



Quality services are a key determinant of quality of life

### 3.3 Services

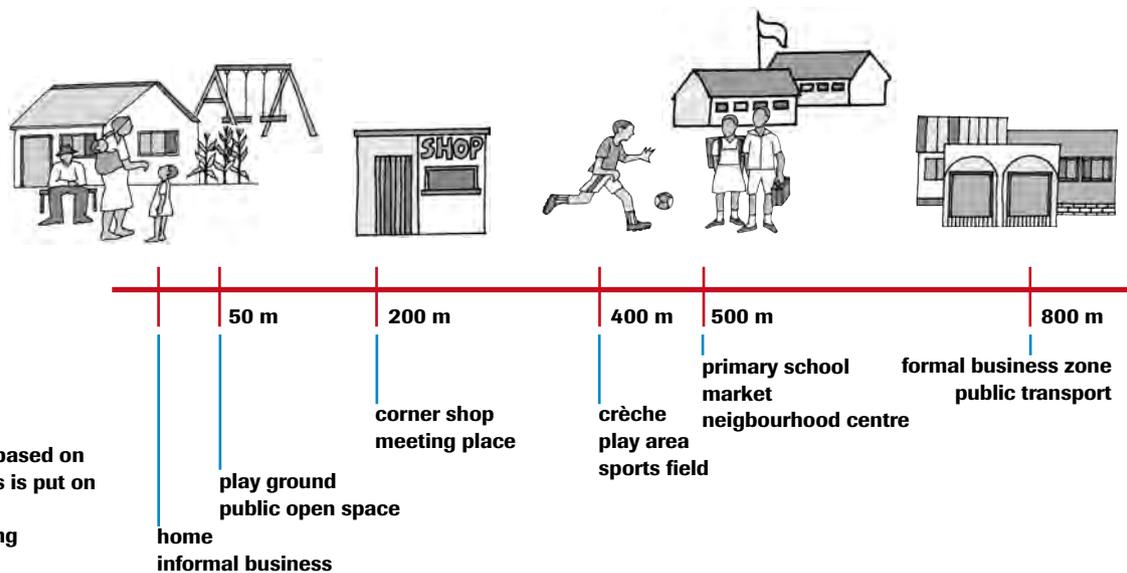
The availability and quality of services is a key determinant of the quality of life. Provision needs to be planned for essential services such as:

- water and sanitation
- waste removal
- environmental care
- electricity
- telephones
- health services
- educational/cultural services
- policing
- social and welfare services
- commercial services
- roads and stormwater drainage

#### Services, integration and sustainability

Good quality local services promote social integration by addressing disparities in service levels which in turn promotes mixed income levels, with resultant economic benefits. Local access to public and other services is also a key aspect of functional integration. Social and economic sustainability are enhanced by accessible services which enhance opportunities and reduce costs. Physical integration of services and sharing of facilities contributes to their financial sustainability, while reducing the need to travel to access services contributes to environmental and economic sustainability.

#### Distances to facilities



Sustainable Community Planning is based on the household perspective. The focus is put on availability and accessibility of work, services and recreation within walking distance.

#### GLOSSARY

##### disparities

differences causing inequalities



**Planning for basic services**

Basic services should be provided from the start to all households at a uniform standard, while other services can be developed over time. Provision should be made for this in planning, based on distances and numbers of households per service. Some services require infrastructure and facilities that must be planned at the start, with involvement of relevant providers, for example, of bulk supplies of water and electricity. Planning, budgeting for and financing of service infrastructure requires technical and financial expertise and inter-departmental or agency collaboration.

Engineering and financial considerations in structural framework plans, particularly for low income areas, need to be guided by sustainable community principles and a vision for the area generated by planners and other stakeholders. Integrated development planning by all stakeholders co-operating in multi-disciplinary teams is needed to plan appropriate service provision that considers qualitative as well as quantitative aspects.

Planning for water supply and sanitation needs to be based on agreement of appropriate systems and standards, taking into account environmental, social, technical, financial and maintenance considerations. An appropriate sanitation system for all households depends on access to sewage networks, local soil conditions and acceptability of alternative sanitation solutions. In areas without bulk infrastructure, dry systems, composting methods and local infiltration may be appropriate and cost-effective. Alternative solutions should be assessed in terms of environmental, social and health impacts, and beneficiaries need to be involved in such decisions.

Waterborne sanitation systems can be constructed to operate in more environmentally friendly and efficient ways, to conserve water, and reuse grey water at household and cluster levels.



**Access to safe water**



**A urine diversion system (UDS) toilet does not require water for flushing or connection to a sewage network**

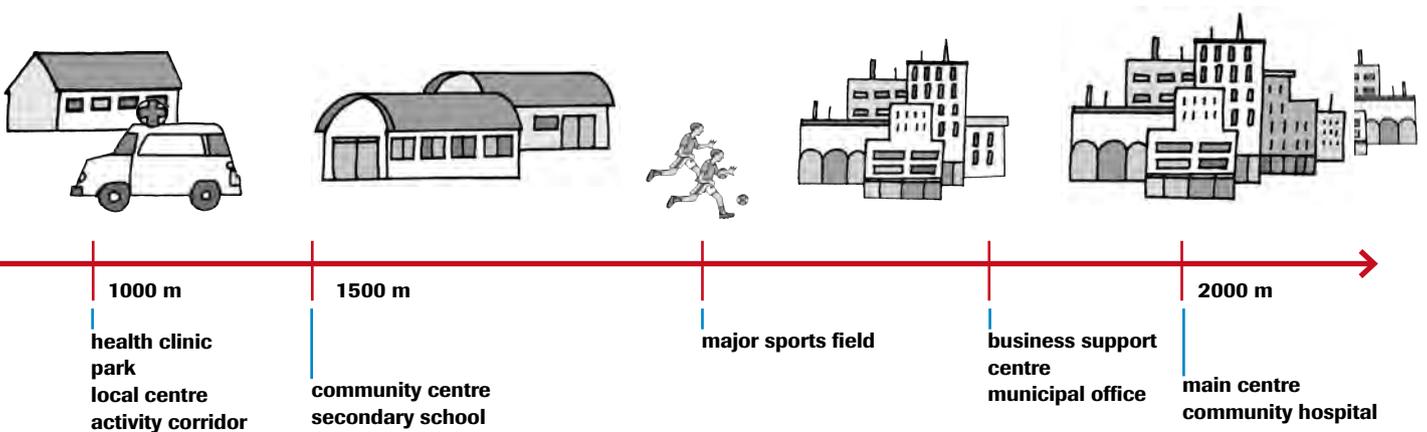
**GLOSSARY**

**grey water**

household water from sinks, basins and baths

**local infiltration**

disposal of wastewater into the surrounding soil



### Talking SENSE

The Sustainable Energy Society of Namibia (SENSE) is an information network that promotes sustainable energy (solar, wind and bio-fuels) by raising awareness and lobbying government.

SENSE was established in 2005 and has more than 130 member organisations such as HRDC (Habitat Research and Development Centre), Desert Research Foundation (DRFN), Namibian Renewable Energy Programme (NAMREP) and the Renewable Energy and Energy Efficiency Bureau (R3E). Members include home-owners, eco-activists, professional consultants, suppliers, teachers and NGO's.

SENSE's work includes hosting public events on renewable energy issues and printing and distributing pamphlets and brochures. Topics include basic principles of solar heat-

ing, renewable energy sources and household energy efficiency.

Initiatives of SENSE members include:

- The Solar Revolving Fund assists low-income earners with low-interest loans to install solar water heaters.
- BEN (Bicycle Empowerment Namibia) imports, repairs and sells second-hand bicycles at low cost to poor people. They encourage municipalities to install cycle paths to make cycling safer.
- Solar Age is currently investigating the possibilities of a solar-diesel hybrid system for the Tsumkwe settlement.

*Source: Maritz, Nina.2006. Talking Sense – a Sustainable Energy Network for Civil Society. Paper presented at 2006 Sustainable Built Environment Conference, Bloemfontein, July 2006.) (Nina Maritz Architect, e-mail: nina@mweb.com.na*



VIP is a low cost type of sanitation



Maintenance of stormwater drainage is important for the protection of roads

### Basic Service Infrastructure

Municipalities must ensure that their citizens have at least the basic level of the following essential services

- Water supply
- Sanitation
- Roads and stormwater drainage
- Solid waste disposal
- Electricity

Municipalities can get Municipal Infrastructure Grant (MIG) capital funding for infrastructure.



### Options for technical services

#### Water supply options

- Communal standpipes
- Yard taps
- Yard tanks
- Roof tanks
- House connections

#### Sanitation options

- Ventilated Improved Pit Latrine (VIP)
- Ecological Sanitation – dry systems
- Low flow on site systems
- Septic tanks
- Water-borne sanitation

#### Roads and Stormwater options

- Access to erf with gravel road; earth ditch
- Narrow paved road; earth or concrete lined ditch
- Paved streets with kerbs; earth, concrete lined ditch or pipes

*For further information, see "The Municipal Infrastructure Grant; Basic Level of Services and Unit Costs: A guide for municipalities"; DPLG 2005*



### Electricity and telephones

*Electricity* is the optimal source of power due to its varied uses, but requires a network of power lines. Electricity provision is expensive, and cost recovery is facilitated by pre-paid meters. Electricity generation, mostly from coal in SA, is highly polluting, and sustainable community planning should aim for local renewable energy production from solar, wind and bio-gas sources, as environmentally beneficial and sustainable alternatives. This may influence the design and the capacity required for the power supply and should therefore be considered at an early stage of the planning process. Electricity saving is possible, particularly via solar water heating.

Electricity is needed in homes, and business and industrial areas require a high standard power supply. The network should be designed so that all households, premises and street lights are a reasonable distance from a connection point.

### Telephones

Access to public telephones is essential in poor communities for safety and security and in emergencies and there should be a public phone within 500 metres of household.

### Sustainable Energy

Oil, coal and gas are non-renewable and rapidly depleting energy sources that are the major cause of carbon dioxide (CO<sub>2</sub>) emissions, global warming and climate change – the number one environmental threat. In SA most of our electricity is coal generated, and we are the 13th largest polluter globally. Sustainable Communities need to conserve energy and shift to renewable, non-polluting energy sources such as solar and wind.

### Carbon Trading – getting paid to do the right thing!

The Clean Development Mechanism (CDM) is a United Nations mechanism set up to reduce CO<sub>2</sub> emissions. It allocates carbon pollution limits to countries on the basis of population, and enables developing countries which use less than their allocation to sell their carbon credits to developed countries that use more than their allocation, and have a CO<sub>2</sub> debit. The Department of Minerals and Energy approves CDM projects in SA, which enables them to seek funding partners via the CDM.

### The Kuyasa Low-income Urban Housing Energy Upgrade Project

This City of Cape Town project in Khayelitsha provides solar water heaters, ceiling insulation and low-energy light bulbs to reduce electricity consumption and costs. It is the first CDM supported project in Africa, and is to be scaled up from the pilot of 10, to 2 300 houses. The project is 20 to 30% funded by the UK Department of Environment via the CDM, and by Department of Environmental Affairs and Tourism poverty alleviation funding.



**Alternative and sustainable technologies are an absolute necessity – the technical solutions are available, we just need to create awareness and get them implemented.**



**Public phones should be located with easy access for pedestrians**



**Alternative sources of energy need to be promoted and the use of such energy will in the long-term reduce costs and promote environmental sustainability**

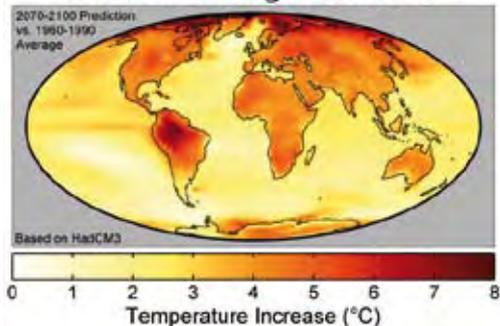
### GLOSSARY

#### alternative and sustainable technologies

any technology that does less harm to the environment and uses renewal energy



### Global Warming Predictions



www.worldpress.com

**Solar power panels used in Eco Village in Galeshewe, Kimberley**



### Global Warming, clean energy and energy conservation

Global Warming due to carbon dioxide emissions from burning of fossil fuels is likely to create a worldwide environmental crisis. Currently the bulk of cheap electricity in SA is generated by burning coal, producing significant CO<sub>2</sub> emissions.

South Africa thus needs to increase generation of sustainable energy from clean, renewable sources such as sun and wind, and the Government White Paper on Renewable Energy sets targets for the future contribution of renewable energy.

One solution can easily be implemented – heating water with solar power rather than electricity. Solar water heating is effective for households, commercial complexes and industry, and capital costs can be recovered from reduced electricity use well within the lifespan of systems. The technology is well developed and many products are already on the market. Increased local production of solar systems will also contribute to job creation and economic growth.

Another practical and low cost solution is energy conservation by using less energy for:

- heating and cooling of buildings (see box on good thermal design)
- minimizing motorised travel and transport
- low energy appliances and lighting

Everyone needs to become energy conscious and save on energy use, which will reduce personal and environmental costs, and the huge capital costs of additional generation capacity in the case of electricity.

### Renewable energy initiatives in Nelson Mandela Bay

The Nelson Mandela Bay Municipality has, in line with the Energy White Paper and the Renewable Energy White Paper, embarked on a process to implement renewable energy technologies. Tenders invited national and international parties to submit proposals for the following renewable energy projects:

- *Solar water heating (SWH) project* – to install 100 000 SWH units over a six year period, with more than 60% for indigent and low-income households.
- *Wind energy* – to generate electricity from small and large wind turbines. A 15 megawatt wind farm is envisaged initially. Micro wind turbines for domestic households are also being considered.
- *Waste incineration and bio-digestion plant* – will convert effluent to a sludge which can be dried and burned, to drive an electrical generator. De-activated sludge could also be used for making bricks or to cap landfill sites.
- *Demand side management (DSM)* initiatives such as street light dimming, promotion and installation of energy saving devices, wastewater treatment plants and improved building efficiency measures
- *Land fill gas* – the installation of gas collection wells at two major land fill sites has the potential to generate sufficient methane gas to generated 3 to 4.7 MWe per annum, which justifies the cost of the equipment required.

Source: NMBM – Renewable Energy in a Municipal Context, November 2006

### Checklist for Thermal Efficiency in Housing

Thermally efficient houses reduce energy use and financial and environmental costs. Better designs have huge impacts over the long-term (50+ years) occupation of houses.

#### ✓ Site layout

- Site layout with long axis in East/West alignment
- House positions set out in township layout
- Adjacent houses allow solar access – staggering or sufficient North/South spacing for winter sun
- Options for house expansion indicated on township layout

This enables optimal orientation of houses (North/North East). Solar access/minimum shading.

#### ✓ Housing form

- Multi-storey rather than single storey
- Row housing rather than detached houses

This enables better thermal performance, higher comfort levels and lower materials and energy costs.

#### ✓ House orientation

- Long axis of the house oriented essentially North/North East (15° West to 45° East)
- Cold wind side of the house minimised

This enables optimal solar thermal positioning and minimum wind and rain exposure.

#### ✓ Windows and roof overhangs

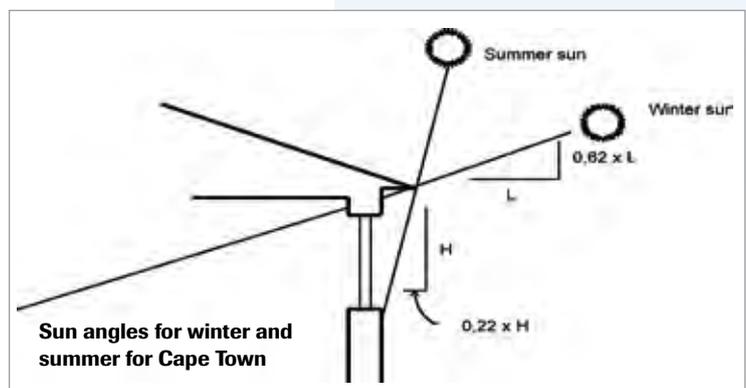
- Windows (taller rather than wider) on four elevations of the house – 5% of floor area on North, 2% on East and 0,5% on South and West
- Roof overhangs to allow sun through windows in winter, but shade in summer.

This ensures optimal natural lighting, minimises heat losses, enables solar heating in winter and avoids solar heating in summer.

#### ✓ Thermal insulation

- Ceiling installed to minimise heat gain/loss through the roof

Costs: R75/m<sup>2</sup> or R2250/30m<sup>2</sup>



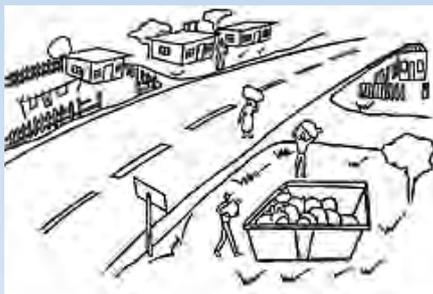
#### References

Glynn Morris, AGAMA Energy (pty) Ltd.

#### GLOSSARY

##### thermal

relating to heat



**Option 1:** People transfer waste from their houses to communal skips, and the waste in the skips is transported to a formal disposal site. This is the cheapest option available, but also the most problematic. If the communal skip is too far away, not emptied regularly, or if children cannot reach high enough to place garbage in it, the collection point becomes a littered and unhygienic health hazard.



**Option 2:** The people place their waste in plastic bags or bins, which are placed outside houses on the kerbside once a week. Waste collection vehicles travel a fixed route, collecting this waste and taking it directly to the disposal site. This is the most expensive option, costing approximately 55% more than Option 1, as it requires specialised vehicles. This system is suitable where access to individual households is possible, via well maintained roads.

### Waste removal

Service levels are classified as follows

- Basic service – communal collection point
- Full service – kerbside collection

The target is for all households to have kerbside refuse collection. For households to receive an adequate, equitable and affordable waste collection service, the following should be planned in a sustainable community:

- Roads wide enough for refuse trucks
- Culs-de-sac wide enough for trucks to enter and turn
- One easily accessible refuse transfer site per 3000 residential sites, for disposal of garden refuse and bulky waste that does not fit in black bags or wheely bins.
- Recycling at transfer stations via containers for different types of waste
- Education and information on recycling at transfer stations

### Waste minimisation

The amount of waste going to landfills should be reduced by

- Minimisation of waste at source
- Waste separation and recycling at source
- Reuse and repair (e.g. via buy-back centres)
- Composting and taking organic waste out of the waste stream
- Green procurement – using products and services that involve minimum waste generation in production and that use eco-friendly, bio-degradable materials

Community education, awareness and responsibility are essential for waste minimisation, and urban agriculture creates local opportunities for composting of organic waste.

### Factors to be considered before selecting a specific system

- Social – the needs of the community, e.g. job creation, acceptability
- Political – local policy and statutory requirements
- Financial – available capital, ability of the community to pay
- Technical – waste types generated, availability of suitable equipment
- Environmental – local climate, potential effect on groundwater resources





Sign at collection bins, Delta Park, Johannesburg

**Who are the experts on waste management in Southern Africa?**

The Institute of Waste Management of Southern Africa promotes sound and cost-effective waste management to ensure that all waste is handled in a way that protects the environment. The members come from all sectors of the waste management industry and include waste managers, contractors, academics, consultants and students.

website: [www.iwmsa.co.za](http://www.iwmsa.co.za)



**When we throw a product away it represents more than just a piece of waste, it also embodies all the resources used to produce it. If you add these up, the real weight of a toothbrush becomes 1.5 kg and that of a cellphone becomes 75 kg.**

**Margot Wallström**  
EU Commissioner

Waste should be managed from the point of generation to the point of disposal, through control of the following:

Waste avoidance	Prevent the creation of waste in the first place
Waste minimisation	Reduce! Reduce! Reduce volumes by reusing, sorting and recycling
On-site storage	How and where waste is stored when it is first generated
Collection	How waste is picked up
Transport and transfer	How waste is moved
Processing and recovery	How waste is treated or made useful
Disposal	How waste is finally discarded

**Community Zero Waste Project**

The Community Zero Waste Project in Johannesburg is designed to show how reclamation works, while making people aware of the need for Clean Production. It includes organic gardening and crafts as well as developing understanding of using water and energy efficiently. Project activities are introduced as neighbourhood programmes. The programmes in turn promote environment protection and economic development in the community.

**Useful Zero Waste tips**

- Separate organics from reusables/recyclables
- Start a compost heap for organic waste
- Donate or sell reusables/recyclables
- Use energy-saving compact fluorescent light bulbs
- Use a kettle and not the stove to boil water
- Switch your geyser off during the day
- Use a bowl or buckets to rinse things, rather than running water
- Use a broom not a hose to clean paving
- Water the garden in the afternoon 15:00 or in the morning before 10:00

Source: Brochure on Community Zero Waste Project by Johannesburg branch of Earthlife Africa



**GLOSSARY**

**clean production**

the production of goods and services processing less waste, or none at all, and that do not use toxic man-made chemicals

**green procurement**

using products and services that create minimum waste and pollution in production and that use eco-friendly, biodegradable materials





**Pre-primary and primary schools should be located within housing areas and neighbourhood units. It should be possible for a child to walk from home to school along a convenient and safe walkway.**

**Sport fields and community gardens can be part of a school yard**



### Education

Education is a provincial responsibility, but municipalities need to make sufficient land available.

*Primary schools* are often a determining factor for the design and size of neighbourhoods. The Department of Education standard for primary schools is 40 students per class, resulting ideally in primary schools of 700 to 800 students. It is preferable for learners to attend schools in local neighbourhoods to minimise travel and traffic. A primary school serving 3000–4000 inhabitants can be within a 10 minute or 600–800 m walking distance, along convenient, safe and lit pedestrian walkways and cycle paths.

*Secondary schools* ideally accommodate students at a rate of one secondary school for three primary schools, or 1800–2000 students. Sport and recreation facilities can be shared with other schools and organisations. They should be within 1200 m, and serve a population of 10000–15000.

*Pre-primary schools*, crèches and day-care centres should be located in residential areas or adjacent to primary schools, away from main roads or business zones, and have safe and convenient pedestrian access. They should be small scale, serve the immediate neighbourhood within 300–500 m, and have access to a garden. A medium-cost residential housing unit of 500–600 m<sup>2</sup> is suitable, and conducive to a homely environment.

*Adult education and other community activities* can use school premises after hours, and schools as community learning centres with a mix of uses to maximise use of local infrastructure.



**Health**

Neighbourhood clinics provide preventive and primary care, larger clinics and day hospitals provide intermediate services, while hospitals provide advanced medical care. Guidelines for provision are:

- *Health posts* and *mobile clinics* available on certain days or for limited hours, within 500 m, adjacent to primary schools, marketplaces or local centres.
- *Health clinics* serving 10000–15000 inhabitants within 1200 m, accessible on foot or local public transport.
- *Day and community hospitals* serve population of 65000–110000

Special health care needs will arise due to increasing numbers of HIV/AIDS affected people. Home-based care can be provided by home or clinic based community health workers. Health services should include preventative health education and monitoring of environmental health risks to reduce illness and its costs. Safety and security, social and traffic control measures that reduce violence and injury are also essential preventative measures.

**Social services**

Social services cover a great number of services and facilities required in a community area. They involve many different actors and authorities. Some of the social services are possible to co-ordinate and physically integrate in single or ‘one-stop’ facilities at local commercial or community centres, preferably within 1000–2000 m. These include:

- social services (welfare grants payment and social workers)
- post office
- libraries
- fire and emergency services
- police services

Children’s special needs would be part of the social services. The most disadvantaged and vulnerable children may need special services in the form of children’s homes, orphan care, foster homes or other institutional arrangements.

**Environmental health issues**

SCUs with higher densities, mixed use areas and urban agriculture require planners to pay special attention to environmental health issues such as:

- air and noise pollution
- traffic congestion
- alternative sanitation and waste water systems that are not properly selected or designed
- health risks posed by keeping animals and poorly made compost
- poor waste management practices and services
- cellphone masts and high voltage power lines close to houses or schools

Many municipalities employ Environmental Health Officers to deal with environmental health issues.



**Social welfare services for special needs groups such as HIV/AIDS affected persons and orphaned children should be available at small-scale facilities with a homely environment**



**Different health services meet different needs. While preventive health care is available close to home at clinics, more advanced treatment is provided at a main community hospital.**



### Neighbourhood Watch

Community policing involves a working partnership between the police and the community to prevent crime, arrest offenders, find solutions to recurring problems and to enhance safety and security. This partnership should ensure that the lives, property and rights of all citizens are protected and respected, and that the police service is efficient, but based on proper procedures and respect for the rights of accused persons.

Source:

*Pakiso Sylvester Rakgoadi, Community Policing and Governance. Research report written for the Centre for the Study of Violence and Reconciliation, July 1995*

Community Policing Forums (CPF's) should be established to facilitate co-operation between the police, the community in general and specific groups such as neighbourhood watches. CPF's should provide clear guidelines on the roles and acceptable practices of community members and groups, so that they do not 'take the law into their own hands'.

### Community support centre



### Safety and security

Poorer communities are more vulnerable to crime and disasters such as fires and flooding, and adequate police, fire and emergency services are essential. They require a local presence to minimise response times, and easy road access to areas. Inhabitants need clear lines of communication and local liaison. Police should establish their mode of operation in consultation with community policing forums.

Neighbourhood designs should minimise safety and security risks, including those posed by traffic to pedestrians, cyclists and children.

### Cultural facilities and community meeting places

Local cultural activities, entertainment and celebrations build community identity, local culture and social cohesion. As cultural activities and interaction between groups and individuals act as the "glue" of the community, they are an important part of sustainable development. Cultural facilities and community meeting places are needed and municipalities can support cultural services provided by NGOs, CBOs, and religious congregations by allocating land and spaces for hire in community centres. The number, size and location of sites in layout plans will depend on community needs and should be based on consultation. Local parks can also be used.

Community halls and centres should be multi-purpose spaces to provide for diverse activities. Larger community centres can include other facilities and services. Local halls should serve 10000–20000 people within 1 km, but could be integrated or co-located with schools. Multi-functional community centres can serve a population of 25000–40000 people within 1.5 km.

Public open spaces, parks and sports fields can also be used for cultural activities and meetings. Abakwetha or initiation is an important tradition in some communities that requires an isolated space in a natural environment. Community representatives should be involved in the identification of suitable sites for Abakwetha and should play a role in maintaining and protecting it.

### Municipal offices

Municipal offices should provide for:

- public information and contact
- payment of bills
- provision of maintenance
- monitoring and control
- guidelines, advice and assistance regarding planning and building regulations and services
- housing support services
- support for community initiatives and projects

Municipal offices are preferably located at social service, business or community centres, near public transport and within 2 km of any household.

**Municipal offices at a community centre providing services to the community**



**The Community Self Employment Centre (COMSEC)**

COMSEC, the key project of the Eastern Cape Job Creation Trust, supports entrepreneurship development and self-employment.

**COMSEC provides the following services**

Business development services

- Business plans
- Marketing plans
- Business skills training
- Accounting services
- Business registrations
- Facilitation of market access
- Business out-reach programme

Consulting

- Replication of COMSEC model
- Facilitation of SETA contracts
- Umsobomvu Youth Fund Voucher Programme allocating agent

Property

- Small business office and workshop space
- Incubation

[www.comsecpe.co.za](http://www.comsecpe.co.za)



**Commercial services**

In the Sustainable Community Unit, which focuses on accessibility and availability of services to pedestrians as a main aim, small and more dispersed commercial services will be available.

The most directly accessible commercial services will be provided as corner shops, neighbourhood centres and local commercial centres. At the housing area level there will be corner shops, informal outlets, market stalls, hawkers and business vendors. These shops may be situated within residential areas, near public transport routes or main pedestrian walkways.

**GLOSSARY**

**incubation**

start-up support for a small business

**replication**

repeating the same activity elsewhere





Residents should find most daily consumer goods at the local corner shop

The central nodes and activity corridors should include not only shops and businesses but social, community and municipal services.



### Recreational facilities and open space

Recreational and sport activities require access to suitable local open spaces and facilities. This should include:

- private space next to houses
- semi-private space adjacent to houses
- local open space within or close to a cluster of houses
- larger spaces and sports facilities at neighbourhood and area level

*Local open spaces* need to be safe, allowing for surveillance and social control via easy access and/or enclosure.

*Playgrounds* are needed close to home and family, where parents can watch children play, safe from traffic. Children of primary school age can move beyond housing clusters to neighbourhood playgrounds within 500 m with more facilities and space, accessible on foot and without crossing major roads or transport routes.

### Characteristics of green public open spaces

Green public open spaces should

- include larger parks to encourage ball games, centrally located and within 500 m,
- include areas with trees, lawns and pathways
- be fenced for child safety if adjacent to roads
- have bollards to prevent vehicle access
- combine flat areas for ball games and uneven natural areas
- not include servitudes or retention ponds
- have robust and relatively maintenance free sports field and playground equipment that is designed for safe use
- include surfaced public open spaces with trees and places for people to sit, meet and trade

#### GLOSSARY

##### hierarchy

a system with higher and lower levels



*Sports fields* and facilities for sports preferred by the community are needed at neighbourhood level. Sports fields with free access can be controlled and maintained by communities. Co-location with schools and community halls is preferable. Sports requiring special facilities and equipment can be located at community centres. Sport clubs and the private sector can finance and manage such facilities and charge an entrance or membership fee.

*Parks and public gardens* are important components in the urban structure for aesthetic and environmental reasons. Neighbourhood parks should be within 500 m, and larger community parks within 2 km. Management and maintenance by the municipality can include community involvement.

*Major open spaces* are extremely valuable for a quality urban environment. A Metropolitan Open Space System (MOSS) with linked green open spaces promotes environmental protection, biodiversity and conservation of unique species. Open spaces also provide for recreation such as picnics, hiking, cross-country running, swimming and climbing, as well as environmental education and Abakwetha. Sites should be available for specific activities, with due control to protect the environment, as well as access from community areas and community involvement in environmental protection.



**Convenient access to major open space is important for the quality of living**

### Cemeteries

The need to reserve land for cemeteries is an issue to be addressed at the Spatial Development Framework level, due to the increasing demand and the specific requirements related to the land use. Ideally each sustainable community area should have sufficient land for cemeteries that is reasonably accessible.

In determining the location of cemeteries the soil conditions, vegetation, ground water and storm water drainage must be taken into account. The landscaping and layout of the cemetery should be based on the need to create a pleasant and restful environment.

The planning process will include an Environmental Impact Assessment.



**In the sustainable community unit there will be a hierarchy of public open spaces that are interlinked and easily accessible from housing clusters through a network of walkways. The elements of public open space include playgrounds, meeting places, playing fields, squares, parks, gardens and natural green areas.**

#### GLOSSARY

**aesthetic**

concerning beauty

**biodiversity**

variety of species of plants and animals

**conservation**

protection

**Environmental Impact Assessment**

a legally required study to determine and to prevent or reduce potential harmful effects of a development project on the environment

**Cemeteries should be designed to provide a pleasant environment, seating, shade trees and decorative plants.**





**Characteristics of cemeteries**

- Sites for cemeteries must be identified and planned at SDF level as suitable areas are in high demand for other developments
- Sites should ideally be large to minimise infrastructure repetition, but reasonably accessible from community areas
- Soils should be stable but enable excavation
- Sites should be positioned considering drainage and ground water resources
- An Environmental Impact Assessment is necessary
- Cemeteries should have trees and grass that can be mowed
- Sites should be fenced
- Alternatives to burial should be encouraged

**GLOSSARY**

**MOSS**

Metropolitan Open Space System

**floristic region**

region with specific types of plants

**biomes**

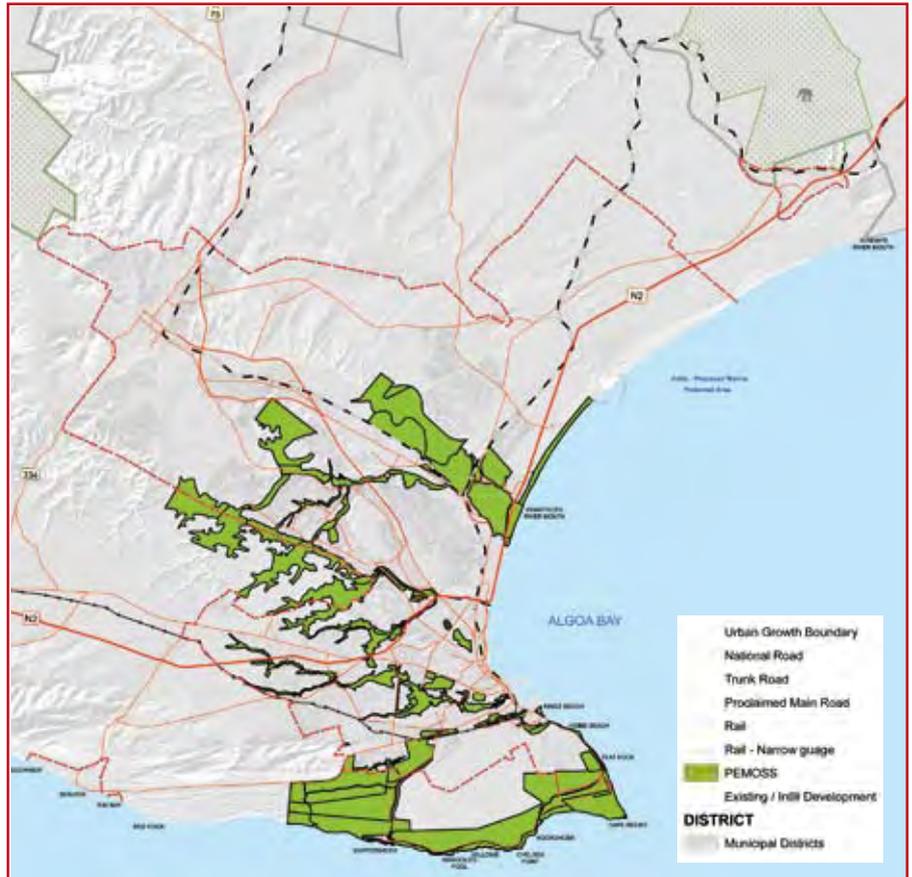
areas with specific natural vegetation

**biodiversity hotspots**

areas with unique and endangered species of animals and plants

**verge**

area between the road and the erf boundary/sidewalk/pavement



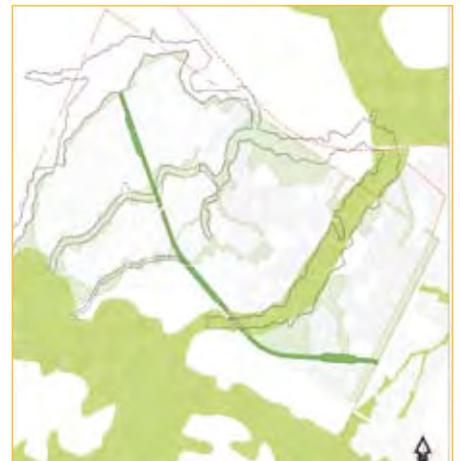
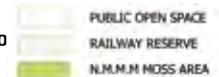
**NMBM Spatial Development Framework, 2006**

**Metropolitan Open Space System**

Due to the long coastline with a number of rivers and ridges, the metropolitan area has a unique environmental quality. The diversity and unique plants also provide opportunities for tourism and conservation.

This is further enhanced by the metropolitan area being situated at the south-eastern corner of the Cape Floristic Region where five of South Africa’s seven natural biomes (Fynbos, Subtropical Thicket, Forest, Nama Karoo and Grassland biomes) converge. Such a concentration of biomes, particularly within a city, is unparalleled in the world. The metropolitan area also contains three of the 21 international biodiversity hotspots, thus making it extremely valuable from a scientific and eco-tourism perspective.

**Incorporation of the MOSS concept in the Bloemendal pilot project**





## SERVICES checklist

### How do planning principles apply to services?

Principles	Applications	Results
<b>Poverty alleviation – meeting basic needs</b>	<ul style="list-style-type: none"> <li>• Appropriate norms and standards for services: • Water and sanitation • Roads and walkways/ bicycle routes • Waste removal</li> <li>• Electricity, telephone/internet – access to information • Health services • Education/cultural services • Policing • Social and welfare services • Commercial services • Informal/formal trading spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Improved living standards</li> <li>• Service availability</li> <li>• Increased household income</li> </ul>
<b>Focus on special needs groups – HIV/AIDS affected persons, children, the aged, disabled</b>	<ul style="list-style-type: none"> <li>• Water and sanitation crucial • Home-based and community food gardens • Health care services and clinics • Availability of/access to social and welfare services • Mobility (accessibility) • Wheel chair friendly (universally accessible) • Community based education</li> </ul>	<ul style="list-style-type: none"> <li>• Provision for basic needs</li> <li>• Improved living standards</li> <li>• Service availability • Increased household income</li> </ul>
<b>Gender equality</b>	<ul style="list-style-type: none"> <li>• Increased access to services and facilities</li> <li>• Increase participation</li> </ul>	<ul style="list-style-type: none"> <li>• Shorter walking distances</li> <li>• Safer environment • Women empowerment</li> </ul>
<b>The environment – physical, social, economic</b>	<ul style="list-style-type: none"> <li>• Energy – alternative/renewable sources • Alternative sanitation options • Use of grey water • Communal waste collection points</li> <li>• Waste separation and recycling • Spaces where people can meet • Playgrounds • Local open space • Cemeteries • Abakhwetha</li> </ul>	<ul style="list-style-type: none"> <li>• Energy conservation • Social interaction • Economic opportunities • Cultural activities</li> </ul>
<b>Participation and democratic processes</b>	<ul style="list-style-type: none"> <li>• Community involvement in design, development and maintenance of services • Community based activities/service provision</li> </ul>	<ul style="list-style-type: none"> <li>• Community buy-in, sense of identity</li> </ul>
<b>Local economic development</b>	<ul style="list-style-type: none"> <li>• Waste removal – community based waste separation • Environmental care, e.g. clean-up campaigns, tree planting, seed collecting</li> <li>• Telephone/Internet – kiosks • Health services – home-based care • Educational services – Adult Basic Education – skills enhancement • Policing – community policing • Social and welfare services</li> <li>• Home-based care • Commercial services – home-based economic opportunities • ATMs • Informal kiosks • Labour intensive service installation (Expanded Public Works Programme)</li> </ul>	<ul style="list-style-type: none"> <li>• Poverty alleviation, more diverse environment and sustainability</li> </ul>
<b>Accessibility – public transport and pedestrians</b>	<ul style="list-style-type: none"> <li>• More accessible services and less need to travel • Proximity of services • Proper layout planning • Pedestrian movement routes and side walks • Cycle paths</li> </ul>	<ul style="list-style-type: none"> <li>• Cost-efficient mobility</li> <li>• Time saved</li> </ul>
<b>Mixed-use development</b>	<ul style="list-style-type: none"> <li>• Clustering of services</li> <li>• Permitting mixed use in terms of services</li> <li>• Informal kiosks</li> </ul>	<ul style="list-style-type: none"> <li>• Accessibility, diverse urban environment, cost-efficiency</li> <li>• Co-operatives and community projects</li> </ul>
<b>Corridor development</b>	<ul style="list-style-type: none"> <li>• Clustering services</li> <li>• Alignment of service provision</li> </ul>	<ul style="list-style-type: none"> <li>• Cost-efficiency, increased accessibility • Economic viability</li> </ul>
<b>Safety and security</b>	<ul style="list-style-type: none"> <li>• Structures/facilities for community policing • Safe design for access to services • Plan for crime reduction • Create sense of safety through design • Street lighting along main routes, walkways and cycle paths</li> </ul>	<ul style="list-style-type: none"> <li>• More attractive areas • Accessible, safe areas</li> </ul>
<b>Variation and flexibility</b>	<ul style="list-style-type: none"> <li>• Flexibility in standards • Design for mix-used development</li> </ul>	<ul style="list-style-type: none"> <li>• More diverse and attractive environment • Integrated city</li> <li>• Flexible standards</li> </ul>
<b>Densification</b>	<ul style="list-style-type: none"> <li>• Clustering of services</li> </ul>	<ul style="list-style-type: none"> <li>• Lower service costs, increased access • Efficiency</li> </ul>
<b>Reducing urban sprawl</b>	<ul style="list-style-type: none"> <li>• Densify development • Clustering of services</li> </ul>	<ul style="list-style-type: none"> <li>• Cost-effective, optimal use of infrastructure</li> </ul>