

EMM REGION A RSDF SAFETY AND SECURITY PLAN

GUIDELINES FOR A SAFER LIVING ENVIRONMENT

SAFETY AND SECURITY FRAMEWORK
REGION A
FIRST DRAFT
EKURHULENI METROPOLITAN MUNICIPALITY

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1 INTRODUCTION

Metroplan was appointed by the **Ekurhuleni Metropolitan Municipality (EMM)** to prepare the Regional Spatial Development Framework (RSDf) for Region A of the Ekurhuleni. This Regional open space framework follows and supports the RSDf as a sectoral plan thereof. The aim of these Guidelines is twofold, namely:

- To influence and inform decisions about designing and managing the built environment, so that our communities, towns and cities are safer, more secure and therefore more sustainable;
- To inform on the Disaster Management provisions for Ekurhuleni in the context of Region A.

2 DESIGN GUIDELINES FOR CRIME PREVENTION

Crime poses a substantial threat to the stability and well-being of many people in Ekurhuleni. The social and economic costs of increasing crime rates on urban neighbourhoods in Region A, as well as the psychological toll that a pervasive fear of crime can cause often impedes positive community improvement activities. Despite a general decline of crime on

national level during the last several years, the overall crime rate in Gauteng is one of the highest in South Africa.

Crime prevention became a priority for the government since after 1996 when the crime rate skyrocketed. As a result the National Crime Prevention Strategy (NCPS) was launched. This strategy provides that preventing crime (not only relying on the criminal justice process) is essential to making South African communities safer.

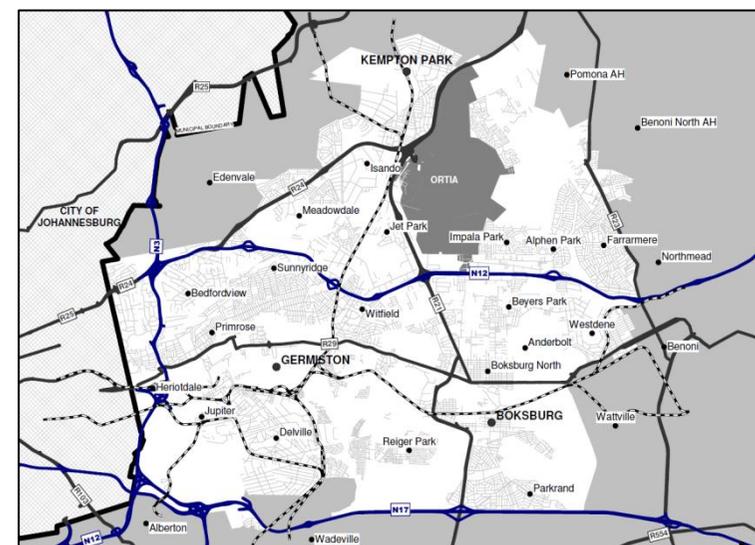


FIGURE 1: SETTLEMENTS IN REGION A OF EKURHULENI

The strategy is based on the idea that without the involvement of the community and the different government departments, it will be difficult to the police alone to reduce crime. The NCPS has laid the foundation for crime prevention. Local

government has been identified in the policies of the Department of Safety and Security and as the partner best able to carry out crime prevention programmes. This is because crime occurs in specific places and is often related to the conditions experienced in a local context.

Given the factors that lead to crimes being committed (discussed in detail further in the text), it is clear that extra focus should be given to another aspect of the fight against crime, namely the concept of “Crime Prevention”. Although the term is used on daily basis, it is still misunderstood by many.

A general definition of crime prevention would be “preventing the occurrence of a criminal event by addressing the causes of and opportunities for the event to take place”. The concept also includes enforcing of laws, ensuring that order is maintained in the day to day activities of the community and reduce public fear of crime.

Many of these causes and opportunities are usually beyond the scope of the criminal justice system. However there are approaches which can intervene to modify attitudes and values or to modify behaviour. There are basically three approach categories for crime prevention, namely: Social, Developmental and Situational crime prevention.

Social crime prevention aims at to strengthening communities and changing social conditions. An example for this would be a neighbourhood which has strong social bonds, where people take pride in their street and ‘own’ their public spaces, where the needs of all groups in the community are

met and where people regard the area as an attractive and safe place to live and work, is likely to have a low crime rate.

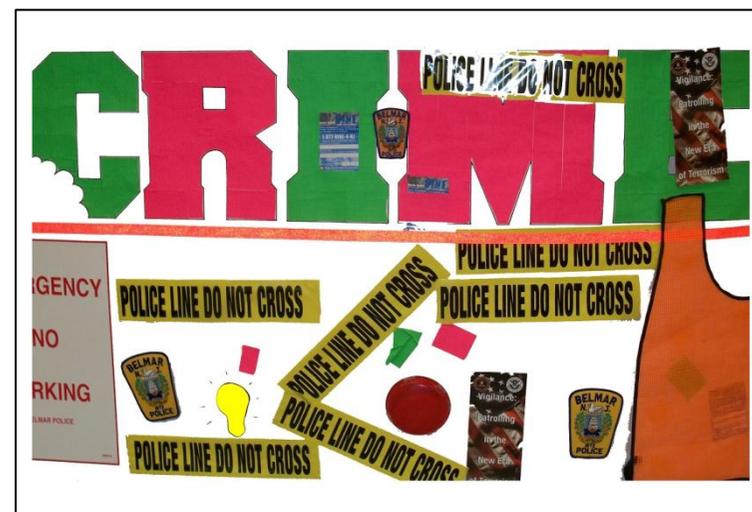


FIGURE 2: RISE OF CRIME IN SOUTH AFRICA TRIGGERED THE POLICY PROCESS

Developmental crime prevention provides for intervening at critical stages in individual’s and group’s lives in order to reduce risk factors which may cause a person or group to commit a crime; or to increase protective factors which may prevent a group or individual from committing a crime.

Situational crime prevention seeks to change the environment to make it harder to commit a crime or to increase the risk so that the offender will not commit a crime because the risk of being detected or caught is too high. A major component of this approach is categorised under the label of Crime Prevention through Environmental Design (CPTED).

The first part of this document will provide the legal background and specific crime prevention design guidelines. The dominant crime prevention planning approach underpinning the guidelines is the one of situational crime prevention.

2.1 BACKGROUND

In the recent years research done by the CSIR as well as many other research centres all over the world years, had provided a plethora of evidence that the physical environment can either increase or reduce the opportunities for crime. There is an international consensus that if the environment is planned, designed and managed appropriately – the possibilities for certain types of crimes could be reduced.

Safety and Security principles and approaches in environmental design have formed an integral part of planning in countries such as the United Kingdom, USA, Brazil, Canada, Netherlands and Australia. This document is the first step towards the integration of the safety and security urban design principles and guidelines into the Ekurhuleni Municipal planning system. The desired outcome of the document is to create a link between crime and spatial planning, urban and architectural design, and the land use management system.

The purpose of the document is to promote the incorporation of Crime Prevention Through Environmental Design (CPTED)

principles into the daily Land Use Management of development in the Region A of Ekurhuleni.

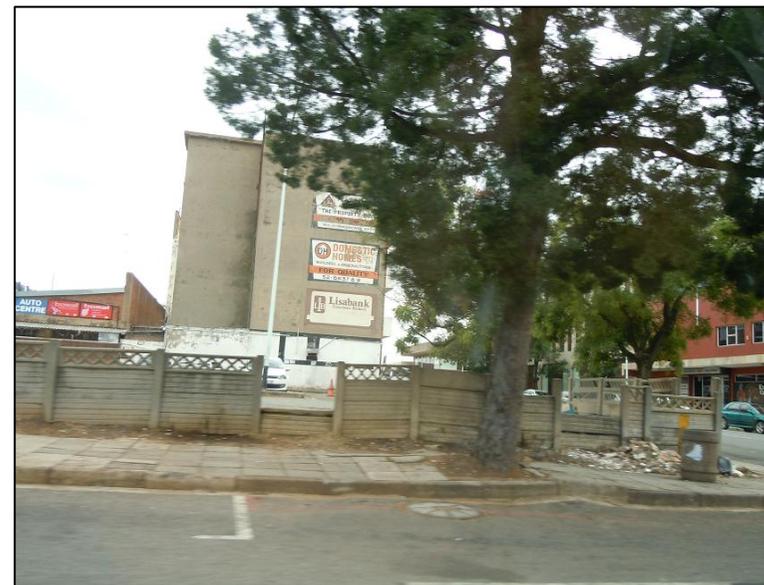


FIGURE 3: DECAYING PUBLIC ENVIRONMENTS LIKE THE FOLLOWING IN KEMPTON PARK MAY LEAD TO RISE THE FEAR OF CRIME

The aim of the latter is to encourage public and private developments to be designed in line with the security principles outlined in this document. Another aim of the document is to encourage the CCC planners to incorporate the principles in the preparation of local and precinct plans.

2.2 LEGAL REQUIREMENTS

Since 1994 a lot of legislation and policy documents were drafted by national government which provide the

prerequisites and guidance for the development of a local safety and security strategy. The following are some of the policies that are most relevant to the subject, prepared by:

Department of Safety and Security

- White Paper on Safety and Security (September 1998)
- The South African Police Service Amendment Bill No 39 of 1998: Municipal
- Policing
- SAPS Amendment Act No 83 of 1998

Department of Provincial Affairs and Local Government

- White Paper on Local Government (March 1998)
- Local Government Transition Act (1993): Integrated Development Plans (IDPs)

Department of Land Affairs

- The Development Facilitation Act (DFA) of 1995
- Green Paper on Development and Planning May 1999

The first of the above-mentioned policies, namely the *White Paper on Safety and Security* of September 1998, argues that crime will be reduced through two strategies, namely: law enforcement and social crime prevention. If law enforcement largely involves the police, then crime prevention needs much broader participation by government and community members. In this context, the White Paper makes provisions for the involvement of the different levels of

government. When it comes to the local government, the White Paper states that the local governments should actively participate in crime prevention by planning programmes and coordinating a range of local actors to ensure that these are carried out.

The White Paper implies that crime prevention should be an integral part of good urban management and not something that is added on to existing functions. With this in mind, practical ways for local government to reduce crime include:

- Preventing crime in the structures of, and on the property of, the municipality;
- Working with local police;
- Aligning internal resources, objectives and development projects with the principles of crime prevention;
- Coordinating crime prevention efforts in the municipal area to avoid duplication;
- Enforcing by-laws and traffic laws;
- Assisting victims by providing information on services; and
- Initiating targeted crime prevention programmes.

The White Paper also outlines the NCPS centre established by the Department of Safety and Security should help local governments in providing research, technical guidance, training, sharing good practice and advising developing crime prevention programmes.

The White Paper also says that local government should work with community police forums (CPFs) in order to:

- Identify flashpoints, crime patterns and anti-crime priorities and communicate these to local government and the SAPS;
- Jointly set crime prevention priorities and agree on strategies; and
- Mobilise community-based campaigns and activities and the resources to sustain them.

The following three policies are of great importance for the Safety and Security planning in Ekurhuleni, since they provide a link between the legal requirements for crime prevention and the principles of municipal town planning.

The *White Paper on Local Government* of March 1998, asks that local government should promote integrated spatial and socio-economic development that is socially just and equal for everyone in the community. This implies that crime prevention principles are integrated with other aspects of local development, including economic development. The paper also encourages local governments to form partnerships with organisations in the community, especially where these agencies have expertise that is lacking in local government.

The *Local Government Transition Act* of 1993 compels municipalities to develop integrated development plans (IDPs) for their areas of authority. IDPs aim to integrate the development and management of the area under the jurisdiction of the municipality. The plans incorporate metropolitan land-use planning, transport planning, infrastructure planning and the promotion of integrated

economic development. Financial plans and budgets must be prepared in line with the IDPs. Integrated development is a form of development where different actions support and augment one another by setting up positive interrelationships.

The *Development Facilitation Act (DFA)* of 1995 introduced a new paradigm for planning and development by providing the basis for a coherent framework for land development according to a set of binding principles. This Act provides extraordinary measures to facilitate reconstruction and development. These include transforming planning processes, mechanisms and institutions to allow local governments to take up their new roles of carrying out development.

2.3 CPTED

The central element of the Safety and Security Plan is the concept of CPTED, aimed at reduction of opportunities for crime to occur. The concept is based on the idea that the built environment plays an important role in influencing perceptions of safety – that is, that some environments can impart a feeling of safety, while others can induce fear, even in areas where levels of crime are not high. The solution is to reduce crime by employing urban design features that discourage crime, while at the same time encouraging legitimate use of the environment.

One of the most important attributes connected with this concept is that CPTED encourages safety design without having to resort to “fortress” or “prison camp” approaches to

security. Use of fortress-type construction is minimised, and where necessary, integrated into the overall design, reducing negative visual impact. This approach is also cost-effective, since hardware applications are made during construction rather than added at a later date.

To fully comprehend the manner in which CPTED is to be utilised in Ekurhuleni, we must first examine its components and the philosophy behind them.

2.2.1 ELEMENTS OF A CRIMINAL EVENT

As a starting point we should understand the role of the built environment as an element in crime prevention. The CSIR prepared a "Manual for Community Based Crime Prevention" which outlines the elements of a criminal event as follows:

- a ready, willing and able offender;
- a vulnerable, attractive or provocative target/victim; and
- a favourable environment.

The person committing the crime is referred to as the offender. In a case where property is the target of an offence, this would be described as a hard target. If a person is the target, then he or she is the victim. Thus, the basic elements of a crime can be reduced to three sets of characteristics, namely those of the offender, those of the potential victim/target, and those of the environment or the crime location (the physical location as well as the people and the activities that might deter or encourage the

offender). These elements can be represented in the form of a "crime triangle" as illustrated in the figure below.

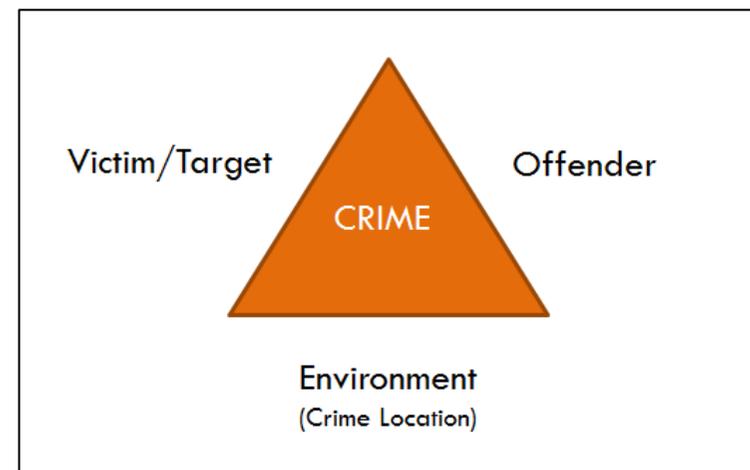


FIGURE 4: THE TRIANGLE OF CRIME

The CSIR manual further states that the physical and social environment can either prevent or enhance the opportunities for crime. Crime prevention can be defined in a different manner by different people. For the police, crime prevention is connected to visible policing, roadblocks, etc. For a social worker it might mean setting up projects to re-integrate a young offender back into society after being arrested for a petty crime. These are very different activities, but they all contribute towards preventing crime. In effect, crime prevention is about stopping crime from happening rather than waiting to respond once offences have been committed.

As an example, much policing activity involves responding to crime: when the police are called to a crime scene they

respond by investigating the case, arresting suspects, and seeking a conviction in court. Many people believe that it is only through action by the police and the courts that crime in South African communities can be reduced. This is usually seen as the 'tough, no-nonsense' approach resulting in punishment to deter offenders from committing crime again. But it is equally important to stop people from committing crime in the first place.

2.4 SAFETY AND SECURITY PRINCIPLES

Prevention, often seen as the 'soft' approach, saves the government vast amounts of money. It also lessens the impact of crime on victims, as well as the destructive effects of imprisonment, particularly on young offenders and petty offenders. It improves the quality of life in communities which, in the long term, helps create a safer environment. More importantly, preventing crime means aiming at the heart of the problem - rather than responding to its symptoms.

Before examining concrete examples of different design types of urban settings, we will first go through the five key principles which will inform the approach to the improvement of the built environments in Region A, namely:

- Surveillance;
- Territoriality;
- Access;
- Aesthetics; and
- Target hardening/Landscaping.

These five principles are crucial to establishing how the physical environment either reduces or increases the opportunities for crime. These principles are not in conflict with other sound planning and design principles. Although they are aimed at creating a safer physical environment, they also support the creation of well performing living environments in general.

2.2.1 SURVEILLANCE

Natural Surveillance is a design concept directed primarily at keeping intruders under observation. It utilises design features to increase the visibility of a property or building. The proper placement and design of windows, lighting, and landscaping increases the ability of those who care to observe intruders as well as regular users, and thus provides the opportunity to challenge inappropriate behaviour or report it to the police or the property owner.

When natural surveillance is used to its greatest advantage, it maximises the potential to deter crime by making the offender's behaviour more easily noticeable to a passing individual, police patrol, or private security detail.



FIGURE 5: TRADITIONAL CORNER HOUSE DEVELOPMENT

Surveillance is improved if there is good visibility. Dark or twisting streets, alleys, entrances and doorways can act as havens for potential offenders and increase residents' and visitors' fear of crime. The way in which lighting is designed and positioned, and the way roads and paths are laid out can obviate many of these problems and render both the physical environments as well as the users visible to others using the environment.

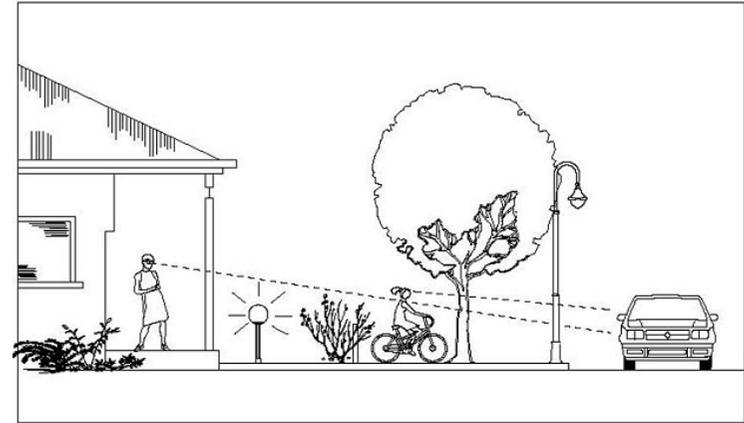


FIGURE 6: GOOD DESIGN FOR SURVEILLANCE

This picture shows how appropriate plants and lighting can allow everyone to see what is happening on and near the street around a home. This reduces the incentive for someone to commit a crime in the area.

Natural surveillance is achieved when provisions are made for good visual connection between residential and/or commercial units and public environments such as streets, common areas, parks, sidewalks, parking areas and alleys. Place activity rooms such as kitchens, living/family rooms and lobbies to allow for good viewing of parking, streets and/or common areas. Managers, doormen, attendants, and security personnel should have extensive views of these areas.

2.2.1 TERRITORIALITY

Territoriality is a sense of ownership of someone’s living or working environment. Territoriality and people’s sense of ownership are encouraged when residents identify with the spaces and where the space and its configuration are legible to them. A strong sense of territoriality also encourages an individual to take control of his or her environment and defend it against attack.

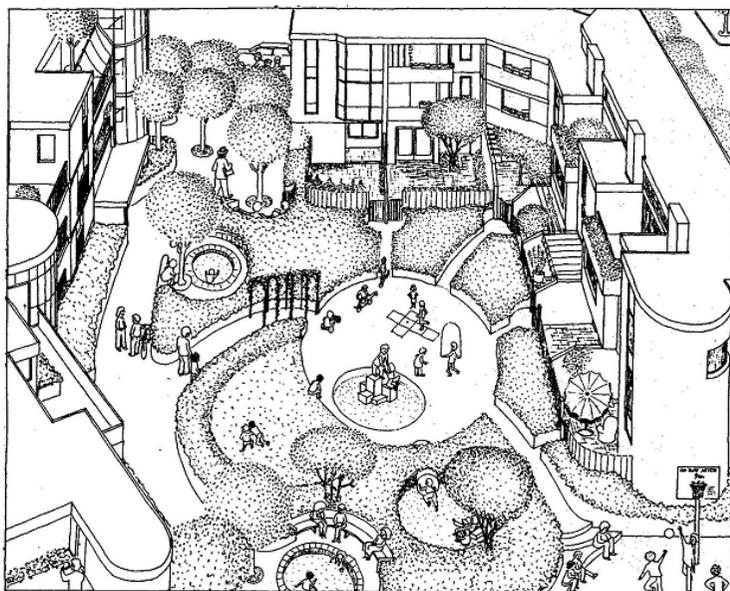


FIGURE 7: DESIGN FOR TERRITORIALITY

The term ownership when used in this context does not necessarily mean actual legal ownership. It can be in most cases a perceived ownership resulting from an individual's

relationship with the environment. Office workers, for instance, may feel a sense of ownership for the office in which they work.



FIGURE 8: NEIGHBOURHOOD CAFÉ, SENSE OF TERRITORIALITY

Territoriality (or territorial reinforcement) employs such design elements as sidewalks, landscaping, and porches to help distinguish between public and private areas and helps residents exhibit signs of “ownership” that send “hands off” messages to would-be offenders. The concept of territorial reinforcement suggests that physical design can create or extend a sphere of territorial influence and potential offenders perceive that territorial influence.

Examples of the latter include walls, landscape and paving patterns to clearly define the space around a unit entry as belonging to (and the responsibility of) the residents of the unit. People take more interest in something they own or when they feel intrinsically involved. Therefore, the environment should be designed to clearly delineate private spaces. Provide obvious defined entries, patios, balconies and terraces. Use low walls, landscape and paving patterns to delineate ownership and responsibility.

A sense of ownership and responsibility for a particular environment improves the likelihood of passive observers intervening (as modulators of a crime). Places should be designed and managed in ways that encourage owners/users to take responsibility for them and feel responsible for their use, upkeep and maintenance. Territoriality can be increased through clearly defining public and private spaces, utilising the human scale, limiting unused open space etc.

2.2.1 ACCESS

Some criminal events and sites are often deliberately chosen for their ease of access to escape routes by the offender prior to perpetrating the crime. Similarly, the availability of access and escape routes also add to the safety of potential victims. Natural access control employs elements like doors, shrubs, fences, and gates to deny admission to a crime target and to create a perception among offenders that there is a risk in selecting the target. The primary thrust of an access

control strategy is to deny access to a crime target and to create a perception of risk to offenders.

Areas of refuge, such as vacant land, where people can hide and which have clear routes of escape from a crime are obvious havens for offenders. For example, houses or neighbourhoods near or adjacent to tracts of open land are often the targets of repeated burglaries. Car hijackings are often planned to allow quick escape. The layout of the transport routes and the juxtaposition of different types of space influence the ease of access and escape.



FIGURE 9: COMMON DEFENSIBLE SPACE

Clear signposting of streets, buildings and exit routes are important ways of assisting potential victims. The design of elements such as subways also needs to be considered

carefully to reduce perceptions that one will not be able to escape from an offender.

Physical and mechanical means of access control-locks, bars, and alarms can supplement natural access control measures if needed. A fence around a neighborhood playground is an example of an access control measure that protects children from wandering off and inhibits entry of potential offenders.

When planning for common open spaces, planners should locate the common areas as centrally as possible or near major circulation paths within the project. Remote locations for common areas should be avoided.

Detailed guidelines for the design of open spaces are provided in the Open Spaces Sectoral Plan of the RSDF for Region A.

2.2.1 AESTHETICS

The image projected by a building or a public area in the city has been clearly linked to levels of crime and particularly to the fear of crime. Urban decay and its resultant degradation make people using these areas feel unsafe. Often this reduces the number of users, which could exacerbate the crime problem.

The good design and the effective management of spaces in the city are necessary factors that prevent precincts from becoming actual or perceived 'hot spots' for crime. Vacant land that is not maintained or unoccupied buildings can both

contribute to decay as do litter and the breakdown of services. The image of spaces can be improved by ensuring human scale in design, using attractive colours or materials, providing adequate lighting, and designing for high levels of activity.

Good lighting is also one of the most effective crime deterrents. When used properly, light discourages criminal activity, enhances natural surveillance opportunities, and reduces fear.



FIGURE 10: LANDSCAPING IN KEMPTON PARK

The type and quantity of light required will vary from application to application, but the goal remains the same in all cases. Bright spots and shadows should be avoided. Highly

vulnerable areas and those that could conceal a potential attacker should be illuminated more brightly than areas designed for normal activity. The object is to light up the criminal without spotlighting the victim.

Lighting also plays a part in the second CPTED principle, namely in creating a feeling of territoriality. Lighting can influence an individual's feelings about his environment from an aesthetic as well as a safety standpoint. A bright, cheerful environment is much more pleasing than one that appears dark and lifeless. The ability to feel good about one's environment is important in developing a sense of pride and ownership.

2.2.1 LANDSCAPING

Target hardening reduces the attractiveness or vulnerability of potential targets by the physical strengthening of building facades or boundary walls. This approach mushroomed since 1994 and is mainly manifested by walls built around houses and burglar bars on windows. Target hardening is often the first solution that occurs to residents and designers because it often physically reduces opportunities for crime. Another form of target hardening that is becoming more prevalent in South Africa is the closing off of streets and neighbourhoods.

However, the common mistake is that in so doing, other principles are violated. If target hardening of buildings obstructs lines of sight or provides havens that cannot be surveyed, the hardening is unlikely to be an effective crime prevention tool.

Another alternative, as opposed to rigid target hardening, is landscaping. Landscaping design is versatile and can be used to perform a variety of design functions. As a symbolic barrier, landscaping can mark the transition between zones. Features such as decorative fencing, flower beds, ground cover, and varied patterns in cement work can clearly show separation between zones. If more substantial barriers are needed, shrubbery such as evergreen hedges can be used to create more formidable obstacles.

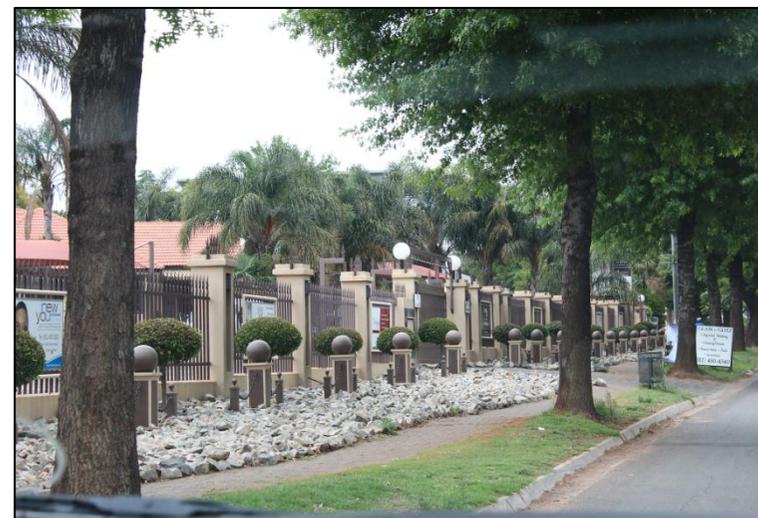


FIGURE 11: STREET FURNITURE IN BEDFORDVIEW

From a surveillance standpoint, landscaping can be critical. Such factors as growth characteristics of plants and their placement in relation to potentially vulnerable areas are extremely important.

Visual corridors must be maintained in open, park-like areas as well as in densely planted areas. As a rule, visual surveillance corridors can be maintained by limiting shrubbery to a maximum height of three feet and trees to a minimum height of six feet at the lowest branches. This approach ensures that visibility between three and six feet from the ground will always be relatively unimpaired.

Another function of landscaping in crime prevention is aesthetics. Again, an attractive environment generates a sense of pride and ownership.

Employing these five principles in combination is proven to increase the possibility of reducing crime. Each principle should not be viewed in isolation and the context within which it is to be applied should be taken into account.

2.5 GENERAL GUIDELINES

If the principles of passive surveillance, territoriality, access and aesthetics are crucial for the safety and security in Region A, then the question is how to achieve this in the context of the built environment in Ekurhuleni? The following recommendations are designed in order to guide the future development in Region A, as well as to change the manner in which we think we should design our urban environments.

A Chapter with more detailed guidelines for different areas of Region A will be provided in the next Draft of this document.

2.2.1 MIXING OF HOUSING AND HOUSEHOLD TYPES IN NEIGHBOURHOODS

Instead of the modernist planning approach of the Apartheid era of a single housing unit detached from the surroundings, there is now substantial support for creating neighbourhoods with wide ranges of different housing types in Ekurhuleni. This provides for a more complex social mix, which some argue is an essential element of a socially sustainable community, in part because it allows people to stay within a neighbourhood while their housing needs change over time.

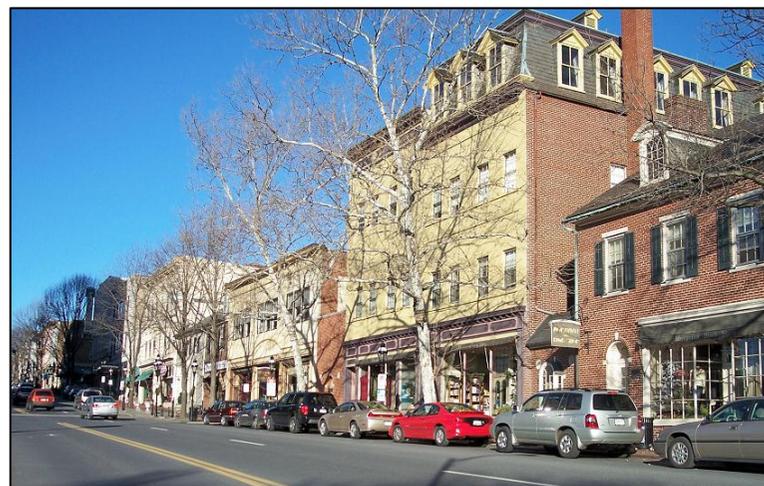


FIGURE 12: SEVERAL HOUSING TYPES ON ONE STREET

Such neighbourhoods could in theory see a mixture of housing types that cater for families with children, young or old couples, empty-nesters, old or young singles and more. Those

housing forms could include apartments, small-lot or conventional detached dwellings, groups of units, terrace houses in groups or on individual lots and more. Such mixtures are already to be found, for example, in many “desirable” inner urban traditional neighbourhoods.

2.2.1 THE MIXING OF LAND USES IN PRECINCTS

The modernist idea of separating different land uses into different areas was an attempt to limit feared negative impacts from one use to another. However, there is now substantial support for the benefits to be gained from mixing a variety of land uses in the one area. Such mixes include denser forms of housing mixed with retail, office, transport, educational and entertainment uses.

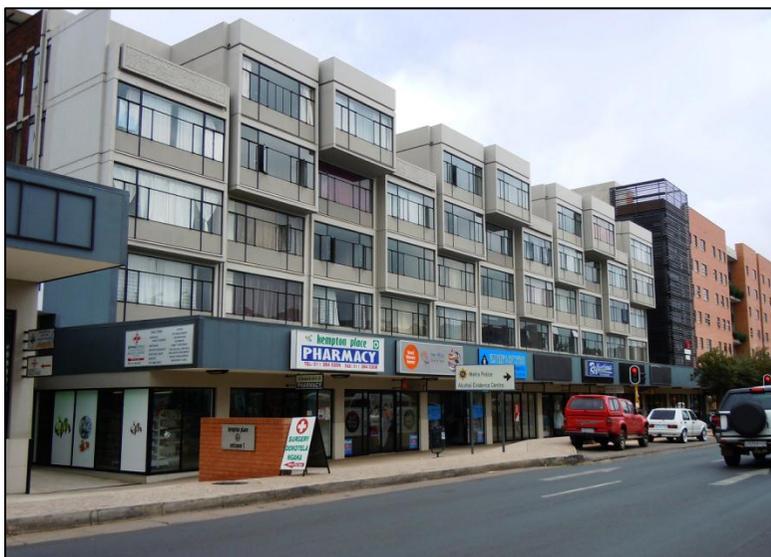


FIGURE 13: A MIXED USE DEVELOPMENT IN EKURHULENI

There are examples throughout Ekurhuleni in both existing and new precincts. This follows both the changing nature of many jobs, the recognition of the low impact of many shops and workplaces on their neighbours and perhaps a desire for the local lifestyle and urbane environments such mixes foster.

2.2.1 CONNECTIVITY OF MOVEMENT

One of the most significant changes in recent times has been the recognition of “connectivity” in the urban environment as a key strategy for many sustainable outcomes, including CPTED.

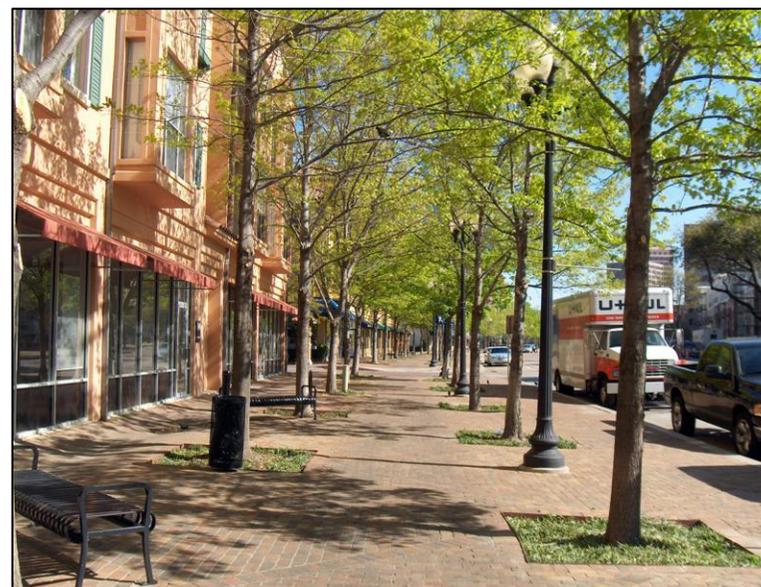


FIGURE 14: PEDESTRIAN SIDEWALK IN THE USA

Connectivity is the extent to which different parts of the neighbourhood (and, in turn, different neighbourhoods) are “connected” so that movement - especially on foot, but also by bicycle, car, public transport and emergency vehicle - is easy, legible, reasonably direct and appropriately flexible.

Highly connected places therefore encourage movement and thus potentially deliver better CPTED outcomes because more people are out and about in the neighbourhood and able to provide surveillance.

2.2.1 THE DESIGN OF URBAN CENTRES

Pedestrian malls were in the 1970s a response to the marketing challenge posed by the new big private centres. From the 1960s, the development of such large car-oriented enclosed shopping malls, surrounded by large areas of car parking and separated from other areas, has been the dominant approach. In recent years, however, partly in response to the changing ideas about land use mix promoted by the DFA, connectivity, pedestrian/vehicle spaces and CPTED understandings, there has been a swing back in urban design thinking towards the traditional Mainstreet-based centres that most 19th and early 20th century Ekurhuleni towns display.

This urban design thinking encourages a pattern of interconnected streets with footpaths creating a range of sites for a variety of buildings, uses and civic places. Such centres are very different from the big boxes which often have blank inactive outside walls and large troubled carparking areas,

especially after hours. The more connected “grid” street-based centres are said to offer many long-term advantages, including an ability, under some circumstances, to integrate the controlled private environment of the “big box” into the activated street network.

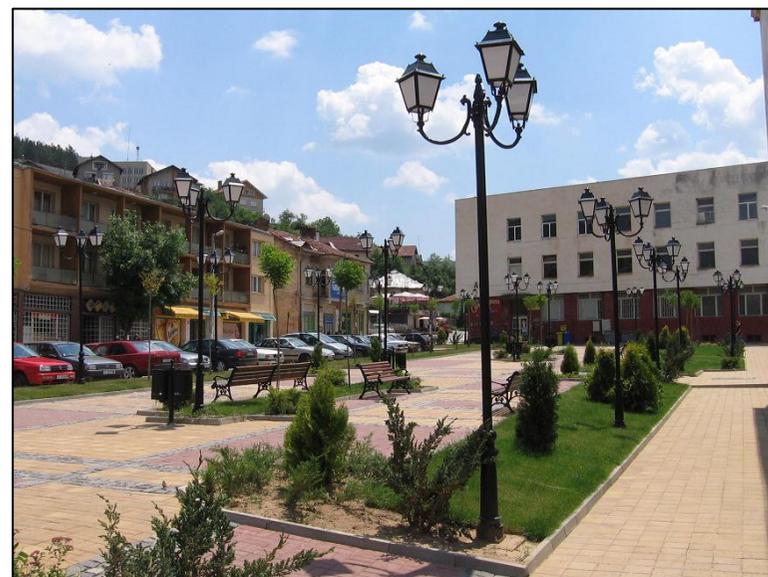


FIGURE 15: URBAN CENTRE IN A TOWN IN EUROPE

The shift in thinking has in no small part been influenced by the CPTED-relevant learning about surveillance, legibility, territoriality, management, vulnerability, connectivity and sense of ownership by the community.

2.2.1 THE PUBLIC SPACES

All the changed emphasis on pedestrian movements in residential and mixed-use neighbourhoods and centres has placed greater focus on the quality of the community’s public realm of streets, footpaths, parks, civic plazas, foreshores and the like. Indeed, there is a growing community expectation for a high quality public realm that is attractive, safe, accessible, varied, sufficient in size and extent, interconnected and equipped. There is a growing consensus that achieving this type of public realm is an essential part of making successful and sustainable human settlements in Ekurhuleni.



FIGURE 16: DEFENSIBLE PUBLIC SQUARE IN ATHENS

This change has great CPTED impact for it sets out, by greater landscape quality, to promote greater enjoyment and use of public places especially by pedestrians and cyclists.

2.2.1 THE DESIGN OF NEIGHBOURHOODS

Partly in response to changing ideas about connectivity, cars, people and mixes of land uses and partly from observation of more traditional precincts in Ekurhuleni, ideas about how best to design neighbourhoods, especially with a significant residential component, have changed. In the 1970s and 1980s, the most significant design fashion (in the pursuit of safer, less trafficked and therefore more pleasant residential streets) was for “tree suburb systems” with many separated and poorly or circuitously connected cul-de-sac ends, and with one tree usually not connected to the next, except by the main road.



FIGURE 17: MAIN STREET IN OLD GERMISTON

Many now argue for a return to more traditional interconnected “grid” neighbourhoods with streets connecting

many times with other streets which are often (but not always) in relatively “simple” lattice layouts. The essential feature is high street connectivity. Such neighbourhoods are to be found in many areas of Ekurhuleni as well as in other South African cities and towns dating from the second half of the 20th century, and represent some of the most desirable, high-amenity and affluent localities.

This change has been supported by experience and research that suggests well connected neighbourhoods (as distinct from more separate “tree” system neighbourhoods) provide choices and flexibility of route (not having to go out and come back the same way), encourage walking and cycling, allow traffic to be managed at the detailed level, permit or facilitate public transport access, facilitate the inclusion of a range of housing types and land uses, and are better able to accommodate desirable change over time.

Public transport, for example, usually can’t operate doubling in and out of a series of unconnected tree systems of culs-de-sac one after another. Instead, it will stay out on the main road decreasing the likelihood of it being used, making the walk to it longer and less safe, and perhaps delivering more lonely bus stops. Having a connected lattice enables a route through a sequence of adjoining neighbourhoods to be chosen, perhaps going past local shops and facilities, overseen by housing, and so delivering a better CPTED outcome.

Encouraging walking and cycling (and where motorists can see them), promoting walking to and from public transport, and having a variety of uses and therefore people in and around the neighbourhood, are all good ways of increasing safety.



FIGURE 18: NEIGHBOURHOOD CAFÉ IN THE NETHERLANDS

Having highly legible layouts might itself encourage use of the public realm and facilitate a sense of ownership. Such experience is therefore consistent with the paradigm shift in South Africa which began with the promulgation of the DFA in 1995.

3 DISASTER MANAGEMENT IN REGION A

The old approach to Disaster Management in South Africa (as well as in most of the world) has been mainly of reactive nature and relief centric. Recently, a paradigm shift has taken place at the national level, shifting the focus from the relief centric approach to holistic and integrated approach with emphasis on prevention, mitigation and preparedness.

This new focus was set by the Disaster Management Act (57 of 2002), and it demands efforts that are aimed at conserving developmental gains as well as minimising losses to lives, livelihood and property. The first document that made legal requirements for the preparation of a municipal disaster management plan was the Municipal Systems Act (32 of 2000). Section 26 of the same act indicates that applicable disaster management plans are a core component of the Integrated Development Plan of a municipality.

The challenge thereof is to develop Disaster Management Guidelines for Region A of Ekurhuleni, which all of the stakeholders in Ekurhuleni are able to comprehend and implement within their own setting and which indicates the procedures and processes required to minimise the threat of disaster utilising a developmental approach. The Disaster Management Guidelines for Region A should inform on the provisions of the Ekurhuleni Corporate Disaster Management Plan.

3.1 DEFINITIONS

3.2.1 DISASTERS

The UN defines “disaster” as a serious disruption of the functioning of a society, causing widespread human, material, or environmental losses which exceed the ability of affected society to cope using only its own resources. Disasters are often classified according to their speed of onset (sudden or slow), or according to their cause (man-made or natural disasters).



FIGURE 19: FLOODING OF AN URBAN AREA

Natural disasters are happening more often, and having an ever more dramatic impact on the world in terms of both their human and economic costs. While the number of lives lost has

declined in the past 20 years - 800,000 people died from natural disasters in the 1990s, compared with 2 million in the 1970s - the number of people affected has risen. Over the past decade, the total affected by natural disasters has tripled to 2 billion.

3.2.1 DISASTER MANAGEMENT

Management consists of decision-making activities undertaken by one or more individuals to direct and coordinate the activities of other people in order to achieve results, which could not be accomplished by any one person acting alone. Management is required when two or more persons combine their efforts and resources to accomplish a goal, which neither can accomplish alone.

Disaster management can be defined as the effective organization, direction and utilization of available counter-disaster resources.

The traditional approach was to provide immediate humanitarian aid (usually rescue teams, materials and medical services) as quickly as possible after the onset of a disaster. There has been a paradigm shift over the last decade.

Modern disaster management goes beyond post-disaster assistance. It now includes pre-disaster planning and preparedness activities, organizational planning, training, information management, public relations and many other fields. The modern view is that there must be pre-disaster

mitigation measures to avoid or reduce impact of disasters. Pre-disaster measures to prevent or mitigate disasters are called Risk Management.

The following is an image of a Disaster Management continuum, as provided in the Ekurhuleni Disaster Management Plan. Its six elements define the complete approach to Disaster Management.

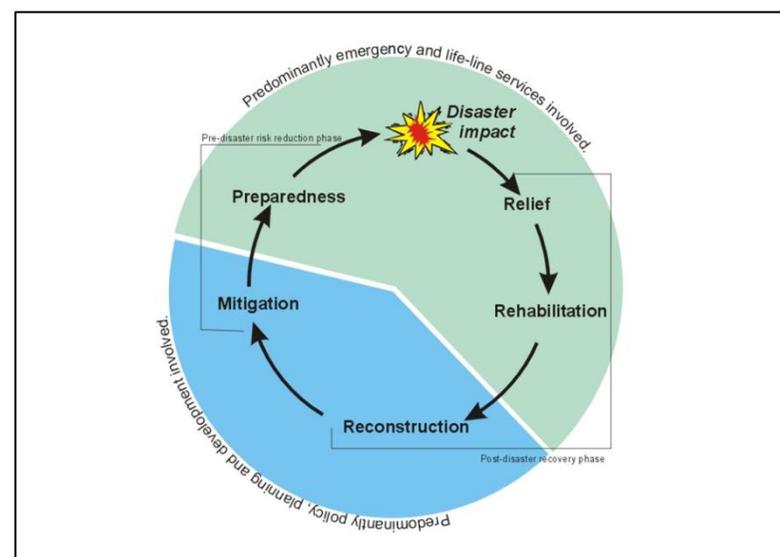


FIGURE 20: DISASTER MANAGEMENT CONTINUUM

Disaster management includes administrative decisions and operational activities that involve:

- Prevention
- Mitigation

- Preparedness
- Response
- Recovery and
- Rehabilitation.

Disaster management involves all levels of government. Non-governmental and community-based organisations play a vital role in the process.

This document focuses mainly on managing the pre-disaster phase.

3.2 RISK SITUATION IN EKURHULENI

According to the UN Bureau for Crisis Prevention and Recovery, some 75% of the world's population live in areas that have been affected at least once, either by an earthquake, a tropical cyclone, flooding or drought between 1980 and 2000.

The EMM is exposed to many hazards, all of which have the potential to disrupt the community, cause damage and create casualties. Possible natural hazards include sinkholes, extreme cold, floods, tornadoes, heavy rain and other violent storms, and earthquakes due to mining and other activities. Other disaster situations could develop from hazardous materials accidents, major transportation accidents, terrorism, or civil disorder.

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3.2.1 MUNICIPAL RISK PROFILE

Major risk factors for the whole of Ekurhuleni include:

Natural Hazards

- Lightning strikes causing fires and / or damage to:
- Power lines
- Residential, commercial and industrial buildings
- Veld fires

Informal settlements

- Floods - especially close to or affecting informal settlements
- Heat wave
- Extreme cold
- Fires in informal settlements
- Subsidence in dolomite areas
- Strong winds and tornadoes
- Earthquakes
- Thunderstorms
- Health related disasters

Technological Hazards

- Hazardous material spills and accidents (roads, rail and air)
- Mine tremors
- Major accidents (especially along the N1, N3, N12, N17, R24 and R21)
- Aircraft crashes (Johannesburg International Airport and Rand Airport)
- Explosion - e.g. (AEL) African Explosives (LTD)
- Sasol Gas pipeline leaks and explosions
- Petronet pipelines
- Rail accidents and derailments

Vulnerabilities

- Residents living in unsafe areas (dolomite, mine dumps, along major road and rail corridors, etc).
- Residents in informal settlements close to hazards, i.e. gas and fuel pipelines, high tension electrical / overhead wires.
- Residents not trained in disaster risk reduction actions and preparedness.
- Lack of awareness of disaster risks.

The extent and area of responsibility for the managing of the risk factors by each municipal stakeholder is included in Chapter 12 of the Ekurhuleni Corporate Disaster Management Plan.

3.3 DISASTER RISK REDUCTION

Disaster risk reduction is the key strategy for disaster management. The implementation of disaster risk reduction strategies, by all departments of the EMM, will result in the integration of these strategies into sustainable development.

The drafting of the strategy should be guided by the following risk reduction actions guidelines:

- Through training, shift the approach from disaster response to risk reduction.
- Integrate risk reduction into sustainable development planning.
- Promulgate by-laws in support of risk reduction.
- Provide for sufficient budget for staffing and administration.
- Maintain the legislative requirement for a Municipal Disaster Management Advisory Forum.
- Keep accurate information on hazards, vulnerability and capacity assessments.
- Ensure risk monitoring capabilities.
- Develop and implement risk assessment and environmental impact assessments and tools.
- Use effective indicators for forecasting and prediction of disasters.
- Implement early warning and dissemination strategies.
- Institute disaster reduction training, education and awareness in schools, the community and other institutions.

- Increase media involvement in disaster risk reduction. (e.g. disaster risk reduction day)
- Continue research into disaster risk reduction.
- Interface between environmental management, city development and disaster risk reduction.
- Develop and implement sustainable livelihood strategies.
- Support urban renewal and local economic sustainable development strategies, i.e. land use planning.
- Ensure effective preparedness, logistic and response planning.
- Develop focal points for Disaster Management within each Customer Care Centre which would bring disaster management to the residents.
- Establish and maintain volunteer units.

3.4 DISASTER RESPONSE

Disaster response consists of relief actions after a disaster and continues with rehabilitation and reconstruction processes and actions in order to return the affected communities to normal while, ensuring that they are not again exposed to the threat in the same manner.

Details related to hazard specific disaster response are confidential and not for publication.

The most important disaster response actions include:

- If possible, early warning of a disaster will be provided either through a loud hailer system or through other means including the use of local radio stations.
- Emergency Services and other response agencies are dispatched to the location of a disaster.
- All responding agencies implement their standard operating procedures for the disaster type.
- Should extraordinary response be required, the Disaster Management Centre is activated and additional human and material resources dispatched in accordance with agreed procedures and Memoranda of Understanding.
- The Provincial and National Disaster Management Centres are simultaneously notified of the disaster.
- Additional national agencies like South African Police Services and the South African National Defence Force are activated as required.
- Disaster assessments are completed and executive decisions on further response is made by the Disaster Management Centre in conjunction with political stakeholders and the community.
- Adjustments to operational plans are made by Divisional Heads of Department as the situation warrants.
- The Disaster Management Team, community leaders and other stakeholders in the affected area(s) lodge a fully fledged assessment e.g. nature/location of incidents, number of people affected, magnitude of damage/losses, risks/potential risks the incidents hosts, for surrounding(s) and or neighbours/adjacent areas, estimated population density and record all findings.

- Detailed reports and progress of the disaster response are provided to the Executive Mayor and the media through the relevant approved structures.
- Rehabilitation and when necessary reconstruction actions are developed once the disaster nears completion and communicated to stakeholders.

3.5 CONCLUSION

The Disaster Management Plan for the Region A of Ekurhuleni is to be understood as a guideline document that informs on the provisions of the national and municipal legislation when it comes to general issues of Disaster Management.

The Ekurhuleni Metropolitan Municipality is a work in progress and will always be that due to the changing nature of society and the environment in which the Municipality is required to function.

This document gears towards reducing disaster risk through stimulating the drafting of sustainable developmental programmes. The plan is further geared towards increasing capacity to disaster response and to increase the ability of manageability of disasters that occur.