley which runs from Uitenhage to Bluewater Bay, to the flat marine terrace to the east and north-east of Bluewater Bay, including Motherwell. Port Elizabeth is characterised by a prominent north-west to southeast orientated scarp which is the boundary between the higher lying harder quartzitic sandstones and the lower-lying softer cretaceous mudstones. The Walmer to Greenbushes area is characterised by topography becoming more undulating to the west and north-west. The scale of the study implies that slopes were default to depict graphically. Areas where slopes are steeper than 10 degrees should, however, be avoided for low income housing. Although flat grades are not ideal for housing, vast areas earmarked for housing are characterised by flat grades. In addition, many of these areas are low-lying. Adequate drainage measures thus become essential. Slopes steeper than 20 degrees are not to be developed at all as these localities lead to visual population and skyline intrusion.

D 2 Geotechnical Conditions (See Map 3)

According to the 1:50 000 and 1:250 000 Geological Maps published by the Geological Survey of South Africa, the area is underlain by a number of Geological Formations. The underlying geology listed below usually has a direct influence on the overlying soil profile and the associated engineering geological characteristics.

An engineering geological evaluation undertaken by Gavin Fisher, (undated) is based on the result of previous site specific investigations carried out in the region, the walk-over assessment, and the data base at our disposal. The following paragraphs highlight a few of the more prominent engineering geological constraints in the area.

- **Expansive Soil**

Approximately 28 % of the metro area is underlain by expensive clay. Previous investigations in the region have documented medium to very high heave classifications, and in many instances, structures not designed to withstand the heave, show signs of moderate to severe structural damage. Areas underlain by both the Sundays River and Kirkwood Formations are most vulnerable to heave related problems, but the alluvial deposits are also often expansive. Identifying the presence of expansive clay and designing foundations to counter it, should, therefore, be a priority for planners and prospective developers, prior to the submission of any development proposals.

- **Rock Slaking and Dispersive Soil**

Residual and transported soil horizons, especially those originating from mudstone and the Nanaga Formation, are potentially dispersive. Further adding to the problem is the fact that the mudstone slakes when freshly exposed to the atmosphere. As a result, soil erosion occurs in areas where topsoil and vegetation are disturbed. This impacts on areas for large scale development and stock farming.

- **Potentially Collapsible Soil**

Sandy alluvium, aeolium, and certain colluvial horizons originating from sandstone, could be collapsible in this region. This phenomenon has been identified in parts of the study area during previous investigations, but is generally not considered a significant constraint.

- **Excavability**

Although excavation within the study area usually proceeds without major problems, as the sediments and weathered rocks are usually fairly soft to intermediate, harder shallower rock does occur in certain areas, especially those underlain by quartzitic sandstone. Boulderly ground may also hamper excavation in certain areas.

Trench side walls may be unstable in the lower lying areas where perched water tables could occur, and any excavation deeper than 1,5 meters should be shored to protect workers.

- **Differential Settlement**

Differential settlement may be a factor where structures are founded partially on materials of varying consistency, or founded within loose fill. Differential movement may also occur where founding takes place over expansive/ non-expansive contacts.

- **Bearing Capacity**

Safe bearing capacities for single storey residential buildings should generally be satisfactory in the study area, with saturated sandy and clayey horizons the only real exception. Certain saturated clayey horizons may also be compressible. The safe bearing capacity at each site, should, nevertheless, be determined prior to construction, especially if heavy or multi-storey structures are envisaged.

- **Sanitation**

Clayey conditions and vulnerability of ground water resources in the study area, largely precludes the use of soil seepage type sanitation systems (pit latrines, septic tanks, and soak-aways). Seepage rates will generally be too slow in clayey areas, and development densities are usually too high. Further pollution of the valuable ground water resources in the area, could also occur. A waterborne sanitation system would be the most feasible means of sewage disposal anywhere in the study area, and future development should link into the existing sewer infrastructure.

- **Land Units**

The Metro area has been delineated into nine Land Units, each characterised by a similar type of soil profile, and by similar engineering geological constraints. Land Unit boundaries should be regarded as approximate as they were determined with limited field input. The boundaries may also grade into each other in places.

D 3 Valuable soils and High intensity / potential agricultural resources (See Map 4)

In Agricultural development potential of an area is measured by the Land Capacity Index for a specific area. Land capability is the total suitability for use, in an ecologically sustainable way, for crops, for grazing, for woodland and for wildlife. A land capability class is an interpretive grouping of land units with similar potentials and continuing limitations or hazards. It is a more general term than land suitability and is more conservation oriented. It involves consideration of (i) the risk of land damage from erosion and other causes and (ii) the difficulties in land use owing to physical land characteristics, including climate. According to The National Department of Agriculture (Development and application of Land Capability Classification for South Africa – 2002). Eight classes of land are suitable for various forms of Agriculture, they are:

- **Class I**

Land in Class I has few limitations that restrict its use.

- **Class II**

Land in Class II has some limitations that reduce the choice of plants or require moderate conservation practices.

- **Class III**

Land in Class III has severe limitations that reduce the choice of plants or require special conservation practices, or both.

- **Class IV – 24 % of land within of NMBM boundary**

Land in Class IV has very severe limitations that restrict the choice of plants, require very careful management, or both.

It may be used for cultivated crops, but more careful management is required than for Class III and conservation practices are more difficult to apply and maintain.

It may be well suited to only two or three of the common crops or the harvest produced may be low in relation to inputs over long period of time.

Use for cultivated crops is limited as a result of the effects of one or more permanent features such as:

Steep slopes; severe susceptibility to water or wind erosion or severe effects of past erosion; shallow soils; low water-holding capacity; frequently flooding accompanied by severe crop damage; excessive wetness with continuing hazard of waterlogging after drainage.

- **Class V**

Land in Class V has little or no erosion hazard but have other limitations impractical to remove that limit its use largely to pasture, range, woodland or wildlife food and cover. These limitations restrict the kind of plants that can be grown and prevent normal tillage of cultivated crops. Pastures can be improved and benefits from proper management can be expected.

Examples of Class V are:

Bottomlands subject to frequent flooding that prevents the normal production of cultivated crops; level or nearly level stony or rocky land; ponded areas where drainage for cultivated crops is not feasible but which are suitable for grasses or trees.

- **Class VI – Land with limited use: generally not suited to cultivation**

Land in Class VI has severe limitations that make it generally unsuited to cultivation and limit its use largely to pasture and range, woodland or wildlife food and cover.

Land in Class VI has continuing limitations that cannot be corrected, such as:

Steep slopes; severe erosion hazard; effects of past erosion; stoniness; shallow rooting zones; excessive wetness or flooding; low water-holding capacity; salinity or sodicity; severe climate.

Physical conditions are such that it is practical to apply range or pasture improvements, if needed, such as seeding, liming and fertilizing.

- **Class VII- Land with limited use: generally not suited to cultivation**

Land in Class VII has a very severe limitation that makes it unsuitable to cultivation and that restrict its use largely to grazing, woodland or wildlife.

Restrictions are more severe than those for Class VI because of one or more continuing limitations that cannot be corrected, such as:

very steep slopes; erosion; shallow soil; stones; wet soil; salts or sodicity; unfavourable climate.

Physical conditions are such that it is impractical to apply such pasture or range improvements as seeding, liming and fertilizing.

- **Class VIII – Land with limited use: generally not suitable to cultivation**

Land in Class VIII have limitations that preclude its use for commercial plant production and restrict its use to recreation, wildlife, water supply or aesthetic purposes.

Limitations that cannot be corrected may result from the effects of one or more of:

erosion or erosion hazard; severe climate; wet soil; stones; low water-holding capacity; salinity or sodicity.

Land in Class VIII cannot be expected to return significant on-site benefits from management for crops, grasses or trees, although benefits from wildlife use, watershed protection or recreation may be possible.

The highest capability of land index within the NMBM is Class IV located along the southern coastline ranging from Cape Receife to Beachview Coastal Village and the developed suburbs of Port Elizabeth being south of Bethelsdorp and Kwanobuhle. This makes up approximately 24% of Metro land. Approximately 36 % located north of Motherwell and Uitenhage is suited for forestry and grazing. See map 4.

D 4 Drainage & Hydrology (See Maps 5, 6 & 7)

The Swartkops River system bisects the study area from the north-west to south-east. This perennial river is fed by a well developed network of dendritically arranged, ephemeral rivers and streams, including the Eland River and the Chatty River. Other prominent drainage systems in the study area include the Papkuils, Goega, Sundays, Maitland and Van Stadens Rivers.

- **Drainage and Damp**

Adequate surface drainage measures would be required at any new development in the Metropole, to ensure that ponding does not take place near the foundations of any structure. Water Seeping into the potentially problematic foundation material may act as a trigger mechanism for structural failure.

As already mentioned, perched water tables are also prevalent, especially after periods of heavy or prolonged precipitation, and may lead to damp related problems

- **Ground Water**

Ground water is a vitally important source of water in South Africa. All future development should, therefore, be planned and implemented to avoid contamination of ground water aquifers.

The most prominent aquifer in the area is the quartzitic sandstone rock (Table Mountain Group), but water is also found in certain other foundations, including the aeolian deposits.

Perched water tables are also prominent in most areas, but are usually only seasonal, with the exception of the lower lying areas.

D 5 Protected Areas

A large proportion of the natural vegetation in the build up parts of the Nelson Mandela Bay Municipality has been removed to facilitate development. Pristine natural vegetation does, however still occur around the build up areas, and some of these vegetation communities are conservation worthy.

These include the Mesic Succulent Thicket to the east end north, Bontveld to the east, Coastal Forest along the south-western coastline, and Fynbos to the west and north-west. Environmental Impact Assessments in undisturbed areas should, therefore, precede development.

D 6 Infrastructure & Civil Services (See Maps 8a, b, c, d, e, f)

D 6.1 Services Barrier & Reach

The reach of bulk services is fundamental to the provision of essential services to communities throughout the Municipality. Therefore, the planning of the provision of such services, in conjunction with the spatially identified areas for various proposed land uses is imperative.

The adequacy of planning to provide such services is addressed below under the following categories:

1. Sewage
2. Drinking water; and
3. Electricity.

D 6.1.1 Sewerage: Areas within The Edge

Development should follow clear development guidelines as dictated by the Spatial Development Framework and other sectoral plans such as the Sewerage Master Plan.

The Sewerage Master Plan, prepared by Iliso Consulting, subdivided the NMBM into 12 sewer catchments zones as follows:

Upper Baakens; Lower Baakens; Driftsands; City; Papenkuils; Chatty/Swartkops; Wells Estate/Markman; Motherwell; Despatch; KwaNobuhle; Uitenhage West; Uitenhage East; and the new proposed Coega catchment area.

Each sewer catchment was thoroughly investigated and the results are documented in the relevant sections of the master plan. However, it was deemed necessary to highlight some of the more crucial findings to emphasise the urgency of addressing these potential problem areas.

The SDF is intended to guide the future expansion of the sewerage network. It is imperative that future infrastructure networks be integrated with proposed development areas. The SDF should play a leading role in this regard.

Motherwell / Coega Development Areas

The biggest developments foreseen by the SDF are the developments west of Motherwell, on both sides of the R334. These developments will extend as far as Uitenhage and will be approximately three times the size of the existing Motherwell area. These developments fall between the Swartkops River in the south-west and the Coega River in the north-east.

Chatty Swartkops Development Areas

The metro's 10 year housing programme allows for major developments in the western portion of the Chatty/Swartkops sewer catchment area. Fortunately detailed planning for these developments is complete and infrastructure is currently being installed. These developments will however generate substantial quantities of effluent and thus have significant impact on the capacity of the Fish Water Flats WWTW.

Uitenhage/ Jagtvlakte Development Areas

The SDF allows for development to the west and the east of Uitenhage. There is a strong possibility that there will be a requirement for a collector sewer running along the eastern side of the R75 and eventually discharging into the Kelvin Jones WWTW. The initial planning for Jagtvlakte is complete and effluent discharge from this area needs to be incorporated into the future planning for the Kelvin Jones WWTW.

Planning for the development of the areas east of Uitenhage should commence within the next year. Specific time frames of the development of Jagtvlakte area need to be determined and agreed with the town planners.

Bridgemead Development Area

This area is relatively small in comparison to the developments mentioned above. Detailed planning of the area has been completed and with minor localised upgrading of the sewer network, the reticulation system will be able to accommodate the increased effluent flow.

Lorraine Densification and N2 Development

The N2 development is a relatively minor development and planning is currently being done. Also, the Upper Baakens system has the capacity to accommodate effluent generated by this development. The effect of current densification in Lorraine the area is addressed in a Local Spatial Development Framework (LSDF) Plan currently being completed by the NMBM. The Lorraine LSDF currently being prepared by consultants will address the sewerage requirements for this area in detail.

Lovemore Park Rural, Mount Pleasant and Walmer Heights Development Areas

Densification of the small holdings and farms in Lovemore Park and along the Sea View road is currently taking place. The SDF does not address residential development beyond the Urban Edge. The Rural Land Use Management Policy currently being completed takes cognisance of these issues on a detailed level.

The possibility of a southern approach sewer needs to be investigated in order to service these low lying developments and it is envisaged that this collector sewer will ultimately drain towards the Driftsands WWTW.

The information detailed in the aforementioned paragraphs summarised the broad sewerage development proposals recommended in the Sewerage Master Plan currently being prepared.

It is of vital importance that the preparation of Sustainable Community Development Plans or Local Spatial Development Frameworks include the completion of planning for sewage needs on more detailed level of planning.

D 6.1.2 Sewerage: Areas Beyond The Edge

A Sewerage Master Plan for the Peri-Urban areas of the NMBM was prepared by Mercytech Consultants. This plan assesses the geotechnical conditions of the peri-urban area of the NMBM and proposes various options and systems for the management of sewerage and waste water. The status of this document is unknown and must be verified prior to the acceptance and implication of any on-site sewerage system. Various options for systems are proposed in the plan.

Waterborne Systems

Specific areas have been designated to be serviced with waterborne systems and a central purifications works.

Areas incorporated into this model are:

Rocklands; Witteklip; St Albans; Seaview; and The Wedgewood Golf Estate.

Split System – Concentrated

Split system is a system handling grey water and self-composting toilets for blackwater. This system will be installed in all areas where concentrations of people are to be expected, such as :

1. Clinics;
2. Rural hospitals;
3. Camping grounds;
4. Training grounds e.g. eco-schools, scouts;
5. Rural Villages;
6. Tourism attractions – hotels, game parks and reserves, lodges, health spas;
7. Sport and recreation developments – golf courses, nature conservation areas;
8. Labour housing developments;
9. Upliftment schemes – small farmer communities;
10. Small industries – such as salt works etc.; and
11. Schools.

Split System – Localised

This will be the standard system to be installed. All erven and farms will be included unless overrode by any of the above.

Conservancy tanks

Areas currently exist where erven are serviced with this maintenance costly system.

D 6.2 Water Provision

Limited information on the demand and future supply of water is provided SDF. The utilisation of this vital resource to promote and enable development is highlighted in the recently completed NMBM Water Master Plan prepared by Africoast Engineers. This document should inform the SDF.

D 6.2.1 Zone Studies

The Water Master Plan has determined the water supply needs in future development areas and the need to optimise the infrastructure requirements of those areas that currently have infrastructure.

The reservoir zones which are more than 90% fully developed (i.e. less than 10% increase in future demand) were not addressed unless rezoning was considered necessary in terms of the infrastructure optimisation goals. These “unchanged” zones are scheduled below:

- **Port Elizabeth Reservoirs:** Bethelsdorp, Fairview, Fort Nottingham, Glendinningvale, Linton Grange, Malabar, St Georges, and Struandale.
- **Uitenhage/ KwaNobuhle Reservoirs:** KwaNobuhle No 2 (Old 6 MI) and KwaNobuhle No 1 (Old 10 MI).
- **Despatch Reservoirs:** Tulbach Street, Voortrekker Street and End Street.

For all other existing reservoir zones, the estimated ultimate and 2020 zone demands were determined, compared with present zone demands, storage available and infra-structure required. New reservoir zones were determined to compliment and support existing zones.

Areas were determined where development 'may not' or 'could not' take place on the following basis:

1. *Nature Reserves* – all nature reserves were identified and are shown on all zone lay-out plans as areas of exclusion with “no water demand”.
2. *NM MOSS* – All areas categorised by the 2004 NM MOSS guidelines within the “old PEM” urban boundaries were excluded from future zones and zone demands. It will be important to amend the Water Master Plan to include and comply with the revised NM MOSS.
3. *Exclusion Zones* – Exclusion areas where water supply could only be supplied at unrealistic costs or where no high ground is available for sufficient supply pressure, were categorised as “Exclusion Zones” and excluded from future zone demands.

4. *SDF Urban Fence* – Most land outside the proposed Urban Fence is privately owned and sub-division applications for development will arise in future. The “Green Structure” and “Sensitive Areas” as classified in the SDF, has therefore been applied as an indicator factor which will slow development but not prevent it.
5. *Return Effluent Supply* – Areas under irrigation by recycled water (sports fields, golf courses) were excluded from supply zones.

D 6.2.2 Supply Zones: Demand Determination 2020

The Rural Land Use Management and Urban Densification Policies that are currently being finalised have taken cognisance of supply zone and predicted demand until 2020. The combined NMBM and Coega IDZ water demand to be supplied from all sources for 2020 is estimated at 390 M/day.

Zones have been grouped for planning and discussion purposes in the sub-section to follow:

- **Emerald Hill / Heatherbank / Lovemore Heights**

This grouping of reservoirs is for the zones supplied from the Schoenmakerskop Pump Station.

- **Greenbushes / Chelsea / Theescombe Zones**

These zones are expected to show fastest growth in water demand over the period 2005-2020. Some 65% of the Chelsea zone falls within the Urban Fence. Both Greenbushes and Chelsea zones are traversed by the urban fence line which will be reviewed every 5 years. The peri-urban areas within these two zones are experiencing high interest from private land owners for sub-division and hence an increased rate for densification can be expected.

The present storage in Chelsea and Greenbushes reservoirs is sufficient. The Seaview pump station with a transfer capacity of 65 M/day will not need upgrading before 2020 as can be seen from the table above. Sufficient spare capacity still exists for a back-up supply to Chelsea.

- **Zones North of Swartkops River**

The Motherwell zone south of Swartkops River will be supplied from the existing 450mm diameter Motherwell to Chelsea pipeline. The proposed Motherwell South zone will also include the present Azalia reservoir zone. Due to the poor state of this floating roof reservoir it should be decommissioned from service.

The maximum transfer capacity of the 450mm diameter pipeline is some 16 M/day which will be sufficient for a combination of domestic and industrial use for the Motherwell South zone until 2020.

D 7 Vacant Land & Ownership (See Map 9)

For estimated requirements related to population increases, and in particular for the purpose of calculating land demand, the population figure to the year 2020 has been escalated to 1.5 million in order to allocate sufficient land in case population growth patterns unexpectedly increases. Furthermore, in view of the focus on housing delivery and the need to plan accordingly, predictions that household sizes will decrease from 4.5 to 4.0 persons per household in the medium and long-term perspectives are noted. Consequently, future land demand calculations will be based on this reduce household size assumption.

The table below for the different planning periods incorporates this assumed trend (which more recent statistical data confirms) and the calculated population growth including housing backlog.

Planning Phases	Population Growth	Additional Households
2005-2010	110 000	27 500
2011-2015	115 000	28 750
2016-2020	125 000	31 250
TOTAL	350 000	87 500

The above land demand estimates cover short, medium and long-term development phases and are based on an exaggerated population projection. Consequently, these projections need to be advised as and when more up to date information becomes available. Although short term predictions based on the 2001 Census are more accurate, medium to long-term predictions obviously suffer from greater uncertainties in terms of land demand and resources.

Much of the demand for land however relates to residential related land uses. In terms of significant industrial and commercial need, it is anticipated that the supply for this need would be primary accommodated within the new industrial areas at Coega as well as Jaghtvlakte outside Uitenhage. Provision for the needs of the commercial sector is largely located in the Walmer and Newton Park areas where large tracts of residential land have been identified for this purpose.

Besides the land owned by the State or Subsidiary Organisations, the large portion of land within the NMBM area is owned by private individuals. Approximately 67 % of all land in the Metro Area is privately owned, 12 % is Public owned and the remaining 21 % is unaccounted for or not registered in the Deeds Office.

The large tracts of vacant land or agricultural small holdings encompassing the built up urban areas comprise primarily of cultivated or partially formed agricultural units. An array of land uses are dispersed at random in the urban periphery. Besides structured urban residential development in the coastal and rural villages, residential small holdings with varying scale and extent are located at the western area of the NMBM. The northern vacant land units are substantially large privately owned forms and agricultural lots utilised for game farming, tourism and commercial farming.

D 8 Development Trends (See Map 10 a & b)

Repeal of the notorious “influx control” regulations during the 1990’s resulted in extremely rapid urbanization from the rural areas into the city. As people moved into the city, informal settlements established themselves in areas not suitable for residential development and the resultant poor quality of life in these areas became planning, social and economic issues. The increases in the number of informal settlements is also attributed to the backlog of housing which is estimated to be approximately 80 000 units for lower income groups.

In order to meet this demand, most new residential developments catering for this segment of the market are taking place north of the Swartkops River in Wells Estate and the north-west of Motherwell, as well as towards Uitenhage along the main Uitenhage Road axis. Furthermore in-situ upgrading is also taking place within existing townships areas primarily on sites set aside for other uses like school sites which have been invaded.

A number of long standing informal settlements also exist in the peri-urban areas of the Metro. Part of the upgrading plans of the erstwhile Western District Council (now inherited by the NMBM) was the establishment of property planned and serviced residential townships in the following areas:

Rocklands; Kuyga; Seaview; St Albans & Witteklip.

With the formalisation of these isolated settlements as part of the housing program, they need to be contained as such development are not in line with Development Facilitation Act principles or the Provincial Spatial Development Plan.

▪ Patterns and Trends

Over the last 20 years, there has been a market tendency to decentralise from city centre of Port Elizabeth.

Decentralisation in the erstwhile Port Elizabeth area has had a significant impact on the downtown CBD area as well as the North End, Sidwell and Korsten areas where not only commercial activities, but more industrial type activities are relocating to Walmer, Newton Park as well as Fairview west of the William Moffett Expressway. This includes motor sales outlets that have traditionally located in North End in “motortown”. Nevertheless, recent reports indicate a gradual reversal of this trend with commercial activities beginning to take up vacant space within the CBD.

The single biggest industrial development initiative is the 1147ha Coega Industrial Development Zone and the deepwater Port of Ngqura situated at the mouth of Coega River. The Coega IDZ is expected, over time, to change the “epi-centre” of industrial growth.

Beyond the urban fabric, the areas located to the west of Mount Pleasant and Lorraine, namely Theescombe, Lovemore Park and surrounding areas are under pressure to land uses from primarily agriculture land to lower density lifestyle residential and estates. Applications with varying density scattered due to the lack of planning and management guidelines.

D 9 Residential Density (See Map 11)

The residential unit density increases dramatically between the higher and lower income neighbourhoods.

Most of the former “white” neighbourhoods have densities within the 1 to 10 du/ha category whilst in the northern areas (Betheldorp, Gelvandale and Korsten areas) the density ranges from 11 to 40 du/ha.

The Ibhayi, Motherwell, Bloemendal, Khayamandi and Kuyga Areas have the highest net density in the Metro. These densities range between 21 and 100 du/ha. These areas are also primary residential in character with minimal retail recreational and open space land uses prevailing.

Rural land uses densities range from less than agriculture lots to farm portions compressing several hundred ha.

A prominent and uniform pattern of subdivision is emerging in the Theescombe and upper Seaview Road Area where subdivisions below 2 ha are permitted.

A random pattern of subdivision is prevalent in the rural Western Areas adjacent to Old Cape Road, the R334 distributor and the Kruisrivier Area west of Uitenhage.

The area north west of Beachview and the Maitlands River Mouth is also characterised by a “patch work” pattern of subdivision size. Densities in this area range between 5 and 10 hectares from Maitlands River Mouth to Colleen Glen. The Colleen Glen Area has erf sizes of less than 2.2 ha ranging to 15 ha.

In order to contain fragmentation sprawl and prevent “leap frogging” development in the rural, a comprehensive policy addressing rural density and erf size is critical to sustainable rural development and growth management.

D 10 Population Distribution (See Map 12)

The 2007 detailed demographic update study reveals some of the prevailing misunderstandings with regard to population features of the Metropolitan area and suggests that the population is less than is generally believed. A current population figure of slightly more than 1.1 million (1 130 821) is closer to the truth than 1.3 million to 1.5 million that is often assumed.

The 2007 demographic study reveals that the proliferation of new dwellings on the urban edge and in the other areas is less a result of urbanization and more of the movement of people within the Metropolitan area. Simkins (2007) also suggests that the total population is not only smaller than expected but also that the fertility rate is declining.

For forecasting purposes and taking into account relatively low levels of in-migration, HIV Aids and the roll out of anti-retroviral drugs, it is assumed that there will be an annual population increase of 0.53 % representing natural growth rate.

A total population of 1 243 930 is forecast for the year 2020. Map 12 indicates the current population distribution within the NMBM Boundary.

D 11 Planning Informants (See Map 13 & 14)

▪ Sustainable Community Units

Besides the MSDF prepared for the NMBM and reviewed on an annual basis, two other important planning policies need to be jointly consulted. The Metro recently subdivided the entire urban area into Sustainable Community Units. These are planning areas of a size defined by accessibility of services within a maximum walking distance of 2 km or 30 minutes. The urban area comprises of 60 SCU's. See Map 13.

Another planning environment is the Zoning Scheme or Town Planning Scheme. A Zoning Scheme is a statutory required and approved set of regulations, a register and zoning map collectively setting out the purpose for which land may be used and land use restrictions applicable to the use. There are currently 12 different zoning schemes applicable to land within the Metro Area. Refer to Map 14.

Section

E

SECTION E : RURAL LAND USE MANAGEMENT

E 1 Introduction

The rural areas in and around the Nelson Mandela Bay Metropolitan Municipality are threatened by urban sprawl, receding rural landscapes, the disruption of ecological systems, adhoc applications for subdivision and rezoning, the inclusion of urban activities into the rural environment, the pressure to provide adequate engineering infrastructure to the developing area and the absence of a land use management policy or guideline to manage the rural land development. Furthermore, the Neslon Mandela Bay Metropolitan SDF provides limited guidance to the management and development of the urban and rural areas within the Metropolitan Municipal area. In 2006, the NMBM initiated a Rural Land Use Management Policy project to guide and manage development specifically in the rural area of the Metro. The Rural Land Use Management Policy forms an important part of the overall review of the NMBM urban Edge. The other important component is the preparation of an Urban Densification Strategy. The transition area between the rural land use management policy study area and the urban densification project indicates the transition from primarily urban to peri-urban or rural land use activity. This transition prepared on cadastral level will form the Urban Edge.

The adhoc development spread at random throughout the Metropolitan area promotes urban sprawl. The aim of this section is to introduce a consistent and sustainable process of managing the unique rural areas formulating a set of management guidelines for the City's diverse rural areas ranging from the coastline to the rural hinterland.

E 2 Objectives

E 2.1 The main objectives of the Rural Land Use Management Policy for the Peri-urban and Rural areas are:

- * Minimising the footprint of the city.
- * Preventing the destruction of valuable agricultural land.
- * Enhancement of open spaces and protection of ecologically sensitive land.
- * Providing choice in terms of housing typologies.
- * Creating sustainable communities.

- * Increasing the marketability of the city.
- * Reducing inequality amongst all residents.
- * Reducing the cost for ineffective service infrastructure provisioning.

E 3 The Rural Management Rationale & Approach

The two most important values underlying the planning approach are :

- * The creation of a quality, liveable human settlement to foster positive human development.
- * The awareness and acknowledgement of nature. It is the purpose of the planning approach to achieve environmental sustainability – a long-term dynamic balance which ensures that natural and human ecosystems co-exist harmoniously.

The Rural Land Use Management Policy aims to guide rural development towards the most appropriate places within the Metro area and to maximise the optimal use of existing infrastructure and re-development to be considered preferable to most green field development. These areas will contribute significantly to the reconstruction of the city by permitting growth in areas located well in terms of the environment, employment opportunities and other infrastructure.

It is also imperative to manage the rural zones of the metropolitan area to ensure high quality environments that contribute to the overall sustainability of the Metro Area.

E 3.1 Environmental Principles

The structuring principles of the Rural Land Use Management Policy guide the structuring of the rural zones. These principles are briefly described as follows :

- **Conservation of natural resources** : Ecologically sensitive space is easily lost and only recovered at high cost and effort or irreplaceable, yet is essential for sustaining life. Urban growth or development should therefore be guided, informed and influenced by the ecological factors as a significant element. This means that ecologically sensitive open space (green space) should be identified first and used to guide new development into areas where it would be least detrimental and where it could respond to areas with high ecological risks or sensitivity. The NMBM Strategic Environmental Assessment plays an important role in this regard.

In order to protect as much open space as possible for ecological processes and productive agriculture, urban development should be concentrated or compacted, as opposed to sprawling. Even though the NMBM covers a large area, land for urban development should be regarded as a scarce commodity and it should be used efficiently. Concentrating development will not only have the advantage of protecting valuable open space but will also make efficient and economical use of infrastructure and services, minimize the environmental, social, and financial costs of new development and reduce commuting distances, which will in turn reduce air pollution from vehicles. In addition, compaction brings people closer to facilities, services and jobs and intensifies economic opportunities.

- **Promotion of a Biodiversity Network (Green Structure)** : Functioning ecological processes do not operate within discreet pockets of land, but require linkage and interrelated stretching over the entire Metro. Open spaces should thus be interlinked to allow ecological processes to operate effectively and to promote the largest possible biodiversity representation of fauna and flora. The network includes the critical linkage between the coastline and rural hinterland.

E 3.2 Spatial Perspective

This perspective identifies four (4) areas in the rural area based on the characteristics and functions of each precinct. Guidelines for the management and development of these areas are provided to support the objectives of the spatial perspective.

E 3.2.1 Peri-urban Development Zones

Under this classification, reference is made to localities suitable for future development. This implies that the areas are located in close proximity to urban areas of opportunity including employment and social amenities, are accessible in terms of the movement system, and are mostly areas have potential for lower impact development with minimum ecological sensitivities. This zone is considered to be desirable for limited “infill” within the wider metropolitan context. The development of these areas with a range of urban activities will improve the overall efficiency of the area and allow greater access of residents to the benefits and opportunities of rural living. Although not currently served by bulk infrastructure in most cases, these are areas where such services should be provided in the short term (next 2-10 years). The provisioning of services and the change in land use should be co-ordinated and guided in accordance with a Local Spatial Development Framework, and does not imply that haphazard leap-frog development will be considered desirable. The division of land in areas identified for Peri-urban Development is not encouraged, as smaller land parcels impact on the economic feasibility of urban development.

E 3.2.2 Rural Development Zone

This area is partly developed area, with dispersed ecological sensitivities. The area is not suitable for urban development within the medium to long term (next 10-15 years) and is not highly integrated with the larger urban system. No bulk services are available or should be made available within the medium term. To allow urban development in the development zones will not contribute to the spatial objectives of restructuring the city or support efficiency in term of urban form and processes.

E 3.2.3 Biodiversity Zones

This area is characterised by highly sensitive ecological areas and is a valuable non-renewable resource in the metropolitan area. It does not only include isolated sensitive areas, such as the coastline or red data sites, but also ridge systems, waterway systems and ecologically sensitive areas with the potential to support biodiversity at a metropolitan scale. The integrity of the natural areas must be maintained, implying that as little as possible human interventions should be allowed in these areas.

E 3.2.4 The Agriculture Promotion Zones

These include the large cadastral units or farms partially unspoiled and developed located on the northern periphery of the built up areas of Uitenhage, Despatch and Motherwell. These areas are characterised by undulating hills, covered by thick shrub, and commercial game farms.

E 4 The Spatial Structuring Policy

E 4.1 Introduction

For the purpose of the Land Use Management Policy, the rural area of the NMBM is divided into 4 management zones. These zones / areas are on the fringes of urban development and encompass natural areas, partially cultivated and habited smallholdings or farms.

The areas, although adjacent or in close proximity to one another, have varying characteristics, ranging from vegetation type, topography, extent, density, land use and rural function. The character of the area forms the basis of determining the various growth development and management policy for the rural area. These are detailed as follows :

- The extent of the rural area of the NMBM is subdivided into a ranging cadastral erf size. Development policy proposed zones, clusters properties of similar extent in order to retain the character of the specific portion of the rural area.

E 4.2 Peri-urban Zone 1 (Hinterland)

Spatial features of the zone are as follows:

- This zone is located to the west of the Mount Pleasant, Lorraine, Kabega, Hunters Retreat urban areas and south of the Greenbushes peri-urban area.
- The zone is bounded by the narrow gauge railway line in the north and east, the Lorraine neighbourhood boundary on the east, the Madiba Bay concession area boundary and Seaview Road in the south, whilst the western boundaries are demarcated by cadastral boundaries, steep slopes and undulating topography.
- The Colleen Glen, Theescombe and Lovemore Park areas fall within the zone
- The N2 freeway, Kragga Kamma Road, linking Colleen Glen to the City, Seaview Road and other minor roads are located in this zone.
- The zone is characterised by cadastral units ranging from 1 hectare to larger portions of farm land located primarily on the western boundary of the zone. The portion of land is affected by arable and non-arable land capability in terms of agriculture production.
- The Kragga Kamma Game Reserve is located within the zone.
- The land use comprises of primarily cultivated agriculture, residential estates, a school located in Theescombe, and Amashe Golf Course and golf course located in the Kragga Kamma area.
- The zone can be provided with bulk water and electricity supply. No water-borne sewerage or the treatment thereof is available in this zone.
- The upgrading of a linked road linking Kragga Kamma Drive to Seaview Drive is planned for the area after 2010.
- Virtually all land falling in the zone is in the hands of private ownership.
- The area A, Lovemore Park, PE Zoning Scheme and Section 8 Zoning Scheme, promulgated in terms of the Land Use Planning Ordinance (15 of 1985) is applicable.

PERI-URBAN: ZONE 1 (Hinterland)

Permitted uses	<ul style="list-style-type: none"> ➤ Agriculture, tourism, low density residential estate development, guest farms, golf estates, sports fields & service trades. ➤ Land Reform Projects
Zoning Schemes	<ul style="list-style-type: none"> ➤ Area A. ➤ Lovemore Park. ➤ PE Zoning Scheme. ➤ Section 8 Zoning Scheme, Land Use Planning Ordinance. 15 of 1985
Density & Subdivision	<ul style="list-style-type: none"> ➤ Minimum size of Subdivision permitted for new Subdivisions is 1, 8 ha. ➤ "Cluster and Space" development principle to be promoted. ➤ Minimum subdivision of 1.8 ha ➤ Maximum residential density of 2 units per 1.8 hectare. ➤ Gross density to be calculated over entire site/cadastral unit. ➤ Deviation permitted on special merit e.g. Servitudes for roads, services, rivers, physically severing the land. ➤ Maximum subdivision size of clustered footprint is 1500m².
Special conditions	<ul style="list-style-type: none"> ➤ Do not permit establishment of new informal settlements, shopping malls, schools, and high density housing uses not compatible with rural uses. ➤ Social infrastructure, such as schools, retail offices, non emergency services to be discouraged.

E 4.2 Peri-urban Zone 2 (Coastal)

Spatial features of the zone are as follows:

- This area is located to the west of the Peri-urban zone 1 and directly abuts the Beachview, Seaview and Kini Bay coastal villiages.
- The western boundary of this zone abuts the Maitlands River Mouth and the Colleen Glen Maitlands River arterial.
- The area is characterised primarily by cadastral units of larger than 10 hectares in extent.
- The western portion of the zone is characterised by cadastral units ranging from 10 to 15 hectares. This cadastral benchmark will form the character of the area in its entirety.
- The area is characterised by undulating topography. The area is located on the western periphery, steeper than 15 or 20%.
- The agricultural land capability index for the area is non-arable class 6 agriculture land, primarily used for wild life limited forestry, veld and grazing. The land has a low land capability index for agriculture development purposes.
- The geology comprises of terrace gravel over clay and unconsolidated Aeolian deposits.
- A large portion of the property is affected by the proposed conservation corridor (MOSS proposed for the area).
- The proclaimed island nature reserve is located in the corridor.
- The broad land use comprises of primarily cultivated agriculture with no community facility available in the area.
- Approximately 50% of the zone can be provided with bulk water supply.
- No water-borne sewerage is available for the area. The status of the non-waterborne sewerage system must be confirmed by the sewerage master plan.
- Besides the island nature reserve, approximately all land is privately owned.
- The section 8 Zoning Scheme in terms of Land Use Planning Ordinance, 15 of 1985, is applicable to the area.

PERI-URBAN: ZONE 2 & 3 (Coastal)

Permitted uses	<ul style="list-style-type: none"> ➤ Agriculture, tourism, resorts, low density residential, guest farms, resource based low residential (Golf course equestrian eco estates), restaurants, tea gardens. ➤ Land Reform Projects in accordance with special conditions
Zoning Schemes	<ul style="list-style-type: none"> ➤ Section 8 Zoning Scheme, Land Use Planning Ordinance. 15 of 1985
Density & Subdivision	<ul style="list-style-type: none"> ➤ Minimum size of Subdivision permitted for new Subdivisions is 5 ha. ➤ "Cluster and Space" development principle to be promoted. ➤ Maximum residential density 2 units per 5 ha. ➤ Gross density to be calculated over entire site/cadastral unit. ➤ Deviation permitted on special merit e.g. Servitudes for roads, services, rivers, physically severing the land. ➤ Maximum subdivision size of clustered footprint is 1500m².
Special conditions	<ul style="list-style-type: none"> ➤ No development is to be permitted on slopes steeper than 1 in 5 gradient and in the 1 in 100 year flood level. (No Development Zones). ➤ All river valleys and ground with slopes equal to or exceeding 1 in 5 should be demarcated as no development areas. ➤ No development should be located within 300m setback of high water mark. ➤ 1 km of coastal high water mark needs to be controlled i.t.o. The provisions of NMBM Coastal Management Plan and Coastal Management Bill.

E 4.3 Rural Zone 1 (Hinterland)

Spatial features of the zone are as follows:

- The area forming the rural zone 1 (Hinterland Zone), forms the outer periphery of the Metropolitan area.
- This area is located to the north of the N2 freeway, west of the Greenbushes area and the Wedgewood Golf and Residential Estate and south of the Van Der Kemps Kloof – Groendal nature area. The outer boundary of this area is characterised by a hard boundary (N2 freeway) to the south and the certain time-like shaped river boundary forms the northern boundary of this site.
- The site is traversed by the R334 Regional distributor, the R102 Regional distributor and the secondary route linking Fitchers Cornel to the Kouga boundary on the west.
- The narrow gage railway line serving the Kouga Municipal area traverses the site in the south.
- The Rocklands rural village is located within this zone.
- No Municipal bulk water is available to the area at present. This area will however be serviced once the water network proposed by Water Master Plan is developed. No waterborne sewerage system services the site. Non-waterborne sanitation must be provided by the developer within this area.
- The land is primarily owned by the private sector.
- Land Use Management is managed in terms of the Section 8 Zoning Scheme applicable to the area.
- Applications for subdivision and rezoning are seldom received for land pockets within this area.

RURAL: ZONE 1 (Hinterland)

Permitted uses	<ul style="list-style-type: none"> ➤ Agriculture and tourism. ➤ Low density residential estate development, guest farms, associated light industry (Piggeries, battery, tunnel farming), agriculture nurseries, mining, nature reserves, bulk services. ➤ Land Reform Projects
Zoning Schemes	<ul style="list-style-type: none"> ➤ Section 8 Zoning Scheme, Land Use Planning Ordinance. 15 of 1985
Density & Subdivision	<ul style="list-style-type: none"> ➤ Minimum size of Subdivision permitted for new Subdivisions is 10 ha. ➤ "Cluster and Space" development principle to be promoted. ➤ Maximum residential density 2 units per 10 ha. ➤ Gross density to be calculated over entire site/cadastral unit. ➤ Deviation permitted on special merit e.g. Servitudes for roads, services, rivers, physically severing the land. ➤ Maximum subdivision size of clustered footprint is 1500m².
Special conditions	<ul style="list-style-type: none"> ➤ Decline establishment of new informal settlements, shopping malls, schools, high density housing uses not compatible with rural uses. ➤ Social infrastructure other than eco tourism facilities, such as schools, retail offices, non emergency services to be discouraged.

E 4.4 Rural Zone 2 (Coastal)

Characteristics of the area:

- The Rural Zone 2 is located to the south of the N2 freeway and directly north of the Blue Horizon Bay Coastal Village.
- The area is characterised by steep undulating slopes with gradients exceeding 10% over the largest portion of the zone.
- The Van Stadens Road bisects the site providing access to Blue Horizon Bay.
- The site has limited or non-arable agriculture potential and is classified as class VII in terms of the Land Capability Index.
- Geology of the site is made up by Gamtoos Group Deposits and Consolidated Aeolian deposits.
- A large portion of the site is environmentally sensitive and falls within the proposed Environmental Conservation System detailed in the SEA Report.

RURAL: ZONE 2 (Coastal)

Permitted uses	<ul style="list-style-type: none"> ➤ Agriculture, tourism, low density residential estate development, guest farms, golf estates, small holdings and sports fields. ➤ Land Reform Projects in accordance with conditions
Zoning Schemes	<ul style="list-style-type: none"> ➤ Section 8 Zoning Scheme, Land Use Planning Ordinance. 15 of 1985
Density & Subdivision	<ul style="list-style-type: none"> ➤ Minimum size of Subdivision permitted for new Subdivisions is 20 ha. ➤ "Cluster and Space" development principle to be promoted. (Clustered development of residential permitted within the density parameter of 2 units per 20 ha) ➤ Maximum residential density of 2 units per 20 ha. ➤ Gross density to be calculated over entire site/cadastral unit. ➤ Deviation permitted on special merit e.g. Servitudes for roads, services, rivers, physically severing the land. ➤ Maximum subdivision size of clustered footprint is 1500m².
Special conditions	<ul style="list-style-type: none"> ➤ Decline establishment of new informal settlements, shopping malls, schools, high density housing uses not compatible with rural uses. ➤ Social infrastructure other than eco tourism facilities, such as schools, retail offices, non emergency services to be discouraged. ➤ No development is to be permitted on slopes steeper than 1 in 5 gradient and in the 1 in 100 year flood level. (No Development Zones). ➤ All river valleys and ground with slopes equal to or exceeding 1 in 5 should be demarcated as no development areas. ➤ No development should be located within 300m setback of high water mark. ➤ 1 km of coastal high water mark needs to be controlled i.t.o. The provisions of NMBM Coastal Management Plan and Coastal Management Bill.

E 4.5 Biodiversity Corridor – Green Structure (Limited Development Zone)

Characteristics of the area:

- Low dense cadastral units.
- Limited farming and agriculture.
- Eco tourism activities.
- Steep and undulating terrain.
- Large tracks of undisturbed natural vegetation.

BIODIVERSITY CORRIDOR: GREEN STRUCTURE **(Limited Development Zone)**

Permitted uses	<ul style="list-style-type: none"> ➤ Low dense residential ➤ Agriculture activities. ➤ Land Reform Projects
Zoning Schemes	<ul style="list-style-type: none"> ➤ PE Zoning Scheme. ➤ Section 8 Zoning Scheme, Land Use Planning Ordinance. 15 of 1985 ➤ Uitenhage Zoning Scheme.
Density & Subdivision	<ul style="list-style-type: none"> ➤ Subdivisions to be permitted on merit. ➤ Subdivision of land for non agricultural purposes to be discouraged. ➤ Maximum density to be permitted 2 dwelling units per 10 ha. ➤ Space & cluster development with maximum Footprint of 1500 m²
Special conditions	<ul style="list-style-type: none"> ➤ Decline establishment of new informal settlements, high density housing uses not compatible with rural uses. ➤ Social infrastructure other than eco tourism facilities, such as schools, retail offices, non emergency services to be discouraged and developed on merit

E 4.6 Biodiversity Corridor – Green Structure (No Development Zone)

Characteristics of the area:

- This zone traverses the coastline from the Van Stadens River mouth in the west to the Sundays River mouth forming the eastern boundary of the NMBM. The extent of the No Development Zone hugs the Indian Ocean coastline and ranges from a few kilometres to 300m inland.
- Pristine and undisturbed coastline with underutilized and partly derelict resorts.

BIODIVERSITY CORRIDOR: GREEN STRUCTURE **(No Development Zone)**

Permitted uses	➤ No new development is to be permitted within nature reserves and the coastal biodiversity zone.
Zoning Schemes	➤ Section 8 Zoning Scheme, Land Use Planning Ordinance. 15 of 1985
Density & Subdivision	<ul style="list-style-type: none"> ➤ No subdivision permitted. ➤ Existing use will prevail.
Special conditions	<ul style="list-style-type: none"> ➤ No development is to be permitted on slopes steeper than 1 in 5 gradient and in the 1 in 100 year flood level. (No Development Zones). ➤ All river valleys and ground with slopes equal to or exceeding 1 in 5 should be demarcated as no development areas. ➤ No development should be located within 300m of high water mark. ➤ 1 km of coastal high water mark needs to be controlled i.t.o. The provisions of NMBM Coastal Management Plan and Coastal Management Bill.

E 4.7 Agriculture Development Zone

Characteristics of the area:

- This area is located to the north of Uitenhage, Motherwell and Coega IDZ Boundary.
- The area forms the northern boundary of the NMBM Area and abuts the Sundays River Valley Municipal Area.
- Large agricultural zoned cadastral farms undulating terrain covered by undisturbed natural vegetation.
- Steep refine and catchment areas.
- Primarily stock and game farming practiced in the area.
- The north western area is undulating and abuts the CDMA Area.

AGRICULTURE DEVELOPMENT ZONE

Permitted uses	<ul style="list-style-type: none"> ➤ Agriculture (as per the section 8 zoning scheme definition), community based agriculture, game parks & nature reserves, nature based residential estates (lodges). ➤ Bulk services. ➤ Land Reform Projects
Zoning Schemes	<ul style="list-style-type: none"> ➤ Uitenhage Section ➤ Section 8 Zoning Scheme, Land Use Planning Ordinance. 15 of 1985
Density & Subdivision	<ul style="list-style-type: none"> ➤ Maximum residential density of 2 units per 20 ha. ➤ Minimum subdivision size of 10 ha. ➤ Consent use for additional dwellings to be allowed for workers employed on a permanent basis. ➤ Deviation permitted on special merit e.g. Servitudes for roads, services, rivers, physically severing the land. ➤ Subdivided land portion must be large enough to sustain commercial farming

Special conditions

- Settlement rights should be restricted on high potential agricultural land
- Comply with all relevant environmental legislation.
- Comply with legislation regulating agricultural land
- No sectional title developments permitted.

E 4.8 Coastal Villages

Characteristics of the area:

- These are the areas of Blue Horizon Bay, Beachview, Seaview, Claredon Marine, Seaview informal settlement, Kini Bay, Colchester and Canonville.
- Each village has its own unique character.
- No formal waterbourne sewage system is available for these villages.
- Limited non-residential facilities are prevalent.

COASTAL VILLAGES

Coastal Villages	➤ Blue Horizon Bay, Beachview, Seaview, Claredon Marine, Kini Bay, Cannonville/Colchester, Schoenmakerskop..
Permitted uses	<ul style="list-style-type: none"> ➤ Medium & Low density Residential dwellings. ➤ Resorts, Municipal offices, Churches, Community Halls, Guest Houses Retail outlet.
Zoning Schemes	➤ Section 8 Zoning Scheme, Land Use Planning Ordinance. 15 of 1985
Density & Subdivision	<ul style="list-style-type: none"> ➤ No subdivision of existing single residential even permitted. ➤ Minimum subdivision for new residential developments is 1200m (Blue Horizon Bay, Beachview, Seaview, Claredon Marine, Kini Bay, Schoenmakerskop) ➤ Once Municipal standard services (sewage & water) are provided the subdivision can be reviewed. ➤ Minimum subdivision for new residential erven for Cannonville/Colchester : Formal residential 600m², Informal residential 250m². ➤ Density as per appropriate zoning scheme. ➤ No further subdivision of existing erven to less than 200m².

Special conditions	<ul style="list-style-type: none">➤ The general character of the Blue Horizon Bay, Beachview, Seaview, Claredon Marine, Kini Bay and Schoenmakerskop settlements must be retained and strengthened.➤ Height restriction of all buildings not to exceed 2 storeys.➤ All new developments to comply with NEMA regulations.
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E 4.9 Rural Villages

Characteristics of the area:

- These villages comprise the Rocklands, St Albans (undeveloped) and Witteklip (undeveloped), rural villages.
- Limited non-residential facilities and land uses planned for each village.
- Limited growth is planned or encouraged.
- Township establishment undertaken by former Western District Council.
- The distance to urban facilities range between 5 and 15 kilometres.

RURAL VILLAGES

Rural Villages	➤ Rocklands, St Albans, Witteklip.
Permitted uses	➤ Informal residential, social facilities, education facilities, informal business , light industry, taxi ranks, commercial services, agriculture based industry, safety & security facilities, health facilities, cultural facilities, municipal offices, cemeteries.
Zoning Schemes	➤ Section 8 Zoning Scheme, Land Use Planning Ordinance. 15 of 1985
Density & Subdivision	<ul style="list-style-type: none"> ➤ Maximum erf size for informal residential units financed by Government subsidy is 250m² . ➤ Urban Renewal of existing settlements to be stimulated and promoted in terms of Sustainable Communities Planning Guidelines.
Special conditions	<ul style="list-style-type: none"> ➤ No new settlements to be established for each village. ➤ Limited expansion within urban edge. ➤ Communal agriculture and farming to be promoted on and developed on village periphery. ➤ Special character. ➤ NEMA compliance.

E 4.10 Golf Courses

Characteristics of the area:

- Golf courses are recreational area of land used primarily for playing golf. The areas comprising a minimum of 9 holes consist of landscaped areas and facilities limited to a golf course, clubhouse and a mechanical workshop and storage facility for golf course maintenance equipment only.
- Mini courses (Mashe Golf course) consisting of a minimum of 9 holes are also considered to be a golf course.
- The current golf course beyond the urban edge are, Sardinia Bay mini course, Kragga Kamma course.
- New golf courses and Estates beyond the urban edge should not be encouraged and feasibility studies should be undertaken to prove the long term sustainability.
- The scale of the estate development should be directly proportional to the amount of underdeveloped land available. Golf Estates successfully developed in the Southern and Western Cape have a minimum of 800 residential units.

GOLF COURSES

Permitted uses	<ul style="list-style-type: none"> ➤ Residential dwellings (as per the applicable / prevailing Zoning Scheme). ➤ Clubhouse and office integrated. ➤ Mechanical workshop for golf course maintenance equipment. ➤ Buildings for bulk infrastructure, i.e. pumphouses, electrical substation only. ➤ Golf course. ➤ Driving range.
Non-permitted uses	<ul style="list-style-type: none"> ➤ Shopping centres ➤ Social services ➤ Retail activities ➤ Old age and Frail Care centres ➤ Service stations ➤ Group Housing or Townhousing

Density & Subdivision	<ul style="list-style-type: none"> ➤ Density permitted according to location in Peri-urban, Rural, Biodiversity or Agriculture Development zone. ➤ Minimum footprint size of 600m².
Special conditions	<ul style="list-style-type: none"> ➤ The proposed development will be subjected to the National Environment Management Act 1998 and Policy and Regulations and other legislation regulating the development of vacant land. ➤ Where residential components are added to existing amenities in rural areas, on condition that the recreational and open space / green lung function of such amenities is not compromised and that : <ul style="list-style-type: none"> i) the site does not fall within an area that has been identified as being of conservation significance (Biodiversity corridor) ii) the development or part thereof will not be located within the 30m development restriction area measured from the bank of a river, stream, wetland or any other natural surface water feature determined as sensitive by the Department of Water Affairs and Forestry (DWAF). ➤ No development below the 1:100 year flood line. No walls are to be constructed across this area. ➤ The water demand for the development is in accordance with the municipality's water services plan and that there is no risk of stress being placed on the municipal water supply. ➤ The area does not fall within the coastal zone as defined by relevant legislation, policies or plans (no development zone), or on primary dunes or on dune systems that are mobile. ➤ The development will not result in the removal of traditional access used by local communities. ➤ The development will not result in existing public and/or traditional access to and along the coastline being disrupted. ➤ The development will not result in or contribute to visually obtrusive or ribbon development along the coastline. ➤ No golf courses, golf estates, polo fields and polo estates should be located in the Biodiversity Corridors. ➤ The development will not negatively affect a river, natural spring or the catchment of a dam.

E 4.11 Madiba Bay Zone

Characteristics of the area:

- Large tract of pristine vacant land.
- Madiba Bay concession area.

MADIBA BAY ZONE

Permitted uses	<ul style="list-style-type: none"> ➤ Eco-based tourist activities ➤ Tourist facilities as follows : <ul style="list-style-type: none"> ➤ Non-permanent residential ➤ Restrooms ➤ Lecture rooms ➤ Gift shops ➤ Restaurants ➤ Game parks and zoo's ➤ Community gardens ➤ Theme parks for recreation ➤ Four x four trails ➤ Golf courses
Non-permitted use	<ul style="list-style-type: none"> ➤ Hotels ➤ Student accommodation ➤ Permanent residential ➤ Sportsfields or facilities unless compliant with ROD conditions
Density & Subdivision	<ul style="list-style-type: none"> ➤ No subdivision less than 1.8 ha beyond Schoenmakerskop coastal village area. ➤ Within Scheonmakerskop – no subdivision of residential units smaller than 1500m².
Special conditions	<ul style="list-style-type: none"> ➤ No development within 300m from highwater mark ➤ Comply with general conditions

E 4.12 General Conditions

The following are the conditions applicable to the amendment of land use status (rezoning, subdivision, departure) in all zones beyond the Urban Edge :

- All environmental management legislation applicable to the issuing of a Record of Decision shall apply to the application.
- All development to comply with the Nelson Mandela Bay Municipality's required standards and levels of infrastructure services.
- The provision of infrastructure services shall be constructed to the satisfaction of the NMBM or other official Regulating Authority (Home Owners Association Body Corporate), without any obligation to these authorities to render such services in any form whatsoever.
- All development to comply with the NMBM's Development Contribution levies applicable to the upgrade or provision of Bulk and link infrastructure. (Proposed and future Policies to apply).
- All access to developments to be provided by Metro or other official routes or currently registered servitudes.
- No development on slopes steeper than a gradient of 1:5 or 20% will be permitted.
- No development impacting on or affecting the natural skyline shall be permitted.
- Environmental sensitivities should inform the spatial layout pattern in terms of locality extent and positioning of cluster and space developments.
- The proposed zoning of any portions of land referred to in the application should accurately reflect the intention of the proposed land use. Applications should comply with the submission requirements promulgated in legislation and the applicable Zoning Scheme. the accurate use of zoning categories will inform the municipal rating system.
- Should rezoning and subdivision applications be submitted separately for the same property, environmental scoping / EIA's will be required.
- All land use management generating development will be subjected to the Development Contribution levy to be formulated by NMBM.
- All development proposals to include the Sustainable Community Principles and Methodology (where possible).

- Division of productive agricultural areas with agricultural potential shall only be permitted on merit and with well prepared motivations.
- No development is to be permitted on slopes steeper than 1 in 5 gradient and in the 1 in 100 year flood level. (No Development Zones).
- All river valleys and ground with slopes equal to or exceeding 1 in 5 should be accepted as no development areas.
- The applicant / developer is required to inform all the affected communities by means of advertisements in the press and public meetings.
- Heritage and visual impact assessments, undertaken by independent consultants will be required in accordance with the National Heritage Resources Act (Act 25 of 1999).
- The relevant authorisations must be obtained from the governmental bodies involved or who have an interest with regard to particular aspects of the proposed development.
- A Traffic Impact Assessment (TIA), appropriate to the scale of the development must be conducted during the planning phase of the project to the requirements of the municipality, the Provincial Department and National Department of Transport (if Necessary).
- The availability of public transport for staff must be established and if not available, proposals for the provision of sustainable private transport must be detailed in the TIA.
- Applicants are therefore encouraged to explore new technologies and design approaches that are founded on sustainable development principals.
- The scale and design of the development must not be disruptive to the sense of place of an area or neighbourhood.
- The visual impact of development will require careful attention. Visual impact from all public places or intended public places (e.g. roads, beaches) is assessed and mitigated.
- Walling, security features and entrances require particular attention. As a rule visually permeable fencing and walling must be used and entrances must include soft landscaping to prevent them from being hard and visually intrusive features.
- The development must be designed such that it blends into neighbouring areas, if the entire development is to be fenced.
- Fencing must not be placed in a manner that disrupts the functioning of “green” corridors.

- In respect of the design, construction and maintenance of buildings, including club houses and individual residences, the positioning of buildings in the context of the features of the site and the landscape.

- If a phased development is anticipated, the intention of land use and development of future phases should be illustrated on plans and reports.

Section

F

SECTION F : URBAN DENSIFICATION STRATEGY

F 1 Introduction

It is widely accepted amongst urban restructuring in advocacy groups and policy makers that the current local trends and the resulting spatial form has certain implications or consequences for the way in which our cities function. These consequences can be summarized as follows:

- Settlement patterns are grotesquely distorted with the poorest residents having to travel the longest distances, and wealthier people living closer to the most desirable economic and social opportunities;
- Cities are inconvenient and dysfunctional for the majority of citizens as they generate enormous amounts of movement with great costs in terms of time, money, energy, and pollution;
- Provision of efficient and viable public transportation is almost impossible, because of the low densities and the dispersed location of activities. This contributes to the huge levels of traffic congestion experience in and between cities;
- Installation and maintenance of engineering services is costly, which also has implication for the affordability of utilization of services. Settlements on the periphery tend to place larger burdens on government expenditure for service provision;
- Large tracts of land with agricultural and amenity potential has been destroyed and this tendency shows little prospect of coming to an end;
- Poverty and inequality have been worsened because of traveling costs and lack of opportunity and choice; and
- For many, cities have become hostile place in which to live offering few economic, social cultural, environmental or recreational opportunities.

Most large cities, especially vast metropolitan areas such as the Nelson Mandela Bay, are not uniform areas, but consist alternately of lines of concentration and areas of dispersement. Currently, the way in which our city develops unfortunately tends to favour dispersed development, and it is necessary to enhance the areas of concentration in order to correct the imbalance and to increase the total gross density within the existing built-up environment.

Compaction and densification is also not only a function of residential densities, but also of the location, intensity and typology of a range of urban functions and services.

One of the main goals of compaction and densification is to ensure that the standard of living that people enjoy will actually improve as a result.

Compaction and densification should therefore be viewed as a positive intervention in the urban structure.

F 2 Rationale and Objectives of Densification

F 2.1 Rationale

The rationale for densifying the city (i.e. increasing the gross overall density), stems from the following needs:

- Managing the spatial growth of the city,
- Increasing efficiency and cost effectiveness,
- Increasing convenience and quality for live,
- Creating the necessary population thresholds for economic growth and healthy businesses in specific areas.

It is important to understand that densification and compaction is not an end in itself, but a means to achieve an overall efficient, integrated and sustainable metropolitan area.

Densification should therefore not be done for the sake of densification, but to achieve a range of other goals.

F 2.2 Objectives

The broad goals of spatial interventions in the NMBM metro are to (1) develop Sustainable communities and (2) rectify the apartheid imbalances and fragmentation of society and urban form.

Densification is an important tool or means to achieve the above goals, as it addresses the question of where people live and how close they are to opportunities.

The objectives of densification and compaction are:

- **Minimizing /Reducing the Footprint of the City**

Cities transform natural land and alter the ecosystems in which they are located in a magnitude of ways. This in itself warrants a concerted effort to limit the impact on the affected area of land, as well as the ecosystems involved.

- **Preventing the Destruction of Agricultural and Environmental Sensitive Areas.**

Urban sprawl often eats into areas of high-value, pristine areas. These resources have to be protected from urban intrusion.

- **Improving the Use of Public Transport and Facilitating Pedestrianisation**

One of the key means of improving the use of public transport is increasing, residential densities in nodes and along public transport corridors, which has major implication for the way in which cities are being built and managed. The other is greater integration between the various entities involved in land use and transport planning.

- **Improving the Efficiency of Urban Areas**

More compact cities increases general accessibility, the level of convenience with which people can conduct their daily lives and reduces costs in terms of time, money and opportunity cost, both for local government as well as for its citizens. More compact cities in which infrastructure investment is planned are more efficient than cities in which this is not the case.

- **Reducing Inequality**

One of the objectives of intervening in the form and density of development of urban areas is to ensure greater access for all, especially the poor, to the benefits and opportunities of urban living – something that the current fragmented, separated city works against.

- **Increasing the Marketability of the City**

The physical urban environment of a city, including its quality and livability, plays a major role in its competitiveness. In addition to this the message that potential investors get from a city that seems under control and functions well is that it is well planned and managed in an integrated way.

The aim is to ensure a density of development that can facilitate sustainable economic development, job growth and income generation.

- **To adhere to legislative directives**

A wide range of Acts and policies have been brought forward by National Government urging local authorities to address the issue of sprawl and urban form. However, in practice, very little has been done to address these legislative directives.

F 3 Urban Densification Scenarios

A mechanism to guide the formulation of policies for appropriate urban form is the evaluation of various scenarios for development.

F 3.1 Business as Usual Scenario

F 3.1.1 Underlying philosophy

The “Business as Usual” scenario depicts how the NMBM Metro continues to grow according the development patterns of the 1960’s, 1970’s and 1980’s. A lack of concern for urban sprawl, consumption of agricultural land, increasing travel distances and the plight of communities living far from urban opportunities, characterized this period. This situation was particularly onerous on low-income residents located on the periphery of towns and cities because they lacked the financial means for private motor vehicles to aim access to facilities that could not be provided so far from existing development nodes.

This style of development characterized both high and low-income townships during this period. It remains a strong growth pattern notwithstanding the recognition that this kind of growth is not sustainable from transportation, economic and environmental points of view. This is because current development mechanisms/construction techniques, civil services strategic plans, development right approval processes, etc. are all geared to deliver this form of development. Without a strong change in policy this pattern of development will continue largely unchanged.

Evidence of the need for more effective policy is witnessed in the numerous low-income and some high-income suburbs that, although developed since 1995 in a very different political dispensation, continue to perpetuate the urban growth patterns of the 1960's, 70's and 80's. Thus, they exacerbate rather than solve the many urban problems associated with this pattern of development.

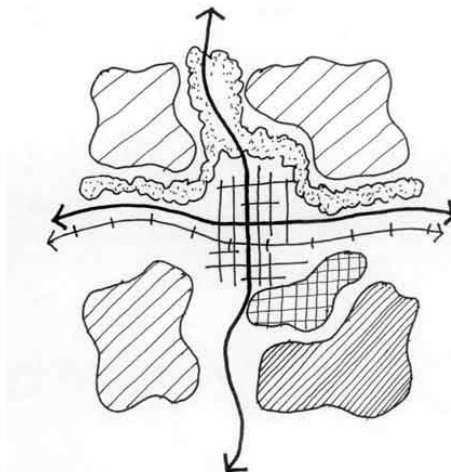


Figure 1: Deconstructed towns – South African towns typically consist of discrete urban cells segregated by race and land use around an historic core

These problems have been the result of the decanting of residential populations from the core to the outskirts of towns and cities. This has given rise to the so-called “doughnut” approach, i.e. empty core and built up periphery. This has led to a gradual decrease in overall levels of economic and social activity as populations emptied out of urban core areas giving rise to central “city centres” that largely function only during weekly working hours, and residential areas that are only active at night and on weekends. Outside of these times social and economic life continues at low and often unsustainable levels both in the urban centres and the suburbs.

The “Business as Usual” scenario forms the base condition against which the other densification scenarios can be measured. It is intended to reflect the scenario that would most likely occur if there were no changes to current development policy. It should be noted that this pattern of urban development has occurred all over the world and there has been universal recognition of the problems it has caused.

“Half a century of single-use development has given us some of our drabest, least lively and most disliked environments: soulless industrial areas, their ugly access roads lined by “anywhere” sheds, choked with commuter cars twice a day but otherwise largely devoid of human activity; enclosed shopping centres, their entrances barred from 6pm, throwing a dead hand over town centres at what could and should be their liveliest time of day; office blocks with long, blank podiums devoid of pedestrian-level doors or windows, sanitizing and destroying the vitality of the streets on which they have been foisted.” T Aldous, Urban Villages

F 3.1.2 The Scenario in context to the Nelson Mandela Bay Area

F 3.1.2.1 Methodology

This scenario was developed from two departure points.

Firstly, because this scenario is based on an historical approach an effort was made to adopt the planning philosophy of the 1960’s and 1970’s, as embraced in publications such as *Town Planning in South Africa*, by TB Floyd. This approach adopted the modernist town planning thinking of the 1950’s and 1960’s where land use activities were strictly separated from one another. Social classes were also strictly segregated, and in South Africa this was extended along racial lines.

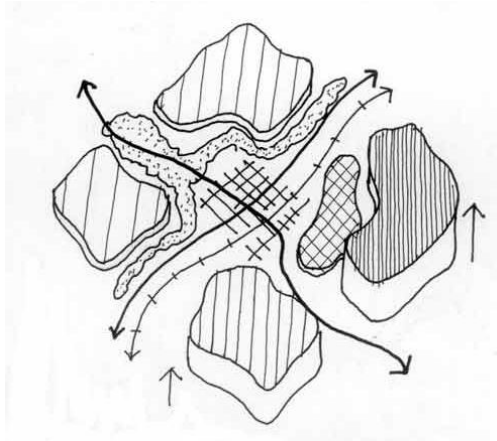


Figure 2: Rapid urbanisation combined with a separate development philosophy results in unbalanced growth, usually of the most economically, socially and spatially marginalized,

The effect of this approach was that each socio-economic or racial groups' growth was accommodated by urbanizing vacant land on the outskirts of the town adjacent to that community's existing settlement, only further and further away. This resulted in the outward growth pattern, internationally known as urban sprawl. Motherwell, Kwa Nobuhle, Khayamandi, Bloemendal and to an extent Kwadwesi and Kwamagxaki are glaring examples of this phenomenon.

During the 1960's and 70's there was also a desire to maximize personal residential space, and plot sizes were made as large as possible. Low-income housing erven often ranged in size from 300 – 400m², areas which, today, are seldom available in the Metropolitan area even to middle-income housing. Thus, urban growth, already consuming large tracts of land by virtue of its peripheral location, in addition did this at an increasing rate due to the large plot sizes.

This approach to development hardly concentrated on the redevelopment of vacant land within the core of existing settlement nor on redevelopment of existing low-density urban areas. It rather focused on large Greenfield sites on the periphery. Thus this scenario identifies land for further development almost exclusively on the outskirts of the town.

In the "Business as Usual" scenario densities in various areas range from 10 to 30du/ha. 10du/ha corresponds to an average size of 600m², similar to the sizes of plots recently developed in 30du/ha corresponds to plots of 200m², similar to those planned in Kayamandi Ext Phases 1,2 and 3, Kwanabuhle Ext 9 and 10, and Chetty Phases 5, 12,13 and 15.

Significant interest is developing in the non-state subsidized emerging and middle income housing sectors. Large tracts of vacant land on the built up urban periphery are being identified and planned for this market. Similarly the NMBM is inundated with applications to rezone and develop residential estates on large tracts to vacant land in the peri-urban and rural areas of the Metro. These land pockets are identified and sourced at random without consideration of the natural environment, availability of bulk and link services, official access or even the market requirements. This tendency directly supports the “Business as Usual” scenario as peripheral and random selection of Metropolitan land is being sourced for housing with varying density.

Caution should prevail to implement the Business as usual scenario in future

F 3.2 Restructuring and Integration Scenario

F 3.2.1 Underlying philosophy

This scenario is based on the need for a different approach to directing the growth of the Metro that attempts to avoid the problems of the urban sprawl “Business as Usual” approach to development detailed in the previous paragraphs of the report. Thus, where possible rather than spreading outwards and contributing to spatial marginalization, this approach investigates opportunities for development within the periphery of the town. In particular, it looks for opportunities to strengthen weak or erratic economic activity and transport patterns. It seeks better use of vacant and abandoned land within and beyond the urban periphery.

This approach also attempts to accommodate the likely growth within the boundaries of the Metro rather than assuming that the city’s future growth can be diverted to the surrounding rural areas.

This pattern recognizes the existing open spaces as, on the whole, important assets to the long-term future of the city, and which, therefore, should largely remain undeveloped. However, this scenario does propose that as many people as possible should derive the benefits of such open space. This can be achieved by intensifying development around such open spaces. The philosophy underlying this approach is largely based on principles of the “Urban Village” and “New Urbanism” movements. These recognize the importance of denser urban centres, where uses are mixed to provide the greatest number of cross cutting opportunities, and where activities, as far as possible, are within walking distance of peoples’ homes.

In this philosophy walking distance, rather than vehicle travel time, becomes the main distance parameter.

“The message is clear..... As density levels are increased – even to moderate levels of 40du/ha – 60duha – the land take diminishes rapidly. More people are close enough to communal facilities to walk, and an efficient bus service can be made viable. Moreover, the critical mass of development contributes to the informal vitality of the streets and public spaces that attracts people to city centres and urban neighbourhoods, as well as contributing to energy efficiency.”
Urban Task Force. Towards an Urban Renaissance (1999)

This philosophy takes the form of a physical restructuring of the Metro through the insertion of higher-density and more multi-storeyed development in existing areas. The recently completed Sustainable Planning Guide (June 2007) of the NMBM supports the notion of density and mixed developments by densification:

- Densification creates more compact structures that improve access to work, services and public transport. It also provides for a more efficient use of infrastructure.
- Densification will be achieved through reduced erf-size, alternative housing types and mixed development. Within existing areas densification will include infilling and redesign.
- There is a need to promote awareness of the costs of low densities and the benefits of lower development and service costs in more compact urban environments.

Socio-economic restructuring can also flow from this model. Because a more compact site and building form is promoted, small pieces of open space, previously considered unviable for the development of larger plots, can now be considered.

This approach holds the potential to achieve socio-economic balance over much smaller areas than only at the level of the Metro as a whole. This would have the effect of bringing opportunities closer to lower-income residents, reducing their travel burdens, and generally making the city fabric easier for them to live in.

However, this approach must also take into account the sensitivity surrounding the socio-economic interface that concerns middle and upper income residents most South African towns and cities. At present there is often a social and an economic resistance to socio-economic integration.

In particular, the banks that hold mortgages over many residential properties tend to reduce the collateral value of privately owned properties if they feel they are too close to informal settlement or housing subsidy projects.

This in turn creates heightened sensitivities about the location of lower-income housing by middle and high-income residents motivated not so much by a desire not to mix, but by a concern about their property values. These sensitivities, although possibly overstated in some cases, nevertheless remain very real perceptions that must be fully considered in particularly when locating low income housing projects.

It is important to emphasize that restructuring and integration does not imply a willy-nilly scattering of high density, low and medium income housing randomly through all urban areas of the Metro. Such an approach is unlikely to achieve the benefits it seeks and may well create considerable resistance from all sectors of the community.

Sites for densification chosen must have a clear rationale, they should be able to demonstrate how they are contributing to restructuring. For example:

- By reinforcing public transport routes and reducing the demand to use private motor vehicles;
- Improving surveillance onto existing public open space;
- Increasing the economic viability of business nodes; and
- Strengthening the catchments of public facilities such as schools, libraries and clinics.

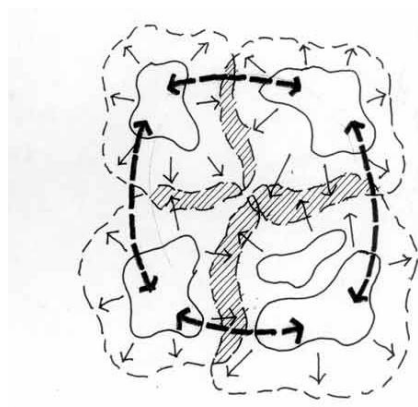


Figure 3: Inter-relationships: Sensitive interfaces between different areas of towns and cities must be carefully resolved so that inter-relationships between them can be maximised

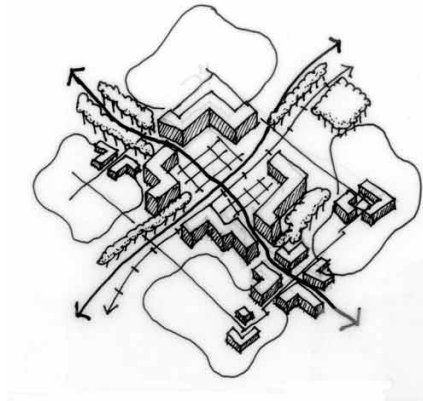


Figure 4: A new spatial order: A new 3-dimensional spatial order is required to re-integrate and improve the social economic, environmental and aesthetic performance

F 3.2.2 The Proposed Scenario in the context of the Nelson Mandela Bay Area

The method considered the following aspects:

- Strengthening the existing major business routes and commuter routes in the Metro by the addition of high-density development alongside;
- Intensifying development around existing public open space where appropriate. Intensification refers to the subdivision of the existing appropriately located and designed (erf form) Brownfields erven.
- The greenfields development of certain strategic sites, which, although located on the periphery of the city could nevertheless be easily integrated into either the rail or road transport system. Environmental considerations rather than cadastral boundaries informed the perimeters of such external Greenfield sites.

F 3.2.3 Residential Density

These range from 75 du/ha for high-density, low-income housing through to 20du/ha as the lowest density benchmark in the more affluent areas and 12 du/ha in high income areas. A nett density of 75du/ha equates to plot sizes of 80m², 20du/ha- 300m² and 12du/ha to 600m².

Further research may lead to the conclusion that the density range of 25du/ha to 40du/ha gross can only be achieved in relatively small areas.

The aforementioned parameters serve as the desired density for the residential component of the Metro. Planning practitioners should apply these guidelines in the preparation of Local Spatial Development Framework Plans identified for the various Sustainable Community Units. It may be that when the larger area or various or combination of SCU's are considered, the gross density of the whole will be lower than the anticipated policy.

F 3.2.4 Summary

The scenario proposes a relatively radical restructuring of certain parts of the urban fabric of the Metro.

The scenario also proposes that, existing open spaces are retained and not developed. Rather, development around them is intensified so that more people are able to enjoy access to these spaces. Specific reference is made to the higher density areas of the Humewood and Summerstrand Beachfronts, where large continues open space systems should be retained, but higher density residential be permitted adjacent to the open space system. Intensification is also proposed along many of the existing major transport routes of the Metro in an effort to increase the support of public transport services, businesses and community facilities that are best located along these routes. Of specific significance is the mixed land use corridors identified by the NMBM Integrated Transport Plan updated in 2006.

In preference to broad brush zoning this scenario identifies with some precision the corridors that should be permitted to intensify or redevelop. This is done in an effort to bring certainty as to which corridors should be developed and which shouldn't. This is an effort to avoid the ambiguity that often lead to run away pressures for development arising from one or two apparently similar developments that are then used as precedent for the development of the rest of the area. This has particularly been the case in Gauteng and creates a constant pressure in the suburbs in Western Cape and Eastern Cape urban areas.

The scenario identifies land for development both inside and outside the current urban edge on the basis that it will be politically difficult to gain support for a high level of socio-economic integration that sees low-income development scattered within the Metro. This, in some cases land for low income housing is identified on the periphery of the urban fabric. Nevertheless, the scenario does attempt to increase so-economic integration.

The processes required to achieve intensification are also already occurring and can easily be mobilized in new areas through well publicised policy directives that indicate the Metro support in processing appropriate applications.

Many of the mechanisms to achieve this scenario are already being embraced by developers and property owners, - redevelopment of large plots, use of smaller land areas per dwelling unit – resistance is likely to be experience from those quarters opposed to reductions in private household space. This will require careful work-shopping and extolling of the benefits of properly designed and usable public space increased support thresholds and reduction in urban services and administration costs.

Lastly the success of the scenario will be dependent on excellent spatial planning and design as much of the resistance stems from poor designs where integrated landscaping functional urban design, including roads and services overrule aesthetics and problems of safety and security.

The urban structuring elements play an extremely important role in implementing the various urban growth and development scenarios. The relevant structuring elements include corridors, activity streets, nodes and green structures or the Metropolitan Open Space Systems.

F 4 Principles for Densification

The principles and sub-principles which will guide densification and compaction with the Metro are as follows:

- **Densification must contribute to the overall structure and functionality of the metropolitan area in that it takes place in a balanced, focused and structured way:**
 - Densification should concentrate around specific strategic areas.
 - Density levels should be linked to the functional characteristics of various parts of the city
 - Densification and compaction must be applied in such a way that diversity and unique spatial characteristics are maintained within the city.
 - Density should relate to surrounding land uses.

- **Appropriate higher density housing opportunities at appropriate locations must be provided for all income groups**
 - Create a range of housing opportunities and choices.
 - Social integration must be promoted throughout the metropolitan area.

- **Specific areas of opportunity or need for restructuring should be identified (areas that should not be densified for specific reasons should also be identified).**
 - Areas of opportunity should possess real current of future potential for growth and development and such potential should also be desirable from a restructuring point of view.
 - Re-development should be promoted within existing built-up areas as an antidote to greenfields developments, these should be located adjacent to corridors and suitable open spaces and not permitted at random.

- **Areas targeted or densification should be treated as whole environments.**
 - Investment in infrastructure, streetscape, open spaces and social facilities should ideally precede higher density developments.
 - Ensure the development and retention of quality living environments, which means that an indiscriminate application of densification should be avoided.
 - Promote mixed land uses in areas earmarked for densification (corridors and open spaces).
 - Developments should promote safety and security in an area through the creation of defensible spaces.
 - Provide alternatives to driving, such as walking or cycling, within densification areas.

- **Areas targeted for densification should be well served by public transport, or have the possibility to be well served by public transport in future.**

- **Preserve and enhance open space, farmland, natural beauty and critical environmental areas.**

- **Encourage community and stakeholder collaboration.**

- **Retain, enhance and encourage cultural assets.**

F 5 Urban Structuring Elements

The four structuring elements identified are **Urban Nodes, Activity Corridors and Activity Streets, the MOSS** and the **Urban Densification Zones**. They are common elements that should operate at a variety of levels/scales from the metropolitan to the neighbourhood level. These four elements must be considered to be acting in a mutually reinforcing manner.

F 5.1 Urban Nodes

F 5.1.1 Description

Urban nodes or centres are concentrations of urban development that locate at accessible locations such as modal interchanges and the intersection of public transport routes. They are dominated by mixed-use activity including significant investment in public facilities as well as private sector investments in commercial, retail and manufacturing activities. High residential densities are also a significant component of urban nodes. Nodes, while carrying high volumes of public and private transport should be pedestrian-scaled in design and function. Nodes will comprise varying mixes of these activities and thus will be different in character from one another.

F 5.1.2 Types and Character of Nodes

▪ Metropolitan Nodes

The term metropolitan node refers to a node that is of such significance that it impacts on the metropolitan region as a whole. Existing (or potential) size alone is not enough to warrant such a designation. The node must also be in such a location that it has a critical role to play in relation to the region as a whole. Examples are:

The Port Elizabeth and Uitenhage CBD Areas.

Although there are many nodes within the metropolitan region, few warrant metropolitan node designation in terms of scale, impact, diversity and agglomeration of function (Facilities, services and economic activities). There is, in this instance, a strategy to identify those nodes of metropolitan significance (mature or proposed), where the effect of public investment is likely to have the maximum advantage. If the designation is spread too broadly the node's effectiveness will be severely weakened. It is also necessary that a major node be located in term of reasonable traveling distance, to serve and benefit the maximum number of people in the surrounding areas.

- The positive characteristics of Mature Metropolitan Nodes should be enhanced mainly through the use of appropriate development control mechanisms.
- Higher residential densities in the order of 100 du/ha gross, and the development of affordable housing on state-owned / vacant land in and around Mature Metropolitan Nodes should be actively promoted.

- **Sub-Metropolitan Nodes / Local Nodes**

There are areas that function as mature sub-metropolitan nodes or which have the potential to be developed as sub-metropolitan nodes. Modal interchanges, depending on their role and use, have the potential to be developed as nodes. In particular, where modal interchanges are located within a corridor, there is potential for nodal development including health, educational, recreational, commercial and other facilities. These sub-metropolitan nodes, in contrast to metropolitan nodes, have a lower level of activity and do not support a wide range and high order of goods and services. Identification of these nodes must occur at local and sub-regional planning level such as the preparation of a Local SDF.

Policy: Mature and Proposed Sub-Metropolitan Nodes should be developed, as appropriate, at the initiative of local authorities and communities. Sub-metropolitan nodes should be identified in appropriate local SDF's. These must reinforce the metropolitan nodes and corridors.

- **Neighborhood Nodes**

These nodes or mixed use developments occur at neighborhood level. They are different in nature and extent and highly dependent on the socio economic characteristics of the community and neighborhood or threshold they serve. Local nodes may develop in isolation and are not dependent on the mixed use land use activity generated by the linear or corridor development. The residential densities and mixed use is structured and formulated by the surrounding character of the neighborhood they serve.

If linked or integrated with corridor development, open ended short low intensity corridors are developed radiating from these local nodes. Local nodes must be identified and reinforced by the local spatial planning level. Density may vary between 20du/ha – 40du/ha.

- These nodes are the higher intensity development areas in Sustainable Community Units comprising of primarily stable residential character.

F 5.2 Activity Corridors or Linear Zones

The promotion and development of activity corridors in specific location is seen as an important element in the overall framework aimed at overcoming these problems. The corridors are viewed as a critical part of the new planned regional structure within which intensification and integration occurs.

F 5.2.1 Metropolitan Activity Corridors

The term Metropolitan Activity Corridor refers to the limited number of activity corridors of which the scale, character and location are, significant to the metropolitan region as a whole.

Local equivalents of a slightly different type to metropolitan activity corridors also exist at local level. These are referred to as activity streets.

Metropolitan activity corridors fulfill the following function:

- they link major urban nodes for example, Port Elizabeth CBD to Uitenhage and Despatch CBD with each other or with other nodes of metropolitan significance;
- they include existing or potential areas of mixed land use where residential, commercial, industrial and recreational activities occur in close proximity;
- they have a public transport system supported by high population concentrations which can sustain frequent services;
- they have a variety of economic activities, which thrive on high levels of passing trade, easy access, economies of agglomeration and visual exposure;
- they support the growth of economic activity at major modal interchanges where access is the greatest; and
- they also have a wide range of economic, social welfare, education and sporting facilities which can be shared by a large community because they are accessible by foot and public transport.

One of the most important principles concerning corridors is that as many people as possible should eventually live within walking distance (a maximum of one kilometer) of an existing or potential public transport system. The activity corridor's immediate zone of influence covers areas within walking distance of railway stations (actual location) and walking distance from the major spine road.

Within this zone there should be higher residential densities.

The basic elements of an activity corridor:

- The activity spine forms a continuous link between nodes.
- It is supported by a free flowing transportation route, freeway, or arterial.
- Approximately one block on either side of the activity spine is high density (100 du/ha or more) mixed use development. (not more than 2 blocks).
- Up to 1km on either side of the spine mid-range densities (greater than 40 du/ha) should be allowed.
- Beyond 1km in the low-density suburbs, less than 40 du/ha gross should apply. This area should be contained by the urban edge.
- The intensity of a corridor is determined by the general character of the surrounding urban area. stable urban areas where little mixed land use prevails (Residential areas and office areas should not be permitted to accommodate a sudden change to mixed land use to establish activity corridors).

F 5.2.2 Metropolitan Activity Spines

At the centre of the metropolitan activity corridor is the metropolitan activity spine which is a major road. The spine includes the adjacent development of one-block depth. These spines enable high levels of accessibility and carry road-based public transport services, which support most of the businesses and community activities in the activity corridor.

Important requirements for metropolitan activity spines to function correctly are:

- They must be routes of metropolitan significance;
- They must be supported (currently or eventually) by high residential densities (of up to 100 du/ha gross);
- They must make direct and continuous connections between existing or potential metropolitan nodes of centres i.e. have a strong origin and destination characteristics. Discontinuous routes will not be effective;
- They must be existing or potential major routes for busses and minibus taxis, as well as private and commercial vehicles. However the emphasis should be on traffic calming, and enhancing pedestrian safety and access to adjacent activities, rather than on high-speed through-routes.
- They must be supported by higher speed, longer distance transport routes i.e. arterial and/or freeways; and

- Mixed-use development including commercial, residential, educational, health, recreation, sporting, cultural and light industrial development should be encouraged as appropriate.

It is vital to stress that it takes time for activity spines to develop. Corridors can also display different types of development, but support the same spatial principles. Activity spines are largely recognizable as public transport routes linking major nodes or centres. It is feasible for a developing activity spine to pass through informal settlements as well as high- to middle-income residential areas.

F 5.2.3 Urban Densities Supporting Corridors

- Densities play an important role in the successful functioning and efficiency of urban areas. The higher the density, the greater the thresholds to support more shops, facilities and public transport system.
- The positive effects of high densities can be further improved by the channeling of flows of people along a few selected routes, i.e. activity spines, and activity streets.
- The highest densities of 100 du/ha should occur within walking distance.
- Densities, however, decrease as the distance from activity spines increases.
- Densities of 100 du/ha gross should be promoted in areas within approximately on-street block (or 100m) of activity spines. Densities of between 100 du/ha and 40 du/ha gross should be promoted within one kilometer of the spine.

High density does not imply high rise. It is possible to have more than 100 du/ha using one to four-story units. This is as high as necessary to go if people do not wish to live in high-rise apartments (though high-rise need not be excluded in suitable locations, such as urban nodes) and residential areas where high rise buildings are prevalent.

Higher densities should not necessarily mean low-income housing. In many instances higher density housing emerges in response to marked demand for good views, locations, open space and residential character.

Sociological impact of higher densities:

- The importance of design, incorporating the provision, proper use, maintenance and management of public spaces and facilities.

- In proposing higher densities, the importance of attractive and appropriate design, good location, and ongoing commitment by the Metro in providing quality public spaces for recreational and other activities.
- The management and maintenance of services, facilities and public spaces. These factors will largely constitute the desirable functioning of higher-density developments within a diverse range of other or existing residential areas.
- Sufficient affordable housing must be made available to redress the overcrowding and housing backlog. Higher densities and integrated mixed-use development in selected areas will support this. Higher density will also partly depend on a housing policy which enables the development of a much greater range and choice of housing and accommodation.
- On the urban periphery there is a demand for lower densities. This option should be available within limits but should also be controlled or incorporated into the urban edge and by related policies. It is more desirable that there be low density interface with agricultural development.

F 5.2.4 Activity streets and Sub-Metropolitan nodes

- Sub-metropolitan nodes play an important role in strengthening activity corridors and as employment centres where decentralized markets and other supporting urban activities could be located. Accessibility by means of public transport is a vital element for these nodes. They can also provide an important hub for road-based public transport facilities. Local-level planning will be required to determine the desirability of these routes and nodes (LSDF).
- **Activity Streets:**
Activity streets should be encouraged to develop on the edges of suburban neighborhoods onto which local community facilities are exposed. Activity streets will be the preferred location of a full range of lower-order facilities and services which are supported and shared between communities. It will provide for greater accessibility to an increased range of commercial opportunities, facilities, services and employment opportunities for suburban residents not served by a metropolitan activity corridor. It may extend and connect to a metropolitan activity spine. At the point of connection between the activity street and metropolitan activity corridor a sub-metropolitan node must develop. The activity street may develop along a route not connected to an activity corridor but functions as part of the total road network. An arterial road may change its nature and develop into an activity street in part before changing back into an arterial. Activity streets will be the focus of public transport services such as bus, taxi and rail services.

These routes and environments should also be supported by minor roads and by a local network of cycle routes and pedestrian pathways.

The principle of businesses and social facilities clustering along major routes and serving passing trade does not apply only to activity spines and metropolitan corridors. The principles can operate along any urban road that attracts enough passing trade to make businesses and community facilities viable. Not all roads warrant the same high-capacity public transport systems as metropolitan activity spines. Activity streets play a vital function in linking previously isolated communities at the local level, as well as supporting and easing movement along the activity spines and mobility routes. Activity streets provide appropriate locations for small and informal enterprises, residential densities of not more than 40 du/ha and are also important for road-based public transport routes.

In the NMBM Metropolitan context, *“Roads of Metropolitan Significance are seen as activity streets. Densities along these roads must not exceed 40 du/ha (Gross Density).”*

It is important for local planning to identify smaller scale routes (known as activity streets) which can provide important opportunities within local areas and serve to integrate activity corridors and urban nodes into the surrounding area.

The locality and desirability of Activity Streets are to be established at LSDF level.

F 5.2.5 Biodiversity Corridor (MOSS)

Within cities and towns it is important to create a network of open space to complement the built fabric of the urban area. This provides the urban environment with variety, character and a sense of visual relief. Such a network should also permit urban residents and employees a chance to enjoy open space and nature without having to travel extensive distances.

The creation of such a planned system is an integral structuring element of the Metro. It is important to recognize that while floodplains could form an integral part of Metropolitan Open Space System (MOSS), it is necessary to have specific policy relating to its role as a floodplain. It may be informed by other environmental considerations, but in order to be effective, its function must be legible, specific and must be integrated to form corridors or a continuous system. MOSS may link, at its extremities, with the urban edge and the rural/natural space beyond.

MOSS may also prohibit the development altogether, or alternatively permit the development only if it includes an area of open space in the proposal. The Strategic Environmental Assessment Report currently underway determines and regulates the position status and development policy for the amended MOSS boundary.

The purpose of the Biodiversity Corridor (MOSS):

- The creation of a planned open-space system within Metro areas is considered important because it enhance the overall quality of life of urban dwellers.
- MOSS is intended to promote general amenity and recreation (both active and passive) for the enjoyment of the local population and also tourists.
- It has an important ecological role to play in providing species with habitats and protecting bio-diversity in the Metro.
- The MOSS is also intended to promote nature consciousness through direct experience and environmental education.
- MOSS could play an important role in eco-tourism and traditional plant use.
- MOSS can also contribute to improving security in urban areas by gradually bringing derelict, unprotected and unused open spaces into the system.
- Development applications which clearly run counter to the realization of MOSS should be discouraged.
- Local Spatial Development Framework plans should include specific policies to promote public access to MOSS sites that have recreational value. Consideration of the relationship between recreational use and conservation of sensitive and unique environments.
- Supporting legislation by Local Metro Councilors will be fundamental to the enhancement, protection and development of the MOSS and densification policies.
- Establishing mechanisms to ensure the appropriate management of MOSS.
- Encourage developers to maximize the potential of MOSS and create places of quality.
- Ensuring the co-ordination of land-use and transport planning to maximize access and safety.

Section

G

SECTION G : REVIEW OF THE CURRENT URBAN EDGE

G 1 Introduction

The Urban Edge is a conceptual boundary delineating the urban area within which urban development will be enabled. The urban edge boundary is not a physical element, but a demarcated line identified by the NMBM as having a spatial differentiation in proposed land use intensity and less intense rural development. The current urban edge or “*urban fence*” as described by the NMBM MSDF forms a “*hard edge*” and a “*soft edge*” around the built up areas of the Metropolitan area. The “*hard edge*” hugs existing built up urban form whilst the “*soft edge*” follows an arbitrary boundary separating vacant land to be utilised for infill development from Agriculture Zone land intended for preservation or limited development.

The following informants served as guiding principles in their view of the existing urban edge:

- The demarcated boundary of the existing urban fence as contained in the NMBM SDF April 2006.
- The principles and proposals made by the draft Rural Land Use Management Policy illustrated in Section E of the Report.
- The Urban Densification Policy and formulating principles as detailed in Section F of the Report.

The existing urban fence (MSDF April 2006) was loosely defined and difficult to assess as no mention is made of the physical elements, boundaries, or planning rationale adopted in demarcating the “fence”. Changes in urban form, policies and physical conditions rendered the current urban fence to be incorrect, outdated and different to physically define.

In order to scientifically and accurately assess, demarcate and motivate the proposed urban edge, criteria for the establishment of the edge was identified. The following elements and approach forms the basis of demarcating the proposed urban edge.

G 2 Hard Edge

A hard edge is demarcated on the development line of an existing urban area such as the outside of a residential neighbourhood, road, railway, powerline or any other surveyed and serviced erven intended for high intensity development. Cadastral boundaries of erven or servitudes forms this edge.

G 3 Soft Edge

Where no development occurs due to the fragmentation of urban areas, a soft edge was demarcated to permit gradual transition from high intensity erven and land uses to low intensity rural use.

G 4 The proposed amendment to the existing urban edge

In order to clearly demarcate or establish the new boundary, cadastral boundaries, steep slopes, undulating terrain, proclaimed resources, demarcated or cadastrally surveyed boundaries of officially approved future growth areas and future transportation networks planned by the NMBM were used as the urban edge boundary proposed in the document.

Minor amendments to the existing urban edge are proposed. The following recommendations are made:

- **The southern boundary adjacent to the Madiba Bay Concession Area**
The cadastral boundary of the Madiba Bay concession area was recently calculated. Given the proposed loosely defined scale and nature of development proposed for the concession area, the area cannot be supported as urban development. A special rural zone is formulated for the Madiba Bay Concession peri-urban area. The calculated co-ordinates form the urban edge for this section.
- **Infill development out of Lorraine**
The pressure to develop a portion of the Heatherbank Area located to the south of Lorraine was investigated and included in the urban area of the NMBM. In order to contain and manage the future development of this area, the urban edge boundary was extended, to permit higher density infill development integrating existing built up urban forms and neighbourhoods.
- **The Kragga Kamma Road amendment**
Development pressure along a portion of Kragga Kamma Road has forced the NMBM to review the urban edge in this area. A hard edge is adopted to incorporate the proposed development area into the Metropolitan area. The Kragga Kamma Road forms the outside boundary of the proposed development of subdivision.

- **The Wedgewood development node**

The Wedgewood Golf and Lifestyle Estate approved by the NMBM will form a particular node on the urban periphery of the Metro. The scale, extent and type of development permitted in the Estate, and emerging residential and industrial development between the Estate and the Kuyga Settlement enforced the amendment of the edge to incorporate these land uses within the urban area. This amendment adds approximately 1376 ha to the urban area.

- **West of Kwanobuhle**

A small portion of land adjacent to the R334 regional distributor located to the west of Kwanobuhle is included in the urban edge. The western cadastral boundary of this area earmarked for use land development forms the urban edge amendment.

- **North of Uitenhage**

The boundary of the urban edge between Uitenhage and Motherwell is realigned to incorporate the future transportation arterial planned for the NMBM area. The outside boundary of this proposed arterial will therefore form the northern urban edge boundary of the Metro. This enables approximately 1067 ha of land to be utilised for higher dense urban development.

- **Readjustment of Coega IDZ**

The urban edge boundary was amended to incorporate the cadastral boundary of the Coega IDZ. This therefore enables the Coega IDZ to form part of the urban area.

- **Coastal Villages**

The previous MSDF prepared for the Metropolitan area did not incorporate or include an urban edge for the coastal villages hugging the southern Indian Ocean coastline. These areas have unique character which should be preserved and managed. In order to enable future development to harmoniously integrate the Beachview, Seaview, King's Bay coastal villages, an urban edge has been demarcated to integrate these coastal villages in a uniform fashion. The cadastral boundary adapted to the north of the villages has been identified. This will enable approximately 265 ha of land to be developed in a specified manner. Guidelines for developing the coastal villages will regulate this development.

In summary, specific physical and natural determinants and elements make up the urban edge of the NMBM area. These elements include statutory cadastral boundaries, specific topographical features, movement networks (including roads and railway lines), and the official boundaries of development areas identified and accepted by the NMBM. These elements will enable all land use management practitioners and developers to identify the boundary of the urban edge. - Refer to Maps 1a, 1b and 1c illustrated in the annexure to the document.

Section

H

SECTION H : ACRONYMS, ABBREVIATIONS AND GLOSSARY

H 1 Acronyms and Abbreviations

CBD	-	Central Business District
DEDEA	-	Department of Economic Development and Environmental Affairs
DU / HA	-	Dwelling Units per Hectare
EIA	-	Environmental Impact Assessment
DFA	-	Development Facilitation Act
IDP	-	Integrated Development Plan
IEM	-	Integrated Environmental Management
LSDF	-	Local Spatial Development Framework
LUPO	-	Land-use Planning Ordinance 15 of 1985
MOSS	-	Metropolitan Open Space System
MSDF	-	Metropolitan Spatial Development Framework
NMBM	-	Nelson Mandela Bay Municipality
SDF	-	Spatial Development Framework
SEA	-	Strategic Environmental Assessment

H 2 Glossary of Terms

Certain concepts and words used in this report have specific meanings and understandings as explained in this glossary.

- **Accessibility**

Accessibility in the South African context needs to be defined in terms of people moving on foot, and people using public transport.

- **Activity Corridor (Nodal and linear activity areas connected to public transport)**

A linear zone of development flanking a central public transport route, where public transport facilities, mixed land uses, and people are focused. A strong relationship between the transportation route and the surrounding land uses exists. The width of the activity corridor varies depending on the local context and local authorities needs to a maximum of 10 -12 minutes walking distance. A variety of social and employment opportunities are integrated with high-density residential functions and the residents have access to a wide range of activities and facilities and a good public transport system, especially in the proximity of the central transport route. Urban nodes and higher order intersections from points of concentrated activity along the length of the corridor and provide the impetus for growth and movement. A fully established activity corridor includes a central road based public transport route and a supporting railway and mobility route.

- **Activity Spine**

The core of the metropolitan activity corridor is a major road or high street on which most of the road-based public transport services run and on which all activities are focused. An activity spine includes the high-density development immediately adjacent to the central road (one block on both sides). The activity spine is a major route that connects one or more metropolitan nodes and support and gives access to most of the mixed-use development and community activities in the activity corridor.

- **Activity Street**

A local road that displays the same principals of linearity, continuity and accessibility as an activity spine, but it provides lower levels of intensity, opportunity and market threshold. It does not need to connect metropolitan nodes, but should reinforce the sub-metropolitan/local nodes and activity corridors, and strengthen the tertiary road network. Activity streets frequently connect an activity spine to a supporting mobility route. These roads attract enough passing trade to provide important opportunities for local business and community facilities.

- **Biodiversity**

The variable among living organisms from all sources including, terrestrial, marine and aquatic ecosystems and the ecological complexes of which they are part and also includes diversity within species, between species, and of ecosystems.

- **Cluster and space**

‘Cluster and space’ refers to Clustering of residential activities and consolidation of ecological spaces.

- **Consolidated open space**

Refers to open space which is not fragmented into small pockets and not subjected to the degradation of the ecological integrity of the open space as a result of the so-called “edge effect” or decreasing ecological processes.

- **Corridor Development**

Spontaneous or planned linear development along activity spines which link metropolitan nodes. Corridor development differs from ribbon development in that ribbon development occurs in an uncontrolled and piecemeal fashion along major transport routes on the urban periphery and contributes to sprawl.

- **Cultivated**

An area which is still perceived as predominantly “green” but is no longer in its natural state and has been developed by human intervention and care for human use.

- **Densification (Residential Intensification)**

The process whereby residential densities (the number of dwellings per hectare) are increased in a planned and meaningful way within the existing boundaries of a specific area.

- **Density**

The intensity of development and human activity within a certain spatial area, as a function of the size of the area. Gross residential density is the number of dwelling units divided by the total size of the area. Net residential density expresses the number of dwelling units divided by the size of the area that is taken up by residential use only.

- **Development**

A broad term which refers to actions taken by individuals, communities or government aimed at improving quality of life. These actions, as reflected by the level of prosperity and literacy, find expression through the socio-economic and man-made environment. The concept should not only be seen from a physical perspective (which refers to the morphology, structure and growth of a city or town), without consideration of the social, cultural, economic and political dimensions attached to the concept.

- **Development Plan**

A development strategy contained in report form, with maps and programming schedules, and that has as an objective the ordering and guidance of the existing and projected physical and spatial development for a particular period by way of an appropriate structure plan, inclusive of the programming of such planning in terms of time and funds.

- **Development Rights**

The rights linked to land according to which the owner can develop the property or land.

- **Development Strategy**

The strategy prepared for any area or issue, which needs more specific policy to ensure its development or preservation.

- **Ecological sensitivity**

Sensitivity of vegetation habitat types mapped digitally onscreen from 1m resolution orthophotos, assessed using a pair-wise comparison matrix.

- **Efficiency**

The most economical and viable means of achieving a desired result. In spatial terms it can be seen as the use of resources such as urban land, energy and finance in order to increase the level of productivity within the area concerned and achieve the greatest level of public benefit.

- **Environment**

The aggregate of surrounding objects, conditions and influences that have bearing on the life and habits of people and any other organism or collection of organisms. In this report the word environment refers to the natural environment only.

- **Environmental Impact Assessment**

The process of collecting, organising, analysing, interpreting and communicating data by which the impact of a project on the environment is determined.

- **Environmentally Sensitive**

A development is environmentally sensitive when it utilises the local resources and circumstances without exerting a negative influence on the surrounding natural or building environment.

- **Estates**

Can be described as exclusive development containing a number of dwelling units and associated land-uses, that may be marketed as either 'golf', 'equestrian', 'nature', 'country living', within a secure environment.

- **Golf Course**

is an area of land used for playing golf or a recreational area primarily used for playing golf with a minimum of nine (9) holes. It consists of a large landscape area for playing golf and a club house.

- **Golf Estate**

Is a development that has a golf course and includes residential units.

- **Higher order**

In a planned hierarchy of places, higher order places and activities are more accessible than lower order ones so they tend to have a wider threshold, be busier and offer a wider range of urban opportunities.

- **Infrastructure**

In the context of urban development infrastructure refers to all bulk and general engineering services such as water supply, solid waste disposal, sewage, stormwater management, electricity supply and recycling management.

- **Integrated Development**

A process of co-ordination and combination of isolated actions (that would otherwise be inefficient) into a co-ordinated initiative aimed at improving the use of scarce resources and investment effectiveness.

- **Integrated Development Plan**

A plan aimed at the integrated development and management of the area of jurisdiction of the council or municipality concerned in terms of its powers and duties as set out in the Local Government Transition Second Amendment Act (Act No 98 of 1996.) An integrated development plan is required to incorporate land-use planning, transport planning, infrastructure planning, environmental planning and the promotion of integrated economic development, as well as other functional components as needed.

- **Integrated Environmental Management**

A philosophy which prescribes a code of practice of ensuring that environmental considerations and consequences of development proposals are fully integrated, understood and adequately considered in all stages of the planning and development process in order to achieve a desirable balance between conservation and development.

- **Integration**

This is a physical issue referring to the layout of the urban area, from the city-wide scale to street scale. It refers to urban development being integrated, rather than representing isolated pockets of insulated development. An effective way to integrate the city is through focussing development onto accessible linear movement routes that connect up otherwise isolated, segregated suburbs. A city is integrated when different areas reinforce each other.

- **Intensification of Development**

Development within the existing built areas which aims to increase densities and improve the quality of the city, e.g. urban infill developments.

- **Land-use**

The actual or permitted activities on a defined piece of land, such as residential, commercial, industrial or a combination of these.

- **Leapfrogging**

Means the location of new urban development beyond rural land in relation to existing settlements, other than when a planned and desirable new node is created.

- **Local Spatial Development Framework**

A spatial plan for a specific area of a metropolitan area. It is informed by the overarching metropolitan spatial development framework but depicts a greater level of detail that the former local spatial development frameworks further identify specific areas for capital investment are more closely aligned to capital budgets and implementation.

- **Medium to long term**

10 – 20 years.

- **Metropolitan Activity Corridor**

An activity corridor of which the scale, character and location are (or have the potential to be) significant to the metropolitan region as a whole.

- **Metropolitan Nodes**

Nodes that are of such significance in terms of scale, location, impact, diversity and agglomeration of function (facilities, services and economic activities) that they impact on the metropolitan region as a whole.

- **Metropolitan Open Space System**

A rationalised network of interconnected open space aimed at a) complementing the built fabric by providing the urban environment with variety, character, a sense of visual relief, open space enjoyment, recreation and general amenity without having to travel extensive distances, and b) protecting biodiversity in towns and cities and providing animal and plant species with habitats. The MOSS should not be viewed as an entity on its own, but rather as the description of a collection of other elements, such as natural areas, mountain areas and farmland within the urban edges which, when all linked, will create a green network that is greater than the sum of the different parts.

- **Metropolitan Spatial Development Framework**

Refers to a spatial plan for the entire metropolitan area. While the plan itself is based on problems identified in the city as well as the vision, goals and spatial principles and is thus contextual, the map itself is conceptual in that it broadly depicts the structuring elements that are to address the problem, vision, goals and spatial principals.

- **Mixed-use Development**

The horizontal and vertical integration of suitable and compatible residential and non-residential land uses within the same area or on the same parcel of land. It is aimed at facilitating a wide range of residential types within close proximity to employment, educational, social and recreational opportunities.

- **Mobility**

This refers to the ability to move relatively swiftly and at an acceptable speed and travel time with freedom to manoeuvre without undue interruption and at acceptable levels of comfort, convenience and safety. Mobility is an essential component of an activity corridor but preferably should be contained along a freeway or other limited access route.

- **Mobility Corridors**

Freeways arterials or high order routes with high mobility and limited access. These mobility corridors, together with activity corridors form development or transport corridors.

- **Multi-purpose Service Delivery Centre**

A centre where national, provincial and local government can provide social facilities and services (clinics, pension pay-points, educational facilities) and it can present social support programmes (HIV awareness, skills transfer areas programmes).

- **Natural**

An area existing in or produced by nature, not artificial or imitated, where vegetation is usually dominant, where little human intervention has taken place and which is not intensively utilized by humans.

- **Pedestrian-scaled environments**

Refers to urban areas that are primarily designed to facilitate pedestrian movement, safety and comfort. These areas are generally easy to walk around and typically represent compact, mixed use areas. While public and private vehicular movement is a dominant occurrence, car movement is of secondary importance to pedestrian movement in these areas. Activity spines and activity streets should represent typical pedestrian-scaled environments.

- **Polo Field**

Is an area that has been established for playing of polo, with ancillary amenities such as stables, using horses (i.e. polo ponies) for competitive, practice or recreational purposes.

- **Principles**

A set of fundamental truths or values and beliefs which underlies all actions and which forms the basis of our understanding of planning and development.

- **River Corridors**

Include the main stems of all rivers and their tributaries which shall be protected by a 30m buffer from urban development, intensive and extensive agriculture. Urban development, intensive and extensive agriculture should be discourage within these corridors. River Corridors differ from Core 1 in that they currently contain land that may be designated Buffer, Intensive Agriculture or Urban Development.

- **Short to Medium term**

2 – 10 years.

- **Spatial Development Framework**

The organising concept or strategy concerned with the appropriate location and form of physical development and investment. It articulates the main elements, particularly public, which structure the city. Metropolitan and local spatial development frameworks are to be drawn up by the relevant local authorities in order to identify focus areas and investment priorities.

- **Sub-metropolitan / Local Nodes**

Modal interchanges and lower-order intersections within a corridor or activity street where a range of lower-level activities and services, aimed at local needs, tend to be located.

- **Sustainability**

The ability to achieve equity (balancing of competing demands on land) and efficiency (effective allocation and distribution of resources such as land, skills, etc.) on an ongoing basis without damaging the natural resource base.

- **Sustainable development**

Development that has integrated social, economic and environmental factors into planning, implementation and decision-making, so as to ensure that it serves present and future generations.

- **Sustainable development**

Development that has integrated social, economic and environmental factors into planning, implementation and decision-making, so as to ensure that it serves present and future generations.

- **Sustainable Development**

The process of meeting the development needs of all without compromising or jeopardising the ability of future generations to meet their essential needs.

- **Traditional Access**

For the purpose of these guidelines, means a path or route that has been used by a community and / or the public for 30 years or more, and ordinarily the public will have acquired public access rights in terms of common law, unless the landowner has given specific notice to the contrary.

- **Urban Area**

Is all land designated for urban development purposes within a demarcated urban edge, including open space systems, and in the absence of a demarcated urban edge, the current outer extent of urban development should apply.

- **Urban Development**

Urban development can be described as developed areas that will be completely transformed by human intervention and accommodate a range of intense land uses.

- **Urban Edge**

The urban edge forms the boundary between urban development and the valuable natural and agricultural hinterland in order to contain the lateral growth of the urban areas. It is a demarcated line, which along with interrelated policy serves to manage, direct and control the outer limits of urban expansion.

- **Urban Node**

A place of high accessibility and economic advantage, usually at an important transport interchange or road intersection, where a full range of higher-order activities, such as economic, commercial, industrial and / or residential development, tend to be located. These activities mutually reinforce one another and are supported by concentrations of people that live in close proximity. Nodes create conditions for sustained growth and development through major public and private sector investment.

- **Urban Sprawl**

The undesirable spread of urban development, usually of a low density nature (such as single dwelling units), on the periphery of existing urban areas, where such development would be inappropriate in terms of the planned city structure and the protection of the non-urban environment.

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