WEST RAND DISTRICT MUNICIPALITY

DISASTER MANAGEMENT PLAN

REVISION 10 /2022

'A DISTRICT PREPARED'

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Prepared by the Department: Public Safety of the West Rand District Municipality

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The Disaster Management Plan of the WRDM comprise of two (2) parts being the "Social Vulnerability Plan" and the "Emergency Operations Overview Plan" whereas the first defines the general applicable principles of emergency & disaster management, the mission and objectives of the department, risk & vulnerability assessments as well as the applicable Performance Management System. The latter defines operational principles and overarching procedures.

1. "Social Vulnerability Plan" – This part of the Disaster Management Plan contains the following –

2. "Emergency Operations Overview" - This part of the Disaster Management Plan contains the following –

Message from the Executive Manager: Public Safety

The West Rand district in 2020 and 2021 faced many challenges. The purpose with Revision 10 /2022 of the Disaster Management Plan of the West Rand District Municipality is to reflect on the challenges faced and the manner in which best such challenges and threats should be addressed in a multi-sectoral, multi-disciplinary manner.

This Plan, by no means, contains a collection of all risks and methodologies related to the prevention or mitigation of vulnerability. It seeks to reflect the commitment of the West Rand District Municipality in general and the Department Public Safety in particular, to progressively improve risk & vulnerability awareness to achieve a multi-disciplinary approach towards sustainable development.

This document does not serve the purpose of promoting the district in any manner other than stressing the fact that as a district, we are aware of our challenges and constraints. It seeks to reflect a sincere approach regarding the prevention and mitigation of incidents, emergencies and disasters which, on a daily basis could impede the quality of life of our residents and the endeavours of all stakeholders to consistently seek to improve the quality of life of our peoples.

The key to successful implementation is people. Every stakeholder has a responsibility to become more aware of the risks we face and how best such risks should be prevented and mitigated.

ME KOLOI
MUNICIPAL MANAGER: WEST RAND DISTRICT MUNICIPALITY
July 2022

"SOCIAL VULNERABILITY PLAN"

CHAPTER 1

LEGAL FRAMEWORK

1. BACKGROUND

Local Government Transition Act, 1996

The Local Government Transition Act (2nd Amendment Act), 1996, defines an IDP as follows:

'*--- a plan aimed at the integrated development and management of the area of jurisdiction of the municipality concerned in terms of its powers and duties, and which has been compiled having regard to the general principles contained in Chapter 1 of the Development Facilitation Act, 1995, and, where applicable, having regard to the subject matter of a land development objective contemplated in Chapter 4 of that Act*.'

Local Government Municipal Systems Bill, 1999

The Local Government: Municipal Systems Act, 2000, has the following to say about an IDP:

'*23. Each municipal council must within the first 12 months of its elected term adopt a single, inclusive plan for the development of the municipality which-*

(a) links, integrates and co-ordinates plans, schemes and proposals for the development of the municipality;
(b) aligns the resources and capacity of the municipality for the implementation of the plan;
(c) forms the policy framework and general basis on which annual budgets must be based;
(d) complies with the provisions of this Chapter; and
(e) is compatible with national and provincial development planning requirements binding on the municipality in terms of legislation.'

Constitution

The Constitution of the Republic of South Africa (1996) mandates local government to:

- Provide democratic and accountable government for local communities
- Ensure the provision of services to communities in a sustainable manner
- Promote social and economic development
- Promote a safe and healthy environment
- Encourage the involvement of communities and community organisations in the matters of local government.

White Paper on The White Paper on Local Government (whereas it Local Government contains official government policy) states the following:

'Within any local area many different agencies contribute to development, including national and provincial departments, parastatals, trade unions, community groups and private sector institutions. Developmental local government must provide a vision and leadership for all those who have a role to play in achieving local prosperity. Poor co-ordination between service providers could severely undermine the development effort. Municipalities should actively develop ways to leverage resources and investment from both the public and private sectors to meet development targets.

One of the most important methods for achieving greater co-ordination and integration is integrated development planning. Integrated development plans (IDPs) provide powerful tools for municipalities to facilitate integrated and co-ordinated delivery within their locality.

While strategies for building human settlements may differ between localities, it is clear that the establishment of sustainable and liveable settlements depends on the co-ordination of a range of services and regulations, including land-use planning, household infrastructure, environmental management, transport, health and education, safety and security and housing. Municipalities will need to work closely with other spheres of government and service providers and play an active integrating and co-ordinating role here.

Municipalities face immense challenges in developing sustainable settlements, which meet the needs and improve the quality of life of local communities. To meet these challenges, municipalities will need to understand the various dynamics operating within their area, develop a concrete vision for the area, and strategies for realising and financing that vision in partnership with other stakeholders.

Integrated development planning is a process through which a municipality can establish a development plan for the short, medium and long term. The main steps in producing an IDP are:

❑	An assessment of the current social, economic and environmental reality in the municipal area - the current reality
❑	A determination of community needs through close consultation
❑	Developing a vision for development in the area
❑	An audit of available resources, skills and capacities
❑	A prioritisation of these needs in order of urgency and long-term importance
❑	The development of integrated frameworks and goals to meet these needs
❑	The formulation of strategies to achieve the goals within specific time frames
❑	The implementation of projects and programmes to achieve key goals
❑	The use of monitoring tools to measure impact and performance

While the idea behind IDP's is to build up a comprehensive integrated plan, municipalities cannot plan everything in detail in the first year. Rather, IDP's should empower municipalities to prioritise and strategically focus their activities and resources. An attempt to plan too comprehensively may result in unrealistic plans that lack the human and financial resources for implementation.'

From the abovementioned legislation and policy it is clear that the WRDM, must produce an IDP in order to:

- formulate its longer term development vision for West Rand Region
- identify priority needs within communities
- assess available resources and plan its maximum utilisation in accordance with identified priority needs - focus of actions
- formulate financial sustainability strategies and plans
- ensure multi-sectoral/agency co-ordination within the District.

2. EMERGENCY AND DISASTER MANAGEMENT POLICY, LEGISLATION AND THE IDP

With regard to disaster management the White Paper on Local Government Local Government, states the following:

'Effective disaster management requires that the resources and capabilities of all spheres of government are co-ordinated to prevent disasters where possible, and deal with them effectively where they occurs. Each municipality should proactively plan for the prevention and management of disasters. Municipalities should, through their planning and implementation processes, seek to minimise the vulnerability of communities and protect people who are at risk. The direct involvement of communities in planning and implementation is the most effective way to identify the possible hazards and risks faced by communities, and build a culture of risk reduction. Disaster prevention and preparedness should be an integral part of development policy.'

The White Paper on Disaster Management, states the following:

'A further fundamental purpose of the policy is to advocate an approach to disaster management that focuses on reducing risks - the risk of loss of life, economic loss, and damage to property, especially to those sections of the population who are most vulnerable due to poverty and a general lack of resources. It also aims to protect the environment. This approach involves a shift away from a perception that disasters are rare occurrences managed by emergency rescue and support services. A shared awareness and responsibility needs to be created to reduce risk in our homes, communities, places of work and in society generally.

This requires a significantly improved capacity to track, monitor and disseminate information on phenomena and activities that trigger disaster events. It needs the support of institutional emergency preparedness and response capacity at local, provincial and national levels. It also implies an increased commitment to strategies to prevent disasters and mitigate their severity.

The policy also seeks to integrate this risk reduction strategy into existing and future policies, plans and projects of national, provincial and local government, as well as policies and practices of the private sector.

In short, the policy aims to:

1. Provide an enabling environment for disaster management
2. Promote proactive disaster management through risk reduction programmes
3. Improve South Africa's ability to manage emergencies or disasters and their consequences in a co-ordinated, efficient and effective manner
4. Promote integrated and co-ordinated disaster management through partnerships between different stakeholders and through co-operative relations between all spheres of government
5. Ensure that adequate financial arrangements are in place
6. Promote disaster management training and community awareness.

A complicating factor is that disaster management has become increasingly complex, compared to previous limited responses to natural and human-made events. The field of disasters, emergencies and risks is a rapidly changing one. Today, the field of disaster management raises many questions of morality and principle. It entails operations of greatly varying scale and diversity.

Disaster management seeks to reduce the vulnerability of communities most at risk through improved access to services, development opportunities, information, education and empowerment.

It embraces the body of knowledge, policy and practice associated with humanitarian responses to both natural and technological disasters.

In the context of disaster management specifically, the following capacity building options should be explored:

Public-private sector partnerships in the provision of emergency services. Emergency response expertise in the private sector should be used by municipalities, particularly where they do not have the resources to provide the required services themselves.

The development of community support for disaster prevention and management. Municipalities should enlist the support of communities and local businesses in establishing disaster management plans. Also, disaster management volunteer services should be established, similar to the system of police reservists. This would help to improve capacity and increase public awareness of disaster management.

The policy signifies a shift away from the disproportionate emphasis given to rare major disasters. It seeks to include relatively smaller household and community disasters and the resulting losses borne by different sectors of society. This is of particular significance in the South African context, with its mixture of developed and developing economies.'

The Disaster Management Act, Act 57 of 2002, clearly signifies the inclusion of the official government policy as contained in the White Paper on Disaster Management. The Act further indicates the assigning of the disaster management accountability to Category A and C municipalities, whereas WRDM shall be responsible for the execution of the disaster management function and the establishment of the 'Emergency Operations Centre' for the district as a whole.

The Act requires the assigning of the following 'Functions and duties' to the 'disaster management centre' of the WRDM:

'39. (1) A municipal disaster management office -

(a) must specialise in issues concerning disasters and disaster management in the municipal area;

(b) must promote an integrated and co-ordinated approach to disaster management in the municipal area, with a special emphasis on prevention and mitigation, by –

(i) departments and other administrative units of the municipality, and, in the case of a district municipality, by departments and other administrative units of the local municipalities in the area of the district municipality;
(ii) all municipal public entities as defined in section 1 of the Local Government: Municipal Finance Management Act, 2000 (Act No 57 of 2000), operating in the municipal area; and
(iii) other municipal role players involved in disaster management in the municipal area;

(c) must act as a repository and conduit for information concerning disasters, impending disasters and disaster management in the municipality;

(d) may act as an advisory and consultative body for organs of state, the private sector, non-governmental organisations, communities and individuals, on issues concerning disasters and disaster management in the municipal area;

(e) (e) may initiate and facilitate efforts to make funds available for disaster management;

(f) (f) may make recommendations –

(i) on draft legislation affecting this Act, the national disaster management framework or any other disaster management issue; or
(ii) for the alignment of municipal legislation with this Act and the national disaster management framework;

(g) must perform any functions and may exercise any powers delegated to it in terms of section 14; and

(h) must perform the other duties and may exercise the other powers assigned to it in terms of this Act.

(2) A municipal disaster management office may engage in any lawful activity in the municipal area, whether alone or together with any other organisation, aimed at promoting its objectives.

(3) A municipal disaster management office must perform its functions -

(a) within the national disaster management framework;
(b) subject to the municipality's integrated development plan and other policy directions of the municipal council acting within the national disaster management framework; and
(c) in accordance with the administrative instructions of the municipal manager.

(4) A municipal disaster management office must liaise with and co-ordinate its activities with those of the Centre and the relevant provincial disaster management office.

Head of disaster management centre

40. The head of a municipal disaster management office:

(a) is responsible for the performance by the office of its functions and the exercise of its powers; and
(b) takes all decisions of the office in the performance of its functions and the exercise of its powers, except those decisions taken by another person in consequence of a delegation by the head of the office.

Assistance to the National Disaster Management Centre

41.(1) A municipal disaster management office must assist the Centre at the Centre's request –

(a) to identify and establish communication links with disaster management role players in the municipal area for the purposes of section 16;
(b) to develop and maintain the disaster management electronic databank as envisaged in section 17 in so far as the databank applies to the municipality;
(c) to develop guidelines in terms of section 19 for the

i) preparation and regular review of disaster management plans and strategies, including contingency plans and emergency procedures;
ii) the integration of the concept and principles of disaster management, and particularly prevention and mitigation strategies, with development plans and programmes.

(2)(a) The disaster management office of a municipality may, by notice in writing, request any person in possession of information required by that office for the purpose of subsection (1)(a) or (b), including any department, structure or statutory functionary in the municipality, or, if it is a district municipality, any department, structure or statutory functionary in a local municipality within the area of the district municipality, to provide the required information to the office within a period determined by the office.
(b) If a department, structure or statutory functionary in a municipality fails to comply with a request in terms of paragraph (a) the municipal disaster management office must report the failure to the municipal manager, who must take such steps as may be necessary to secure compliance with the request.

The Act determines the following obligations of municipalities

'Disaster management plans for municipal areas

44. (1) Each metropolitan and each district municipality must prepare a disaster management plan for its area according to the circumstances prevailing in the area.

(2) A disaster management plan for a municipal area must -
(a) Form an integral part of the municipality's integrated development plan;
(b) anticipate the types of disaster that might occur in the area and their possible effects;

(c) identify the communities at risk;
(d) provide for appropriate prevention and mitigation strategies;
(e) identify and address weaknesses in capacity to deal with possible disasters;
(f) facilitate maximum emergency preparedness; and
(g) contain contingency plans and emergency procedures in the event of a disaster, providing for -
    (i) the allocation of responsibilities to the various role players and co-ordination in the carrying out of those responsibilities;
    (ii) prompt disaster response and relief;
    (iii) the procurement of essential goods and the provisioning of essential services;
    (iv) the establishment of strategic communication links;
    (v) the dissemination of information; and
    (vi) other matters that may be prescribed.

(3) A district municipality must prepare its disaster management office after consultation with the local municipalities within its area.

(4) A municipality must submit a copy of its disaster management plan, and any amendment to the plan, to the Centre.'

3. EMERGENCY AND DISASTER MANAGEMENT AND ENDEMIC CRIME

The White Paper on Local Government, inter alia, has the following to say about co-operative government with regard to the relationship between local government and the Department of Safety and Security:

'The Department of Safety and Security's National Crime Prevention Strategy has four pillars, namely:

- Re-engineering the criminal justice system.
- Environmental design to promote safety and security.
- Promoting public values and education.
- Transnational crime.

Local government will be expected to play a key role in the second and third of these pillars: strategising and implementing social crime prevention measures to promote healthy, prosperous and well informed communities in which criminal activity has little opportunity to flourish.

The Department also envisages an overhaul of the present system of community policing forums and their replacement with a system based on municipal public safety committees.

The Department of Defence assist in the crime prevention function of disaster management and civil aid capabilities.'

4. DISASTER MANAGEMENT AND LOCAL ECONOMIC DEVELOPMENT

The guideline document 'Linking Local Economic Development to Poverty Alleviation', issued by the Department of Provincial Affairs and Constitutional Development in support of the White Paper on Local Government (Section B, Paragraph 1.3), provides the following guidelines pertaining to Local Economic Development and alleviation of poverty as well as the specific role of local government:

Overall five broad areas of municipal policy intervention has been identified, based on experience in the developing world of poverty alleviation measures by local government. These areas of municipal policy intervention relate to:

- regulatory frameworks;
- access to municipal services;
- employment creation;
- security and protection from crime and natural disasters; and
- co-ordination and integration.

The asset base of the poor may be eroded dramatically by the negative consequences of crime, violence or by the impact of disasters such as floods or environmental hazards. Security and protection for the poor are, therefore, critical dimensions of all survival strategies, particularly in what are generally hostile urban settings. Security relates to both individuals and their property while protection is interpreted more broadly to encompass protection from environmental disasters such as floods, fires or pollution.

The poor often are the group most vulnerable to environmental degradation. They live on the most marginal land, often in overcrowded conditions. Lack of access to sewerage, sanitation or waste disposal services can have a harmful effect on the poor, who can least afford to bear these costs. The poor are also those most at risk in cases of major floods, fires, earthquakes or other hazards. Protection of the poor from environmental degradation is thus a key element in anti-poverty strategies at the local level. The most important step is for municipalities to become more aware of environmental risk and its incidence amongst different groups in the population and to prepare contingency programmes for emergency relief and measures for disaster prevention.'

From an emergency and disaster management point of view, local economic development, and its associated programmes, cannot be effectively implemented without (a) the establishment and maintaining of a stable and safe social environment and (b) ensuring that strategies and programmes are focused on the most vulnerable to natural and man-made emergencies and disasters. Development activities must be aimed at the reduction of vulnerability and not creating the danger of further losses or vulnerability. Example: One should not simply induce small-scale business into an informal, poor, area, without attending to crime curbing programmes and the illegal immigrant problem first. Small businesses could become fertile ground for an escalation of criminal activities enhancing vulnerability. Likewise business activities in the rural areas cannot be promoted without addressing the impact of the potential increase in ground water pollution. Without achieving this balance, local economic development could promote vulnerability.

5. WRDM DISASTER MANAGEMENT FRAMEWORK

The Department Public Safety has drafted and submitted a Disaster Management Framework for the WRDM to the WRDM's Council. Council has approved and adopted the new framework on 30 July 2020. Due to the nature of this document, and since it can change it is attached hereto as Annexure A.

6. SUMMARY

The Department Public Safety comprise of the following service elements aimed at rendering of effective pro-active and reactive public safety services in the West Rand District –

Pro-active services (Prevention & mitigation)

- Fire Risk Management
- Social Crime Management
- Disaster Management (Major elements including risk & vulnerability assessments, pro-active preventative and mitigation planning and community training & empowerment)

Reactive services (Response, recovery & rehabilitation)

- Fire Response Services
- Rescue Response Services
- Ambulance Response Services (comprising of both Basic Life Support and Intermediate Life Support)
- Advanced Life Support (Paramedic Support)
- Disaster Management Recovery & Rehabilitation and Reconstruction

Support Services (Key strategic thrusts enabling effective service delivery)

- Emergency Operations Centre (Emergency Communication)
- Training & Community Empowerment (including effective public relations)

PRO-ACTIVE SERVICES – Primary Legal & policy obligations

FUNCTIONAL RESPONSIBILITY	LEGAL FRAMEWORK
Fire Risk Management	Fire Brigade Services Act, 1987
	National Standards Act, 1993
	Health Act, 1977 (Major Hazardous Installations Regulations)
	Local Government: Municipal Structures Amendment Act, 2000
	Explosives Act, 1977
	Hazardous Substances Act, 1973
	Occupational Health & Safety Act, 1993
	National Building Regulations & Building Standards Act, 1977
	Road Traffic Act, 1989 (pertaining to the transportation of hazardous substances)
	NFPA Standards
	SANS 10400 Standard
	Criminal Procedures Act, 1977 (pertaining to the taking of punitive steps)
	National Veld and Forest Fire Act, 1998

	Provincial Strategic Policy Framework
	WRDM By-laws

FUNCTIONAL RESPONSIBILITY	LEGAL FRAMEWORK
Community Safety	National Crime Prevention Strategy
	White Paper on Local Government
	White Paper on Safety & Security
	Municipal by-laws
Disaster Management	Disaster Management Act, Act 57 of 2002
	Health Act, 1977 (Major Hazardous Installations Regulations)
	National Veld and Forest Fire Act, 1998
	Local Government: Municipal Systems Act, 2000
	White Paper on Local Government
	National Water Act, 1998
	National Environmental Management Act, 1998
	White Paper on Safety & Security
	White Paper on Disaster Management

REACTIVE SERVICES – Primary Legal & policy obligations

FUNCTIONAL RESPONSIBILITY	LEGAL FRAMEWORK
Fire Response Services	Fire Brigade Services Act, 1987
	National Standards Act, 1993
	Health Act, 1977 (Major Hazardous Installations Regulations)
	Local Government: Municipal Structures Amendment Act, 2000
	NFPA Standards
	Hazardous Substances Act, 1973
	Occupational Health & Safety Act, 1993
	SANS 10090 Standard
	Road Traffic Act, 1989 (pertaining to the transportation of hazardous substances)
	National Water Act, 1998
	National Environmental Management, Act, 1998
	National Veld & Forest Fire Act, 1998
	Provincial Strategic Policy Framework
	WRDM By-Laws
Rescue Response Services	Fire Brigade Services Act, 1987
	Provincial EMS Act, 2002
	Medical, Dental and Supplementary Health Service Professions Act, 1974 (Regulations pertaining to the rendering of Emergency Care)
	HPCSA Protocols issued in accordance with the provisions of the Health Act (pertaining to Intermediate Life Support)
	NFPA Rescue Standard 1006 & 1670
	Memorandum of Agreement
	WRDM By-Laws
Disaster Management	Disaster Management Act, Act 57 of 2002
	Regulations

SUPPORT SERVICES – Primary Legal & policy obligations

FUNCTIONAL RESPONSIBILITY	LEGAL FRAMEWORK
Training & Community Empowerment	Fire Brigade Services Act, 1987
	National Veld & Forest Fire Act, 1998
	Local Government: Municipal Structures Amendment Act, 2000
	Provincial Strategic Policy Framework
	SANS Standards
	NFPA Standards
	HPCSA Standards
	Disaster Management Act, 2002
	Medical, Dental and Supplementary Health Service Professions Act, 1974 (Regulations pertaining to the rendering of Emergency Care)
Emergency Operations Centre	SANS Standards
	National Emergency Telephone Services Act, 1993
	Disaster Management Act, Act57 of 2002
	Memorandum of Agreement

All key performance areas are determined either by legislation, policy or norms & standards issued in terms of specific legislation. The questions, 'What has to be done', 'why must it be done' and 'how must it be done' are thus answered by means of statutory and policy prescription and similarly the powers, duties and de jure obligations of staff members, are defined in the abovementioned legislation, policies and norms & standards.

CHAPTER 2

CAUSAL FACTORS OF EMERGENCIES AND DISASTERS

In its Disaster Management Training Programme, the United Nations lists the following factors as the main causal factors of emergencies and disasters world wide -

- poverty
- rapid urbanisation
- population growth
- environmental degradation
- transition in cultural practices
- lack of awareness and information
- war and civil strive
- abuse of technology.

1. POVERTY

The most important single influence on the impact of a disaster is poverty. All other factors could be lessened if the affected community was not also limited by poverty. Virtually all disaster studies show that the wealthiest of the population either survive the disaster unaffected or are able to recover quickly. Across the broad spectrum of disasters, poverty generally makes people vulnerable to the impact of hazards. Poverty explains why people in urban areas are forced to live on hills that are prone to landslides, or why people settle near rivers that invariably flood its banks. Poverty explains why droughts claim poor peasant farmers as victims and rarely the wealthy and why famines more often than not are the result of a lack of purchasing power to buy food rather than an absence of food. Increasingly poverty also explains why many people are forced to move from their homes in rural areas to other parts of their countries or even across borders to survive.

Poverty increases pressure on available resources as the poor could hardly afford such services as health services, water and sanitation. Poverty is the single most significant factor in increasing community vulnerability.

2. RAPID URBANISATION

Rapid population growth and migration are related to the major phenomenon of rapid urbanisation. This process is also accelerated in developing countries. It is characterised by the rural poor or civilians in an area of conflict moving to metropolitan/urban areas in search of economic opportunities and security. These massive numbers of urban poor increasingly find fewer options for availability of safe and desirable places to build their houses. Here again, competition for scarce resources, an inevitable consequence of rapid urbanisation, can lead to human-made disasters.

Many landslides or flooding disasters are closely linked to rapid and unchecked urbanisation, which forces low-income families to settle on the slopes of steep hillsides or ravines, or along the banks of flood-prone rivers.

3. POPULATION GROWTH

There is an obvious connection between the increase in losses from a disaster and the increase in population. If there are more people and structures where a disaster strikes, then it is likely that there will be more of an impact. The growth of the population has been so spectacular that it is inevitable that more people will be affected by disasters because more will be forced to live and work in unsafe areas thus persistently enhancing vulnerability. Increasing numbers of people will be competing for a limited amount of resources (such as, employment opportunities and land), which can lead to conflict. This conflict may result in crisis-induced migration. Such growth occurs predominantly in developing countries resulting in various contributors to disasters.

4. ENVIRONMENTAL DEGRADATION

Many disasters are either caused or exacerbated by environmental degradation. Deforestation leads to rapid rain runoff, which contributes to flooding. Likewise, the destruction of wetlands and mangrove swamps increases flood risks. The creation of drought conditions - and the relative severity and length of time the drought lasts - is mainly a natural phenomenon. Drought conditions may be exacerbated by poor cropping patterns, overgrazing, the stripping of topsoil, poor conservation techniques, depletion of both the surface and subsurface water supply, and, to an extent, unchecked urbanisation.

5. TRANSITION IN CULTURAL PRACTICES

Many of the inevitable changes that occur in all societies lead to an increase in the societies' vulnerability to disasters. Obviously, all societies are constantly changing and in a continual state of transition. These transitions are often extremely disruptive and uneven, leaving gaps in social coping mechanisms and technology. These transitions include nomadic populations that become sedentary, rural people who move to urban areas, and both rural and urban people who move from one economic level to another. More broadly, these examples are typical of a shift from non-industrialised to industrialised societies.

One example of the impact of these transitions is the introduction of new construction materials and building designs in a society that is accustomed to traditional materials and designs. This often results in new materials being used incorrectly. In disaster prone areas, inadequate new construction techniques may lead to houses that cannot withstand high winds or storms.

Compounding this problem is the new community where the disaster survivors find themselves may not have a social support system or network to assist in the relief and recovery from the disaster. The traditional coping mechanisms may not exist in the new

setting and the population becomes increasingly dependent on outside interveners to help in this process.

Conflicting as well as transitional cultural practices can also lead to civil conflict, for example, because of communal violence triggered by religious differences.

6. LACK OF AWARENESS AND INFORMATION

Disasters can also happen because people vulnerable to it simply did not know how to get out of harm's way or to take protective measures. This ignorance may not necessarily be a function of poverty, but a lack of awareness of what measures can be taken to build safe structures on safe locations. Perhaps some people did not know where to turn for assistance in times of acute distress. Nevertheless, this point should not be taken as a justification for ignoring the coping mechanisms of many people affected by disasters.

It is, however, unfortunately also true that the urbanisation pressure often cannot effectively managed by organs of state as a result of lack of technical awareness, qualifications and skills. One example of such lack of awareness is the rapid development of low-cost housing schemes where additional water run-off is created without the concurrent development of applicable storm water drainage systems.

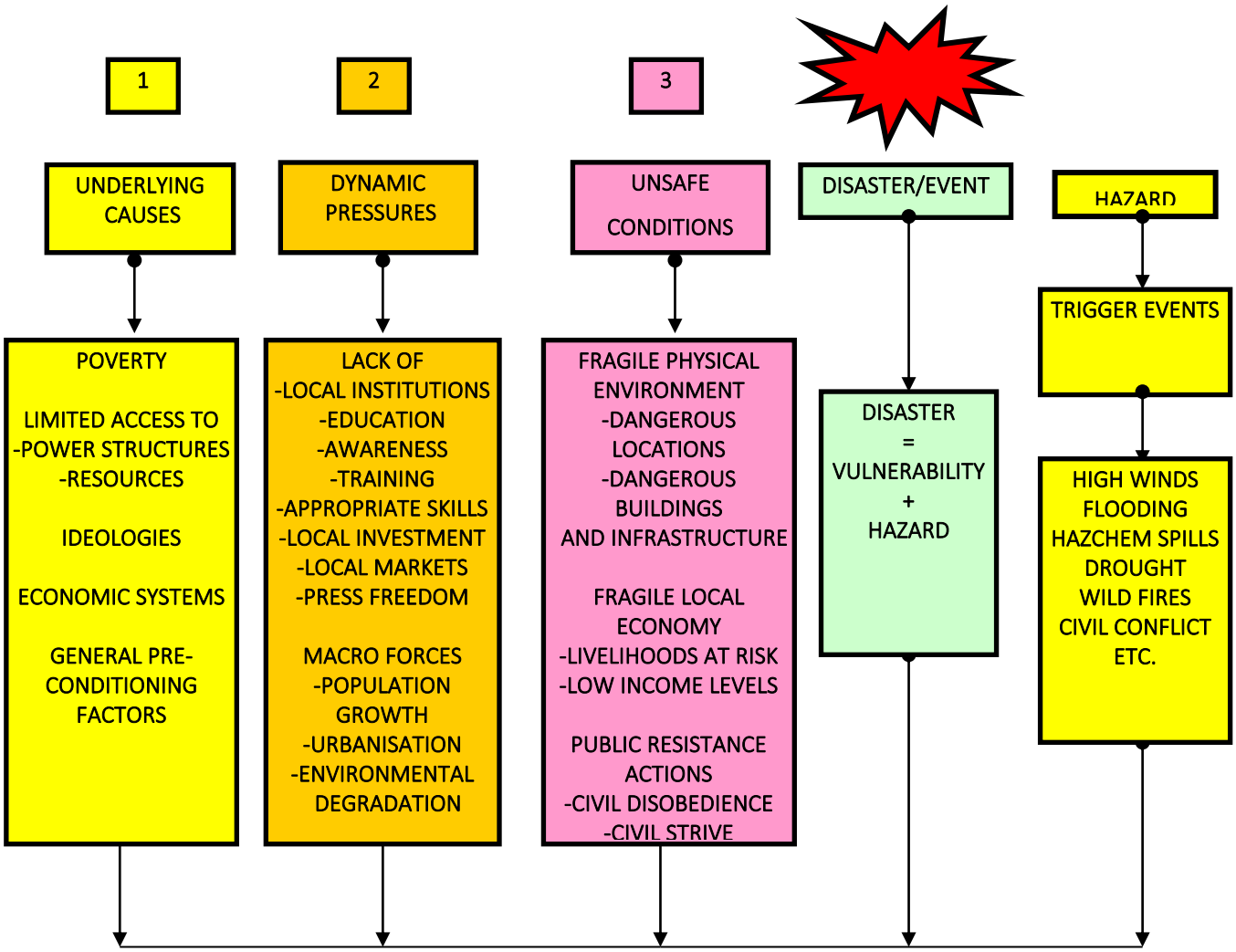
7. WAR AND CIVIL STRIVE

In this context war and civil strife are regarded as hazards, that is, extreme events that produce disasters. War and civil strife often result in displaced people, disruption of societal functioning and enormous economic losses. The causal factors of war and civil strive include competition for scarce resources, religious or ethnic intolerance and ideological differences.

8. ABUSE OF TECHNOLOGY

The placement and use of technology involving hazardous materials close to urban settings poses a very distinct threat. In the past a cloud of secrecy covered many major South African industries, often resulting in such industries polluting the neighbouring environment. Many modern day examples of the consequences of the abuse of technology could be used, such as the Bhopal disaster, the Chernobyl disaster, the Iscor pollution of the nearby areas of Linkholm, Steelvalley and Louisrus in the Vaal River area and the recent river pollution in the Nelspruit area by Sappi.

9. THE PROGRESSION OF VULNERABILITY



10. PLANNING

Winter and summer planning forms a very important role in preparedness and the ability to mitigate and prevent disasters. Every year with the input from communities and other roll players, the WRDM drafts a new focussed summer and winter plan just before the season. The season plan is also submitted to the Gauteng Provincial Disaster Management Centre. Due to the nature of this document, and since it can change it is attached hereto as Annexures. The summer plan is referred to as Annexure B and the Winter Plan is Annexure C.

11. TYPES OF EMERGENCIES AND DISASTERS

11.1 Compound and complex disasters

Increasingly throughout many parts of the world one type of hazard can trigger a disaster, which in turn triggers another hazard and subsequent disaster. For example, a drought may lead to a famine, which in turn leads to civil conflict resulting in the mass displacement of people. A flood may force people to seek refuge across an international border where conflicts ensue between refugees and local communities.

Such compound hazards and disasters need not happen sequentially, they can also occur simultaneously. Thus, people caught between contending forces in a civil war find that in the midst of a major drought they have no means either to grow food or to receive outside assistance.

In a growing number of countries, complex disasters are also becoming more evident. Essentially a complex disaster is a form of human-made emergency in which the cause of the emergency as well as the assistance to the afflicted are bound by intense levels of political considerations. The single most prevalent political condition of a complex emergency is civil conflict, resulting in a collapse of political authority in all or part of a country. In such cases, at least one of three situations arise:

1. The government's ability to assist the disaster-afflicted becomes severely constrained.

2. The government becomes extremely suspicious of or uninterested in afflicted people who have fled from non-government to government-controlled areas.

3. The government or opposition groups create or compound a disaster through actions that generate refugees and the mass displacement of people.

In fact, many affected people live in areas outside of government control. They are often the persons who are most in need and they are often the most difficult to reach with aid. The disaster becomes complex because either the collapse or diffusion of political control makes assistance highly problematic. Africa has, unfortunately become known for its ability to create complex emergencies and in many countries on the continent each disaster spells the possibility of yet another unstable political situation. The protection of

democracy and organs of state therefore is of ongoing critical importance to any professional disaster manager.

11.2 Rapid and slow-onset emergencies & disasters

Rapid-onset disasters could be described as those incidents of little or now warning such as sudden storms and/or floods and major wildland fires. These emergencies and disasters are often preceded by climatological warnings issued by the Weather Bureau - its occurrence, locality and duration often predicated with accuracy.

Slow-onset disasters are those events gradually moving onto communities such as the HIV/AIDS pandemic, endemic crime, and droughts. A distinct characteristic of slow-onset disasters is the fact that when the consequences become evident, the disaster has already progressed beyond the mitigation and prevention phases of disaster management. Often a further characteristic is the fact that by and large the public cannot foresee the impending consequences and do not attend to warnings.

11.3 Examples of typical hazards, which could lead to emergencies & disasters.

NATURAL	MAN-MADE/TECHNOLOGICAL
Drought	Dam collapse
Epidemic	Disturbance - civil disorder - displaced persons/refugees - sabotage - strikes - terrorism
Extreme cold	Economic emergency
Extreme heat	Hazardous materials
Wildland fires	- air pollutants - chemical spillages - explosive devices - microbiological spillages - oil spills - pesticides - radiological contaminants - toxic substances
Floods	Transportation accidents - air - road - railroad - pipeline
Landslides	Disruption of essential services
Resource shortages	Disruption of transportation services
Severe storms	War & civil strive

11.4 Pandemics and Outbreaks

During 2020 and 2021 South Africa and the rest of the entire globe was faced with the outbreak of COVID-19. This (and also other outbreaks like Ebola) has forced the WRDM to form part of the Gauteng Health Department's Outbreak Response Team (ORT). The WRDM has drafted a West Rand nCoV Preparedness plan, attached as an annexure. However, it needs to be noted that outbreaks are something that does occur from time to time and preparedness needs to be in place at all times. Due to the nature of this document, and since it can change it is attached hereto as Annexure D.

12. CONCLUSION

The magnitude of each emergency and disaster, measured in deaths, damage, or costs for a given developing country increases with the increased marginalisation of the population. This is caused by a high birth rate, HIV/AIDS, problems with land tenure and economic opportunity and the lack or misallocation of resources to meet the basic human needs of an expanding and developing population.

Emergencies and disasters have the potential to interrupt ongoing development programs and often divert resources away from originally planned development uses. It could have a severe negative impact on the incentive for further investment - with specific reference to international investment. Investors need a climate of stability and certainty to be encouraged to risk their money. The occurrence of emergencies and disasters further clouds the investment picture when it has caused loss of employment and resulting in stagnation, which limits overall growth.

Emergencies and disasters have special negative impacts on the non-formal sector where approximate costs of disasters are often underestimated. It depresses the non-formal economy through the direct costs of lost equipment and housing. The stress to a country or community caused by emergencies and disasters often result in the destabilisation of government. This may occur for several reasons.

It is particularly developing countries around the globe vulnerable to the consequences of disasters - countries which economies simply cannot absorb the massive negative impacts of emergencies and disasters.

CHAPTER 3

SIGNIFICANT PRINCIPLES OF EMERGENCIES AND DISASTERS

1. INTRODUCTION

The significance of emergencies and disasters in today's environment sometimes comes under question. Why do we need to bother so much? After all, emergencies and disasters have been with us if recorded history and even longer. Generations of people had to contend with the consequences of emergencies and disasters. Recently a new breed of radical laizess-faire thinkers even argues that because of man's intervention with the forces of nature, the world is over-populated resulting in the serious degradation of the environment, which sustains life on earth. These radicals advocate a laizess-faire (let be what will be) approach to emergencies and disasters - people must die to sustain life on earth.

It speaks for itself that no democratic society could support the questioning of government's responsibility towards the protecting of live and property. Such arguments would be in direct conflict with the very grass-root existence of societies, and, specifically in conflict with the Constitutional provisions in South Africa.

To put the worldwide emphasis on emergency and disaster management into perspective there are certain factors which need to be considered in relation to the modern challenges which face the management of such events.

2. BASIC PUBLIC AWARENESS AND PERCEPTION

In a study conducted by Messrs Cutlip and Center, in the United States in 1979, the following key principles were established:

- By and large public opinion does not foresee emergencies and disasters, they only react to it
- Public reaction to emergencies and disasters are normally severe/extreme
- Following emergencies and disasters public opinion becomes overly critical of their leadership.

In the field of emergency and disaster management and the process of public vulnerability management, these principles are key to the understanding of functional dynamics. In recent years in South Africa, it is nothing strange to see persons being sentenced to imprisonment as result of negligence in reaction to public opinion. An excellent example in this regard is the sentences (up to 15 years) given to senior mine officials following the Virginia disaster.

Public officials must know, that, following emergencies and disasters there can be no excuse for not effecting appropriate and focused emergency and disaster management

planning. Officials must also expect investigations, criticism and public outrage following emergencies and disasters - they must expect the seeking of scapegoats.

These realities, however, also burdens emergency and disaster management functionaries, as often their seniors and political leadership do not adhere to advise given or pleas for assistance. It is imperative that officials within the field of emergency and disaster management regularly, and, in writing, report public hazards, risks and vulnerability to senior management and political leadership. Convincing senior management and the political leadership of risks, hazards and public vulnerability requires exceptional communication skills, commitment, and tenacity. It cannot be expected of the political leadership to have insight or to reflect an understanding of complex public vulnerability issues simply because of the possible consequences of emergencies and disasters. Emergency and disaster management officials must be professionally trained in all aspects of disaster management in order to base their actions on specific skills and knowledge of the field of emergency and disaster management. Such training must be supported with management skills training to establish the ability to paint clear pictures of realistic objectives and the route to attain those emergency and disaster management goals.

3. THE TRADITIONAL DISASTER THREAT

There has not been much reduction in what might be called the traditional disaster threat. Most of the old problems remain, as threatening as ever. Natural phenomena such as earthquakes, cyclones, wildfires, floods, landslides, and droughts persist. So do their man-made counterparts, such as major accidents. These events continue to cause grievous human casualties, economic and social loss, and damage to the environment. It is certainly true that we have learned to cope with these problems to some extent - but we have neither eliminated nor contained them. So, whilst we may have modified their effects in various ways, it continues to inflict unacceptable pressure on a world population, which, in terms of total subsistence, is already finding it difficult to make ends meet.

In fact, some of the long-standing threats have grown more severe and we ourselves have added to the risks. Increasing population alone has forced people to live in disaster prone, unsafe areas and the uncontrolled use, and, in many cases, abuse of technology is no longer only serving mankind, and it is also threatening its very existence.

4. THE NEW DISASTER THREATS

Since World War II new disaster threats bears upon today's situation. Increased social violence within societies has drastically affected many nations and communities. Instances of high jacking, terrorism, civil unrest, violent crimes, and conflict have become commonplace. These have become substantial threats to every fibre of society and have inflicted intolerable burdens on governments and societies whose existence is already precarious because of poverty, unemployment and general poor social conditions associated with poverty.

The general use of hazardous materials or substances in and around major urban compartments poses a new threat. The tragedies of Bhopal and Chernobyl are still fresh whilst the pollution problem in the Vaal area associated with the activities of Iscor is a good example of unchecked abuse of technology to the detriment of mankind. Hazardous materials are being shifted around the transport systems in increasing amounts and dumped in areas, which are vital to the future of our world. These materials, and its long-term implications constitute a threat, which is potentially comparable to those posed by many of the natural phenomena. These threats are human driven - driven by powerful corporations and even governments - corporations and governments to be confronted and exposed by emergency management officials despite the consequences.

The new disaster threats contain some unwelcome characteristics in that it may have extremely far-ranging effects and at the same time, be difficult to counter. Countering these threats requires knowledge, commitment, and tenacity.

A specific alarming new disaster threat is uncontrolled and rapid development without careful and comprehensive planning of such developments.

5. THE GEOGRAPHY OF EMERGENCIES AND DISASTERS

The most significant factor is that developing countries often, fall victim to major catastrophes and therefore faces repeated setbacks in their developing progress. Indeed, some countries seem destined to remain within the developing category primarily because of the severity and magnitude of their emergencies and disasters - caused by their inability to cope with traditional hazards and the new threats. Seen in this light, therefore, emergencies and disaster can be a strong aggravating factor in the differences between the 'have's' and the 'have-nots' resulting in disparity gaps within societies deepening - disparities which could lead to civil unrest.

6. THE MODERN-DAY LOSS FACTOR

A next factor is the relationship between the contemporary threat and the losses it many impose. The simple fact is that the more development takes place, the more stands to be lost. It therefore follows that any action, which can be taken to reduce disaster-related losses, must be logical and desirable in cost-benefit terms. It is not wise, for example, to develop housing schemes without attending to the possible losses and therefore the ensuring of fire brigade services, policing, increased traffic control, etc.

7. MAJOR ASPECTS OF SIGNIFICANCE

Following from the foregoing paragraphs in this chapter, the significance of emergencies and disasters could perhaps best be summarised in global, national, and practical disaster management, terms.

In global terms unless emergencies and disasters can be mitigated and managed to the optimum extent possible, it will continue to have a dominating effect on the future. The world is already facing a range of environmental and subsistence crises. Political,

economic, and social stability of the world depends significantly on bridging the gap between developing and developed nations. The mitigation and containment of emergency and disaster effects on the developing nations (including South Africa), now and in the future, is an important asset towards bridging the gap.

In national terms the impact of emergencies and disasters usually results in two major setbacks:

* First, the direct loss of existing national assets in various forms; and
* Secondly, the diversion of resources and effort, away from ongoing subsistence and development, in order to achieve satisfactory recovery.

In practical terms the overriding need is for an accurate and precise focus on the requirements. There is seldom scope, or need, for fancy trimmings in such things as organisational structure and operational concepts. On the contrary, it is vital to define clearly and without ambiguity key aspects such as:

- possible threats
- available resources
- organisational requirements
- planning needs
- action required in relation to the sectors of the disaster management cycle
- training.

If this definition is correctly made and acted upon, a lean and efficient concept of countermeasures should be achieved. This should result in a system in which both government and non-government organisations are blended to provide a thoroughly professional emergency and disaster management capability.

CHAPTER 4

DEPARTMENT PUBLIC SAFETY - MISSION STATEMENT & OBJECTIVES

1. MISSION STATEMENT

"It is the mission of the Department Public Safety, to establish and maintain a co-operative ability for the West Rand District to prevent, mitigate, confine and manage emergencies and disasters in an affordable effective and efficient manner by means of an all hazard, all risk inclusive approach in accordance with national policy and statutory requirements as well as international best practices".

2. DEFINITION OF TERMS

White Paper on Disaster Management:

'Contingency Planning' - The forward planning process, for an event which may or may not occur, in which scenarios and objectives are agreed, managerial and technical actions defined, and potential response systems put in place to prevent, or respond effectively to an emergency situation.

'Development' - A process for improving human well being through reallocation of resources that may involve some modification to the environment. It addresses basic needs, equity and the redistribution of wealth. Its focus is on the quality of life rather than the quantity of economic activity.

'Disaster'- A natural or human-caused event, occurring with or without warning, causing or threatening death, injury or disease, damage to property, infrastructure or the environment, which exceeds the ability of the affected society to cope using only its own resources.

'Disaster Management'- A collective term encompassing all aspects of planning for and responding to disasters, including both pre and post disaster activities namely prevention, mitigation, preparedness, response, recovery, and rehabilitation. It may refer to the management of both the risks and consequences of disasters.

'Early warning'- The identification, interpretation and recognition of events that would draw attention to a potential emergency.

'Emergency'- A sudden and usually unforeseen event that calls for immediate measures to minimise its adverse consequences.

'Epidemic'- An outbreak of a contagious disease that spreads rapidly and widely amongst people and/or animals.

'Hazards'- Threats to life, well-being, material goods and/or the environment. Extreme natural processes or technological developments cause them. When a hazard results in great suffering or collapse, it is usually termed a disaster.

'Hazardous substances'- Substances that can cause harm or damage to humans, animals and the environment.

'Human-made disasters'- Disasters or emergency situations that are caused directly or indirectly by identifiable human actions, deliberate or otherwise.

'Incident'- A relatively minor occurrence or event (that can lead to a public crisis).
'Mitigation'- Action taken to reduce the effects of a disaster. The term normally implies that while it may be possible to prevent some disaster effects, other effects will persist and can be modified or reduced, if appropriate steps are taken.

'Monitoring' - A system of checking and observing to ensure that the correct procedures and practices are being followed.

'Natural disasters'- Extreme climatological, hydrological or geological process that pose a threat to persons, property, the environment and the economy.

'Preparedness'- Measures aimed at impeding the occurrences of disasters and/or preventing such occurrences and its harmful effects.

'Rapid onset disasters'- A rapid onset disaster is often caused by natural events such as earthquakes, floods, storms, fires and volcanic eruptions. Although such events are more sudden, underlying problems can also intensify the impact associated with poverty.

'Recovery'- The rehabilitation and reconstruction activities necessary for a rapid return to normality.

'Rehabilitation'- Actions taken in the aftermath of a disaster to enable basic services to resume functioning, to assist affected persons in self-help efforts to repair dwellings and community facilities, and to facilitate the revival of economic activities.

'Relief'- Activities aimed at supporting victims of disaster through provision of shelter, medicine, food, clothing, water, etc.

'Response'- Activities that are arranged to deal with emergency situations and can involve the evacuation of people, dealing with accidents, extinguishing fires, etc.

'Risk reduction'- Measures taken to reduce long-term risks associated with human activity or natural events.

'Slow-onset disasters'- Slow-onset disasters or creeping emergencies (so named because they take several months or years to reach a critical phase) result when the ability of people to support themselves and sustain their livelihoods, slowly diminishes over time.

Such disasters may also be aggravated by ecological, social, economic, or political conditions.

'Vulnerability'- The degree to which an individual, family, community or district is at risk of experiencing misfortune following extreme events.

3. OBJECTIVES

The objectives of the Department Public Safety could be categorised into two main elements, being, (a) proactive objectives, and (b) reactive objectives. Anchor or support activities, plus budgetary provisions support these two main elements.

Each of these objectives could be further broken down into specific activities/projects and whereas each activity comprises of specific goals and methodologies.

Diagrammatically this process of achieving the objectives could be depicted as follows:

3.1. PROACTIVE OBJECTIVES

3.1.1 Continuous risk, hazard, and vulnerability assessments

General description of objectives.

Fundamental to all aspects of disaster management is the availability of applicable and valid information. It is an aspect that may appear to be obvious, but it is frequently overlooked. The disaster management practitioner may know that a particular geographic area or community is susceptible to the impact of sudden or slow-onset hazards. However, in reality, until a decision is made on systematic ways to compile and assess information about disaster vulnerabilities, the functionary is and will be working in a void.

In general terms risk could be described as:

HAZARD
+
ELEMENTS AT RISK
+
VULNERABILITY
=
RISK

Activity Menu.

Risk Management

The overall task of risk management must include both an estimation of the magnitude of a particular risk and an evaluation of how important to us that specific risk is. The process of risk management therefore has two components, (a) risk assessment and (b) risk evaluation. Risk assessment requires the quantification of the risk from available data and to understand the processes involved. Risk evaluation is the judgement that a society attribute to the risks that face them in deciding what to do about such risks.

Determining acceptable risk levels involves a clear understanding of (a) societal expectations - fears, concerns and needs - at a specific point in time, (b) government policies and procedures in general - as contained in official policies, protocols and legislation, and, (c) political requirements and expectations. In any developing country with clear developmental strategies aimed at the upliftment of the poor, it is acceptable risk for a wealthy person to lose his/her house in a fire. It is, however, an unacceptable risk for the poor to loose their domestic structures in fires whereas the wealthy is insured and will recover almost all losses whilst the poor could become a burden to government, as they are unable to recover from the loss.

Risk management therefore entails programmes aimed at assessing risks and compiling risk profiles within communities and proactively reducing such risks in areas where it represents unacceptable risk values.

Vulnerability Assessment

Vulnerability is the propensity of things to be damaged by a hazard. People's lives and health are at risk directly from the destructive effects of the hazard. Their incomes and livelihood are at risk because of the destruction of the buildings, industries, crops, livestock, or equipment, which these depend on. Each type of hazard puts a somewhat different set of elements at risk. Most of disaster mitigation work is focused on reducing vulnerability and to act to reduce vulnerability, development planners need to understand which elements are most at risk from the principal hazards, which have been identified. Vulnerability assessment is the process of estimating the vulnerability to potential disaster hazards or specified elements at risk. The root causes of vulnerability to emergencies and disasters in developing countries are poverty and inequitable development (or lack of/or access to resources).

It is the interface or interaction, between vulnerable conditions and natural hazards that results in emergencies or disasters.

Typical vulnerability assessments will include the following:

✓ *Physical Vulnerability*

Physical vulnerability relates to buildings, infrastructure, and agriculture. Of significance is the so-called 'life-lines', which are critical to the effective functioning of societies. 'Life-line' infrastructure refers to hospitals, schools, transportation routes and bridges, police stations, emergency services and communication systems as well as structures, utility reticulation networks (water, electricity and sewerage systems), and essential industrial and commercial activities/structures such as bakeries, pharmacies, banking institutions, general grocery traders, etc. It must be accepted that when 'life-line' infrastructure fails, the sustaining of affected communities becomes the direct burden of government.

✓ *Social Vulnerability*

Whilst physical elements of vulnerability have, in the past, received worldwide preferential attention, social vulnerability has been neglected. In the South African situation where a nation is recovering from the social and psychological traumas of the apartheid ideology, attending to the social vulnerability of communities is essential.

Social vulnerability refers to the intrinsic ability of society to cope with the impacts of emergencies and disasters - or rather the lack of such ability. There are communities, whose livelihoods are at risk, living and working in densely populated areas, with distorted or low perceptions of risk, and, without institutional support. The cumulative effect of these conditions is a high level of social vulnerability.

Social vulnerability also focuses on the secondary effects of emergencies and disasters such as epidemics and the increase of poverty rates.

✓ *Economic Vulnerability*

The very real danger exists that the poorer sections of society could view this type of vulnerability as applicable to those wealthy sections of society, to the 'have's'. Economic vulnerability, however, addresses the wider spectrum of vulnerability. It focuses on evaluating the direct loss potential (i.e. damage or destruction of physical and social infrastructure and its repair or replacement costs) versus the ability of the society to foot the bill for such replacement or repair costs. It also focuses on crop and production losses. Indirect loss potential (i.e. the impact on lost production or income generation, employment, critical and essential services or 'life-line losses', and income-earning activities) versus the ability of the society to endure and recover from such losses.

It is also important to note that both physical and social vulnerability have a direct impact on the economic vulnerability of society whereas, for example, a particular community, cannot fund the recovery from wide spread physical losses, such inability to recover could result in the dissolving of the social fibre of society, political stability and economic activity.

✓ *Resource Vulnerability*

A critical element of vulnerability, in general, is the availability (or lack thereof) of resources to cope with the strains and stresses of everyday emergencies and/or disasters. Without required resources to (a) prevent, (b) mitigate or (c) respond to, emergencies and disasters and communities are left vulnerable to even less significant events. Resource vulnerability refers to general policing, fire brigade and emergency medical services, hospital services, etc. It, however, also refers to the maintaining of available resources such as utility networks, roads, and bridges and the maintaining of occupational health and safety standards and fire prevention standards. A lack of resources inevitably results in an increase in physical, social, and economic vulnerability.

✓ *Leadership Vulnerability*

In developing countries around the world, a critical element of vulnerability is the potential lack of responsible and effective leadership in the spheres of government, the economy and civil society. This element of vulnerability is often the causal factor for war and civil strive - one of the core causal factors of emergencies and disasters. A lack of leadership will have a direct impact on physical, social, economic and resource vulnerability and in this regard it is critical for government at all levels to be aware of the necessity to (a) protect and development democracy, (b) improve respect for the laws of the land, and, (c) to constructively attend to the building of an culture of awareness.

It is often during times of crisis when leadership vulnerability leads to the fall of governments and the creation of complex emergencies.

Specific applied goals.

Risk Management

- Continuously identify applicable risks and those communities exposed to such risks and import the data to mitigation, preparedness and response strategies and programmes.
- Provide risk profile feedback to the political leadership on the West Rand.
- Base activities and projects on the results of risk assessments.

Vulnerability Assessment

- Continuously conduct vulnerability assessments in all communities and inform mitigation, preparedness and response strategies and programmes, accordingly.
- Provide vulnerability feedback to the political leadership on the West Rand.
- Base activities and projects on the results of vulnerability assessments.

Methodology.

Risk Management

1. Conduct regular risk assessments
2. Determine levels of acceptable risk
3. Quantify risk assessments
4. Complete risk maps indicating risk areas within the District
5. Report assessment results to the Section 80 Portfolio Committee

Vulnerability Assessments

1. Conduct regular assessments
2. Determine critical vulnerable areas
3. Complete vulnerability mapping
4. Report assessment results to the Section 80 Portfolio Committee
5. Recommend remedial measures
6. Monitor implementation of remedial measures

3.1.2 Mitigation Measures

General description of objectives.

Mitigation is one of the most powerful links between vulnerability & risk management and development. Local government should use its development resources to reduce risk and vulnerability by means of mitigation projects. Such measures could include the following:

- establishment and focused enforcement of regulatory measures.
- providing access to municipal services.
- promoting employment creation by encouraging investment.
- promoting and providing security and protection from crime and natural disasters; and
- ensuring co-ordination and integration of all activities.

Mitigation measures could be structural or non-structural of nature. Providing potable water to all informal communities could be a structural measure to mitigate the spreading of diseases, whilst health programmes to improve personal hygiene standards, is non-structural of nature. The one without the other could lead to the ineffective spending of public funding to address basic needs.

Activity Menu.

Engineering Measures (Structural mitigation)

These measures could, inter alia, include the following activities:

- ♦ building plan & code management
- ♦ provision of water and sewerage reticulation systems
- ♦ provision of storm water systems
- ♦ maintenance of main access routes & bridges

Spatial Planning (Structural & non-structural mitigation)

These measures should, include the following activities:

- ♦ planning aimed at eliminating or reducing unsafe areas
- ♦ planning for adequate social support structures such as police stations, clinics, schools, etc.
- ♦ planning for adequate public transport facilities such as roads and taxi-ranks
- ♦ improved land-use management

Economic Measures (Non-structural mitigation)

Economic development is key to disaster management. A strong economy is the best protection against any emergency or disaster. A strong economy means more money to be spent on stronger buildings, safer sites, and larger reserves to cope with potential future losses.

These measures should include activities such as:

- creation of an investment climate aimed at the encouragement of commercial and industrial settlement within the District
- the establishment of a economic diversification programme
- the establishment of a small-business development programme
- the establishment of a strong and focused tourism development programme

Institutionalised Emergency and Disaster Management Programmes (Non-structural mitigation measures)

Institutionalised programmes simply entail that each functional unit/department within local government should have as its aim the reduction of vulnerability in accordance with the Constitutional objective to provide a safe and healthy environment to all. These functional aims/objectives of departments must be entrenched into the day-to-day functioning of each functional unit/department and should be able to withstand changes in political administration and budgetary priorities. The institutionalising of emergency and disaster mitigation means the acceptance of a consensus that, efforts to reduce disaster risks are of continual importance to the well-being of all.

These measures should include activities such as:

- providing regular inter-departmental training/briefing sessions about risk & vulnerability assessments and possible mitigation measures
- provision of regular progress reports to political leadership

Conflict Reduction (Non-structural mitigation measure)

In developing countries, often with diverse societies varying from wealthy and developed communities to poor and disadvantaged communities, conflict often erupts because of vastly differing fears, expectations, and needs. Conflict, whether latent or acute, often results in development being retarded or even halted - resulting in further conflict. Conflict, in view of its intrinsic spiralling ability, must be managed and mitigated to provide a stable environment within which development can take place.

These measures should include activities such as:

- conflict intervention
- conflict resolution

Societal Mitigation (Non-structural mitigation measure)

In developing countries, such as South Africa, often with diverse societies varying from wealthy and developed communities to poor, disadvantaged communities' needs differs substantially and pivots around issues such as fears, expectations, and needs.

Developed communities often fear more than which is expected or needed, whereas the fears often pivot around the possible loss of life, possessions, and employment. In disadvantaged communities these members of society live in poverty (something feared by the developed sector) and their expectations and needs are normally directly coupled to their hopes and dreams - dreams of a better life, improved living conditions, education, etc. Their fears are linked to that which may not be realised. Developed communities thus fear because of what they could loose - disadvantaged communities fear because of what they may not achieve. These fears/needs are intrinsically opposite sides of the community coin and carries with it an explosive, destabilising potential - the ever-increasing potential conflict between the haves and the have-nots, in developing countries.

Societal measures should be aimed at supporting the developed sectors of society in addressing their fears of, for example increasing crime, and assisting and supporting the disadvantaged sectors of society with the achieving of their developmental dreams and hopes.

A good example is the question of availability of land in rural areas. Landowners (farmers) are afraid of land invasions whereas the poor (without proper shelter) views these fears as selfish. Landowners are of the opinion that they worked hard and paid for the land - the poor often maintains the view that the land was 'stolen' or 'taken' by the wealthy without consideration of the poor. In a democratic, legal, society such as South Africa (with its history) is speaks for itself that (a) land invasion cannot be tolerated, yet (b) the homelessness of the disadvantaged also cannot be tolerated. Societal mitigation measures must be aimed at equalising the process of needs and fear management to the benefit of all.

Such measures should include activities such as:

- supporting CBO's in their endeavours to capacitate and improve the quality of life of residents and to address the fears, expectations, and needs
- facilitate CBO's and NGO's in establishing closer and accessible links with formal governmental structures
- encourage CBO participation in official governmental processes such as the LDO process

Mitigation measures should be based on short-term and long-term planning horizons. Short-term planning should be aimed at measures, which needs to be implemented rapidly to reduce critical levels of vulnerability, whilst long-terms projects will be aimed at achieving sustained vulnerability reduction in a matter of years.

Punitive and Incentive Mitigation Measures

Punitive and incentive measures are closely related to regulatory measures whereas meeting special requirements, for example, pertaining to meeting environmental requirements, an industrialist could be rewarded by means of a tax rebate or punitive measures could be taken. Incentive programmes are extremely popular in certain parts of Europe.

Specific applied goals.

- Promote and encourage the implementation of mitigation/preventative programmes within all functional spheres of local government, other governmental departments/agencies, and the private sector.
- Monitor progress made with mitigation/preventative programmes
- Achieve the substantial and quantifiable reduction of vulnerability within the District by means of the implementation of:
  - the establishment and dynamic execution of improved regulatory measures.
  - providing equitable access to municipal services.
  - promoting economic development and employment creation.
  - promoting and providing security and protection from crime and natural disasters; and
  - ensuring co-ordination and integration of all activities between local government bodies, other spheres of government and the private sector.

Mitigation Methodology.

1. Establishment of inclusive and representative Mitigation Monitoring Task Teams within each local municipality
2. Support of CBO's in the addressing of community projects aimed at the improving of the quality of life of residents
3. Establishment and maintaining of rapid conflict intervention capacity
4. Development and sustaining of mitigation training programmes aimed at all sectors of government, CBO's, and the private sector
5. Establishment and enforcement of applicable preventative regulatory measures
6. Planning, implementation and sustaining of fire safety (prevention) programmes

3.1.3 Preparedness Measures

General description of objectives.

The concept of emergency and disaster preparedness is quite straightforward. Its objective is to ensure that in terms emergency and disaster appropriate systems, procedures and resources are in place to ensure co-ordinated assistance to the afflicted.

The aims of preparedness are to minimise the adverse effects of a hazard through effective precautionary actions and to ensure timely, appropriate, and efficient organisation and delivery of emergency response.

Preparedness in its starkest form assumes that certain groups of people will remain vulnerable and that preparedness will have to address the consequences of impact. It is important to note that the term used is 'precautionary actions' for all too often the product of disaster preparedness is seen as a static plan to be devised and then filed until it is needed. Preparedness, to the contrary, must be an active and continuing process - of course, both plans and strategies are required but both must be dynamic ventures, which are frequently reviewed, modified, updated, and tested.

Perhaps one of the most difficult aspects of disaster management is that of timing. Timing also impinges upon the concept of preparedness. Speed and timeliness have often been treated synonymously, a major conceptual flaw. Decisions related to timing must consider the relationship between relief inputs and its effects. In terms of alleviating immediate distress, speed is critical.

Similarly, appropriate assistance demands scrutiny, both from a needs and supply point of view. 'Over-kill' situations could occur where inappropriate assistance is provided resulting in wastage of resources, and likewise the standard story of providing pork to Muslim communities is applicable.

Activity Menu.

Contingency Planning

Contingency planning entails the co-ordination of preparedness activities in an all-hazard, multi-sectoral and inclusive manner. Revision 10 version of the Emergency Operations Overview Plan (EOOP) for the West Rand is attached.

The EOOP is supported and informed by various micro-planning activities being conducted within the District. Such plans include the Flood Plan, Veld Fire Plan as well as various contingency plans within educational institutions, and commerce and industry.

The various elements of the EOOP are further supported by a variety of Standard Operating Procedures (SOP's), describing in detail the response mechanisms of the various service providers such as the fire brigade, emergency medical services, SAPS and the SANDF as well as Incident Command Procedures.

Institutional Framework

A co-ordinated emergency and disaster preparedness and response system is a prerequisite to any preparedness plan. Without horizontal co-ordination between the various role-players and planned, co-ordinated vertical institutional planning, any plan will rapidly disintegrate. The Plan requires a structure for decision-making with the view to ensure co-ordination and focus of effort.

On the West Rand the Joint Operations Centre (JOC) performs such structural, institutional role.

Information, Communication & Warning Systems

Information management forms the basis of effective emergency and disaster management. Gathering information pertaining to events, risks, hazards and vulnerability, the collation thereof and the applying of in-time information to co-ordinate service response is of critical importance in the effective and efficient rendering of both proactive and reactive services.

Warning systems forms an integral part of the information management system and is being used to issue warnings to communities and to effect evacuation procedures.

On the West Rand the Emergency Operations Centre (EOC) performs the information, communication, and warning responsibilities.

Resource Base

The requirements to meet an emergency depend upon the types of hazards the plan anticipates. Such requirements are explicit and cover all aspects of emergency and disaster relief and recovery implementation. Relief requirements entails the availability of an extensive resource base - what is required - where could it be acquired - how should it be acquired and at what costs? The resource base includes vehicles, equipment, stocks and material, specialised knowledge, and skills, etc. The resource base on the West Rand is linked to the EOC. Resource data is updated regularly to ensure functionality.

Response Mechanisms

The ultimate test for emergency and disaster preparedness is the effectiveness of response. Response mechanisms are contained in Standard Operating Procedures being applied by all role-players. These SOP's are being revised regularly to ensure prompt but appropriate response.

Effective planning of response mechanisms is essential to ensure co-ordinated, effective deployment of resources.

Public Education, Training and Capacity Building

The process of emergency and disaster management will only be effective if those who must respond and those who are the ultimate beneficiaries, know what to do in times of emergency or

disaster and what to expect of each other. The process in providing adequate skills, knowledge, and capacity, is an ongoing process which forms the basis of effective emergency and disaster management. Without clearly defined public education, training and capacity building programmes co-ordinated focus of effort cannot be achieved - be it proactive or reactive measures.

On the West Rand the unit, Training & Community Empowerment is responsible for these programmes in accordance with a structured Business Plan.

Rehearsals

As military manoeuvres cannot fully portray the reality of battle, neither can emergency and disaster preparedness rehearsals portray the full dynamics - and potential chaos - of a rescue and/or relief operation. However, this fact cannot provide an excuse for avoiding the need to rehearse the preparedness programme and its various elements. Not only will rehearsals re-emphasise points made in separate training programmes, but it will also test the system as a whole and, invariably reveal gaps otherwise overlooked.

The cost of regular rehearsals, however, is a major negative factor impeding on the staging of regular rehearsals.

Specific applied goals.

- Ensure the compilation of an Emergency Operations Overview Programme for the West Rand District for submission to the National Emergency Operations Centre
- Compile and regularly revise Standard Operating Procedures pertaining to all possible events
- Ensure continued effective multi-disciplinary and multi-sectoral co-ordination
- Provide applicable skills and knowledge training to all stakeholders throughout the District

Methodology.

1. Regularly revise the Emergency Operations Overview Plan (EOOP)
2. Regularly revise all SOP's
3. Regularly subject all SOP's to rehearsals and testing
4. Establish and maintain the effective functioning of a multi-sectoral Joint Operations Committee
5. Establish and maintain a training facility aimed at the provision of applicable skills and knowledge to all stakeholders - conduct structured & accredited training programmes
6. Establish and maintain an electronic information and resource management system within the EOC
7. Plan and execute regular annual rehearsals.

3.2. REACTIVE OBJECTIVES

General description of objectives.

- Ensure the co-ordinated, timely, affordable, and appropriate responding to emergencies and disasters in order to meet the service requirements of the general public
- Ensure the co-ordinated implementation of rehabilitation and recovery programmes

Activity Menu.

The activity menu includes the following:

- Warning
- Evacuation/migration
- Search and rescue
- Assessment
- Emergency relief
- Logistics and supply
- Communication and information management
- Victim response and coping
- Security
- Operations management
- Rehabilitation and reconstruction

Warning

Sudden Onset - Warning refers to arrangements to rapidly disseminate information concerning imminent emergency or disaster threats to appropriate government officials, institutions, and the community at large in the areas of immediate and secondary risk. The issuing of such warnings must be based on clear principles.

Slow Onset - Early warning activities include the process of monitoring the situation in communities known to be particularly vulnerable to the effects of droughts, crop failures, HIV/AIDS and other epidemics, a surge in criminal activity and/or changes in economic conditions. Adequate warning will enable remedial measures to be initiated before hardships become acute.

Evacuation/migration

Sudden Onset - Evacuation involves the relocation of persons from risk zones to safer areas. For evacuation to work there must be a timely and accurate warning system, clear identification of escape routes and a clear policy about the authority to issue evacuation orders. Visible and assertive leadership is required to ensure effective evacuation.

The SAPS, fire brigade and emergency medical services, as well as traffic services plays pivotal roles in the effecting of evacuation orders.

Slow Onset - The movement of people from risk zones where they are at risk under these circumstances is not, in fact, evacuation but crisis-induced migration. This movement is usually not organised and co-ordinated by authorities but is a spontaneous response to the perception by the migrants that food and/or security could be elsewhere obtained.

Search and rescue

Search and rescue (SAR) are the process of identifying the location of victims that may be trapped, lost, injured or isolated and bringing them to safety and medical attention. The fire brigade and emergency medical services render this function with the assistance of the SAPS, SANDF and volunteer organisations.

Assessment

The primary objective of assessment is to provide a clear, concise picture of the post-emergency/disaster situation, to identify relief needs and to develop strategies for recovery. It determines options for humanitarian assistance, how best to utilise existing resources or to formulate requests for further assistance.

The process of assessment is closely related to risk and vulnerability assessment and is a pivotal activity aimed at the focusing of effort.

EVOLVING OBJECTIVES OF ASSESSMENT

Warning Phase

- Determine extent to which affected populations are taking measures to protect lives and property from expected hazard impact
- Activate elements in the preparedness plan regarding the implementation of assessment

Emergency Phase

- Confirm the reported emergency and estimate the overall magnitude of the damage
- Identify, characterise, and quantify risk zones
- Identify and prioritise the actions and resources needed to reduce immediate risk
- Identify local response capacity, including organisational, medical, and logistic resources
- Anticipate future problems
- Manage and co-ordinate the immediate response

Rehabilitation Phase

- Identify the priorities of the affected victims
- Identify the policies of government about post-disaster assistance
- Estimate the additional support required from national and provincial sources
- Monitor the outcome and effectiveness of continuing relief and rehabilitation measures

Recovery Phase

- Determine the damage to economically significant resources and its implications for development policy
- Assess the impact of the events on current developmental programs
- Identify new development opportunities created by the events

The assessment process must be carefully planned and executed. It includes activities such as:

1. Identify information needs and sources of reliable data
2. Collect data
3. Analyse and interpret data
4. Report conclusions, forecasts, and alternatives to decision-makers

As the response actions begin to influence events, assessments become part of the monitoring and control loop, allowing those involved to monitor outcomes and attempt to correct or redirect the response. It becomes part of a continuing process of assessment, review, and correction by which the operation begins to restore the framework for recovery.

Emergency relief

Emergency relief is the provision on a humanitarian basis of material aid and emergency medical care necessary to save and preserve human lives and property. It also enables families to meet their basic needs for medical and health care, disposal of the dead, shelter, clothing, water, and food. Relief supplies or services are typically provided, free of charge, in the days and weeks immediately following the sudden onset event. It is also aimed at removing/mitigating the cause of the event - such as extinguishing the wildfire.

Logistics and supply

The delivery of emergency relief will require logistical facilities and capacity. A well-organised supply service is crucial for handling the procurement or receipt, storage and dispatching of supplies to victims.

This section also refers to clearance and access. It entails the clearance of roads or the regulating of traffic to allow for the movement of logistics, manpower and supplies.

Communication and information management

All the above activities are dependent on effective communication. There are three aspects to communication during emergencies and disasters. One is the equipment that is essential for information flow, such as radio's, telephones and its supporting systems of repeaters, satellites, transmission lines and computers systems. The other is information management - the protocol of knowing who communicates what to whom, what priority is given to it and how it is disseminated and interpreted. The third is the availability of an appropriate facility with trained manpower to gather and collate information.

Survivor response and coping

In the rush to plan and execute a relief operation it is easy to overlook the real needs and resources of the survivors. The assessment must consider existing social coping mechanisms that negate the need to bring in outside assistance. On the other hand, survivors may have new and special needs for social services to help adjust to the trauma and disruption caused.

This section also refers to the maintenance of public morale whereas without such programmes affected communities could easily fall victim to looting, public disruption, endemic crime and civil unrest. Participation in the response process by CBO's is key to healthy recovery.

Security

Security is always a priority issue during emergencies and disasters. During abnormal circumstances looting is always a possibility and therefore specific and decisive security measures must be taken.

Operations management

None of the above activities can be implemented without clear and continuous operations management. Operations management is dictated in terms of the EOOP and Standard Operating Procedures (SOP'S). These operational planning frameworks are dynamic in nature and must be regularly revised. On going training and rehearsals must be focused at the honing of skills and knowledge pertaining to operational management.

This section also refers to media co-operation whereas good, open, relations with the media usually provides two-way benefits. For the media to play its pivotal role in preparedness programmes (including the issuing of warnings) it is essential to reward the media with effective co-operation during emergencies and disasters. Such co-operation must, however, be conducted in a pre-planned, properly structured manner to ensure mutual benefits.

Rehabilitation and reconstruction

Rehabilitation and reconstruction refer to both structural and non-structural rebuilding of society, its facilities and capacities. Roads, storm water systems, schools, etc. refers to structural measures of rebuilding whilst the assistance with the re-establishment of CBO's, health services, etc. refers to non-structural rebuilding. This section also refers to the re-establishment of utility services such as water and electricity supply, sewerage, etc.

Specific applied goals.

- To respond to any emergency and/or disaster in a co-ordinated, planned manner
- To establish and sustain effective and affordable response capabilities, including the fire brigade and emergency medical services
- To ensure private sector participation in the establishment of response capabilities, including the provision of secondary and tertiary medical facilities, hazardous material response, etc.
- To ensure effective, efficient, inclusive, and co-ordinated overall emergency and disaster management, command & control, and associated administrative abilities
- To ensure the provision of effective communication infrastructure throughout the District

Methodology

1. Planning, staffing and equipping of effective and affordable fire brigade and emergency medical services
2. Planning, staffing and equipping of an effective and affordable Emergency Operations Centre in accordance with appropriate policy and legislation
3. Effective implementation of EOOP strategies and the activation of SOP's

CHARTER 5

APPLIED PRINCIPLES

1. COMPREHENSIVE EMERGENCY AND DISASTER MANAGEMENT

Emergencies and disasters just do not simply appear - unannounced and unexpected. Prior to the occurrence of any emergency or disaster a hazard, risk and vulnerability existed, but it takes an event or trigger mechanism to turn it into an emergency or disaster. For example, propane gas trucks regularly pass through the main street in Randfontein. Equipment failure or human error simply can turn a routine gas delivery into a disaster.

Likewise, the less resources to effectively deal with events, the bigger the possibility of an emergency or disaster. A bus accident in the middle of Johannesburg cannot be regarded as a disaster - ample resources exist to handle the consequences of the accident. Should this accident, however, occur in the middle of the Karoo, it could be a disaster in view of the lack of appropriate resources.

Because of this, one of the basic principles of Comprehensive Emergency Management (CEM) is that something purposeful could be done prior and after a hazard strike.

Since the Second World War, particularly in South Africa, emergency and disaster management focused primarily on preparedness to respond to an emergency. The reasoning was that a primary duty was to be prepared in case of an enemy attack or an act of terrorism. A further fundamental argument was that little or nothing could be done about the occurrence of emergency events. Only recently, during the last decade has it dawned upon the world that hazards, risks, and vulnerability could and should be managed in a proactive manner.

To be effective, all aspects (proactive and reactive) of emergency and disaster management aimed at dealing with all hazards, risks and vulnerability, must be addressed concurrently, on an ongoing basis.

2. INTEGRATED EMERGENCY MANAGEMENT SYSTEM

An Integrated Emergency Management System (IEMS) is the encapsulating of the principles of the CEM, referred to above, and resources. Putting the IEMS in place requires an effective emergency and disaster management structure, active, skilled, educated, and motivated personnel, and the diligent development of a set of emergency management capabilities. These capabilities are contained in several functional elements whilst at the same time developing elements unique to circumstance, event, and social demand. The Department Public Safety of the WRDM, in organisational structure and skill and ability composite strive towards the sustained effecting of an IEMS.

To accomplish the effective protection of the public safety and health, IEMS, must be designed to:

1. foster full and committed co-operative government between all local authorities, agencies/organs of state, NGO's, CBO's and the private sector
2. emphasise implementation of emergency management measures which are known to be effective
3. Achieve more complete integration of emergency management planning into mainstream local policy making, planning and operational systems
4. build on the foundation of existing emergency management plans, systems, and capabilities in order to broaden its applicability to the full spectrum of emergencies.

3. GENERAL REACTIVE SERVICE METHODOLOGY REQUIREMENTS

In the rendering of fire brigade and emergency medical services specific basic functional and statutory requirements must be met to ensure effective and efficient service delivery. These requirements are referred to as service methodology requirements.

The service methodology requirements are directly anchored in the relevant statutory and policy frameworks mentioned in Chapter 1. The official Service Methodology Statement of the WRDM, contains the following require-ments pertaining to the rendering of the fire brigade and emergency medical service:

- ➢ It must address human needs focusing on (this element specifically refers to the requirement to continuously execute risk and vulnerability assessments)
  - saving of lives
  - sustaining of life
  - saving of property

- ➢ The focus of fire brigade services should be aimed at prevention and mitigation
  - public education and awareness (the focus should be on the vulnerable)
  - inspections
  - professional advice (e g building plan evaluation)
  - law enforcement (by-laws)

- ➢ Emergency services should always be transparent as an a-political humanitarian service

- ➢ It must be community driven
  - personnel requirements should be supplemented with volunteers and reservists
  - existing services and infrastructure should be developed as support structures

- ➢ It must accommodate local conditions
  - informal settlements
  - tertiary industries
  - rural conditions

- It must maintain legitimacy

- It must be flexible and adaptable
- equipment
- operations
- organisational structure

- It must be effective but affordable
- the relation between risk, possibility and probability linked to affordability should ensure sustainment

- It must have a multi-disciplinary and integrated approach
- Local municipalities and neighbouring metropolitan municipalities
- SAPS
  - SANDF
- NGO's

- It shall accommodate no frills.

4. STRATEGIC PRIORITIES

The Gauteng Provincial Government has identified the following five key thrusts as strategic priority areas and the WRDM as well as its Department Public Safety aligns itself with such –

1. Enabling faster economic growth and job creation
2. Fighting poverty and building safe, secure, and sustainable communities
3. Developing healthy, skilled, and productive people
4. Deepening democracy and nation building and realising the constitutional rights of our people
5. Building an effective and caring government.

CHAPTER 6

CURRENT CHALLENGES AND CONSTRAINTS

1. FINANCIAL CONSTRAINTS

The WRDM has difficulty in financing required service levels in view of its own limited financial resources and the increasing demands to effectively handle increasing complex events. The financial realities faced necessitate a review of current practises and the funding thereof. In 1998 the WRDM adopted a Five-Year Planning Framework pertaining to the rendering of fire brigade and emergency medical services. Implementation of this Plan, had mixed success and on 26 October 2004 the Section 80 Portfolio Committee: Public Safety under item 5.1 resolved as follows –

'1. Strategies and action plans be developed and implemented by the Department Public Safety to ensure the restoration of service levels in accordance with applicable norms & standards.
2. National norms & standards not to be compromised in concurrence with previous resolutions of the Section 80 Public Safety Portfolio Committee taken on 28 November 2003.'

It must be expected that financial constraints shall persist for the foreseeable future and that a balance must be found between the funding requirements demanded by service levels and external impacting factors. During the 2015/16 financial year four new fire tenders were purchased for deployment in the district. In 2020 the financial situation is still dire.

2. CORE BUSINESS ACTIVITY IDENTIFICATION

In view of financial constraints it is imperative that the current core business within the Department shall have to be re-assessed and appropriate business plans developed in order to meet the needs of the community in an effective, proficient and affordable manner.

The main aim of the focussed and sustained re-assessment process shall be to:

⇒ Identify and define core business activities
⇒ Identify and define core business objectives & goals

⇒ Identify and define resource distribution to meet core business goals, whereas reference to resources includes, manpower, equipment, vehicles, skills, and buildings
⇒ Identify and define resource distribution to meet core business goals, whereas reference to resources includes, manpower, equipment, vehicles, skills and buildings
⇒ Identify and define income generating services

⇒ Ensure diligent enforcement of the Fire Brigade By-Laws
⇒ Develop procedures with the view to maximise income

The following functional business units have been identified within the Department Public Safety:

- Disaster management
- Emergency Operations Centre
- Community safety & social crime prevention
- Reactive emergency medical, rescue & fire brigade services
- Public information, education, and relations (PIER)
- Fire risk management

The purpose of the assessment process is to determine the following enablers:

* determine what must (in terms of statutory requirements and policy) be done
* how it should best be done
* determine what should not be done and how right-sizing would best have to be implemented
* determine optimal resource requirements
* determine optimal outcome-based budgeting (in accordance with 'what must be done').

The assessment process shall have to focus on the following key-performance outcomes -

* standards ('what' should be done and 'what' is needed - legal requirements, manpower, equipment, vehicles, etc.)
* procedures ('how' should it be done and 'how' should resources be utilised - protocols, policies, and Standard Operating Procedures)
* performance criteria (measurement instruments such as response times, cost-recovery, acceptable risk, cost of service failure, etc.)

Finally, the sustained assessment process must address statistical-based resource distribution within the District. Individual Performance Management Assessments indicating possible resource deficiencies and core coping-gaps will be presented to the Section 80 Public Safety Committee and the Department of Provincial and Local Government in order access envisaged dedicated Equitable Share funding.

3. REGULATORY FRAMEWORK

In order to prevent and mitigate emergencies and disasters it is imperative that proper regulatory frameworks be developed (where it is lacking) and enforced. Effective, focused and co-ordinated law enforcement forms the basis of good governance and is essential for the success of any mitigation or prevention programme. From a local government perspective the development of applicable by-laws and the enforcement thereof, is imperative. The provision of a safe and healthy environment without the

effective enforcement of regulatory measures simply is not possible and a lapse of such enforcement shall ultimately lead to emergency and disaster situations.

Law enforcement with regard to the following is essential:

- Land use requirements
- Building regulations
- Fire Prevention requirements
- Environmental health management requirements
- Municipal by-laws
- Traffic regulations.

The effective functioning of the unit Fire Risk Management, and Disaster Management & Community Safety is key in establishing and sustaining effective and appropriate regulatory frameworks.

The capacity to effectively and efficiently enforce regulatory measures in the District should be addressed and the use of trained voluntary Peace Officers, from the community, could be considered.

Enforcing regulatory measures must, always, be executed within the IDP framework in order to prevent the establishment of a well, regulated but socially distorted society.

4. SERVICE DEMANDS

Historically effective service delivery was primarily structured around approximately 1/3 of the population. Since 1993 service delivery has been extended to all sectors of society - despite a steady decline in available resources. It must be expected that service demands will further increase. In order to meet social and political demands, service delivery shall have to be structured in accordance with priorities whereas one such priority should be the effective and focused addressing of the social vulnerability of the majority of the population on the West Rand - those who live in dangerous or high risk environments and who do not have the capacity to recover from emergencies using their own resources.

Investment and the creation of a stable economic environment with the view to create employment opportunities will become a key-performance area on the West Rand. In this regard the role the Department Public Safety plays is important. It must provide a *'safety-net'* service to all commercial, financial and industrial sectors whereas it will be clear to all investors that their investments are adequately protected. One major industrial or commercial fire, which could not effectively be dealt with by the fire brigade service, could destroy the investment potential on the West Rand.

Risk assessments in the commercial and industrial sector play an important role in investment evaluations. The one thing the West Rand cannot afford is a questionable risk profile.

Typical risk profiles, inter alia, contains elements such as:

- Labour market potential (skills/availability/proximity/training facilities)
- Labour market costs (comparative labour costs)
- Labour market stability (comparative strikes/labour unrest)
- Market and supply access (transportation routes - main roads/airports)
- Essential services costs (electricity/sanitation/waste disposal/sewerage/water)
- Essential services stability (supply disruption/water restrictions)
- Building costs (erection costs/costs in meeting building regulations)
- Cost of governance (taxes and levies)
- Social stability (grievance profile of communities)
- Social support structure availability (housing/schools/churches)
- Financial support structure availability (banking facilities)
- Crime rate (assessing the impact of crime on core business)
- Governance stability (supportive/consequent/firm/transparent/effective/inclusive)
- Geological stability (dolomite/sink holes/earthquakes)
- Meteorological profiles (historical occurrence of high winds/tornado's, flooding, etc)
- Emergency support (proactive & reactive capacity to render fire brigade, emergency medical and disaster management services/hospital services)

Negative or questionable risk profiles will not result in the creation of investor confidence and shall, thus, not result in an influx of investment and the subsequent economic boost so desperately needed in the District. By and large local government tend to believe that incentive schemes could lure investors. It speaks for itself that incentive schemes, such a *'tax holidays',* could play a major role in attracting investments, yet local government must also address the abovementioned risk factors. One cannot simply, for example, provide a tax rebate of 60% over a ten-year period to a potential industrialist, tempting him/her to establish a manufacturing plant of R5 million, without ensuring an effective fire prevention and response capacity to protect such investment. Likewise, a high crime rate requires additional security and security costs money.

For the West Rand to attract additional commercial and industrial investment, service demands will increase - a fact, which must be accounted for in budgetary expenditure and core business planning. A further aspect in need of consideration is the development of low-cost housing schemes. This accumulation of people inevitably has a negative impact on the general risk profile of the District. Rapid urbanisation is one of the core causal factors of emergencies and disaster the world over. Such developments will, over time, increase service demands on municipal resources, policing, health and medical services and educational facilities.

5. MAINTAINING OF STANDARDS

On 12 March 2002 the Section 80 Portfolio Committee resolved that national and provincial service standards should be adhered to and actively promoted by the Department Public Safety – that the Department should align itself with such statutory obligations and policy requirements.

CHAPTER 7

WEST RAND DISTRICT MUNICIPALITY

DISTRICT SAFETY PLAN REVISION 2022 V2.1

Prepared by the unit:
Disaster Management and Community Safety, Public Safety of the West Rand District Municipality

1. Preamble

The West Rand District Safety Plan –

- ***Defines*** community safety as promoting and protecting people's right to live in confidence and without fear for their own safety and that of others. It embraces a range of relevant matters including crime prevention, road safety and urban design

- ***Values*** a safer community in which residents and visitors are able to live, work, play and learn without the risk or fear of being injured or harmed as they go about their daily activities

- ***Recognises*** that crime and unsafe living conditions impact on individuals, families, business and communities at large in a variety of settings, requiring a multi-disciplinary, multi-faceted community based approach to respond to current and emerging risks

- ***Acknowledges*** the inherent risks posed to the societal fibre by the rapidly evolving siege mentality created by perceptions of threat and fear, the progressive eroding of the social capital of society and the development of secluded enclaves of perceived safety by those who could afford the fortifying of their property and life styles

- ***Provides*** a framework for the creation of safe environments in which safety aware individuals and organizations adopt community risk management behaviour and develop positive crime prevention and safety cultures

- ***Considers*** that children and young people are entitled to special care and assistance through early intervention, crime prevention and other community safety programs designed to assist children, the youth and families before social pathologies manifest in adulthood

- ***Considers*** that women and the elderly are extremely vulnerable to abuse and crime and that they are entitled to special care and assistance to prevent them from being stripped of their dignity and self esteem

- ***Supports*** the development of coordinated responses to community safety in which all members of the community have a responsibility and role to play in the creation and promoting of safe environments, adopting safety conscious life styles and supporting the principle of safety first

- ***Acknowledges*** that there is a range of approaches working with people from diverse backgrounds and cultures. To this end the Plan supports safety strategies that are inclusive, holistic and which embrace this diversity in age, culture, religion and ethnicity

- ***Recognises*** the value of partnerships with NGO's, government institutions, business, CBO's, institutions of religion and the broader community in providing multi-layered approaches to the developing of safe and prosperous communities through careful planning, maintaining attractive urban and rural environments

- conducive to development and providing access to opportunities to encourage safe and healthy communities

- ***Supports*** the many social dividends gained from the important role safety promotion has in building social capital, democratic values and improving the quality of life as well as the progressive development of a culture of human rights

- ***Acknowledges*** the economic dividends in presenting the West Rand District as a safe society effectively contributing to the social and economic capital of the Gauteng Global City Region and attracting investment, visitors and residents.

The West Rand Safety Plan is aimed at harnessing all multi-disciplinary, multi-sectoral contributions into the establishment and sustaining of a safe and healthy living environment within which risk and vulnerability is effectively managed and mitigated through a collective process of participation, tenacity and commitment.

1. Introduction

Crime and social vulnerability is part of modern-day South African society. The West Rand District Safety Plan outlines matters associated with the creating and sustaining of a safer district. It seeks to explore ways and means of establishing a multi-disciplinary, multi-sectoral, network working together to reduce crime and social vulnerability.

Feeling safe in the home, workplace and in public spaces is an important component of quality of life. Crime and anti-social behaviour erode the sense of safety and destroy connectedness within the community. Preventing crime is not merely the responsibility of the SAPS – it is a total community responsibility. Working together to prevent and mitigate crime and social vulnerability is part of a global trend for more sustainable living.

The District Safety Plan sets out a broad framework for the understanding of matters of concern and priority and to contextualize strategies and programs aimed at addressing such concerns and priorities over the next three years.

2. Demographic Background

The West Rand District, located on the western edge of the Gauteng Province includes the local municipalities of Mogale City, Merafong City and Rand West City. According to the West Rand District Profile of 2020, *"in 2019 the West Rand District had a population of 889 731 people and housed 6.1% of the total population in the Gauteng Province. The district is characterized by a combination of well-developed formal urban centres, industrial and commercial centres, widespread low cost and informal housing settlements, semi-urban fringe areas and rural areas. According to the Community Survey conducted in 2016, the West Rand District has a total of 330 573 households with an average size of 2.5 per household. 22.6% of the households in the district live in informal dwellings, 61% in formal structures and 8% are backyard dwellers."*
www.cogta.gov.za/ddm/wp-content/uploads/2020/07/west_rand_district_profile.pdf

The district extends from the City of Tshwane in the north along the western boundary of the Johannesburg Metropolitan Municipality, down to boundary of the Sedibeng District Municipality in the south. It is adjacent to the major urban metropolitan areas of the cities of Tshwane and Johannesburg and has close functional linkages with these metropolitan areas. The West Rand Region is 4,095 km^2 size of the land cover.

Gold mining activities, agriculture and tourism constitutes the predominant local economic activities supported by secondary industry. Gold mining activities however declined steadily over the past 30 years severely eroding the economic base of the West Rand. Agriculture includes a wide diversity of agriculture especially in the water rich dolomite rural areas of Mogale City. Extensive farming occurs mainly in the rural areas of Rand West. Tourism in the northern parts of the district is an emerging economic activity and the World Heritage Site in the Sterkfontein Valley could become of specific economic significance to the district, and a major tourist attraction on the West Rand.

There are four major highways and main roads running through the District. The R28/N14 (north/south), which connects Tshwane/Mogale City and Rand West with the Sedibeng District in the south. The N12 (east/west) which connects Potchefstroom/Merafong City/Westonaria and Johannesburg, the R24 (east/west) which connects Johannesburg/Mogale City and across Magaliesburg into Rustenburg and which is a main route connecting the Gauteng Province with Botswana. The N14 (east/southwest), which connects Mogale City and the Northwest Province. A network of district roads connects the various communities to these major arteries. The main rail links through the District includes the main rail connection Johannesburg/Botswana (east/west) via Mogale City and Magaliesburg, Johannesburg/Kimberley and Cape Town via Mogale City and Randfontein. The main suburban rail link with Johannesburg includes Rand West, Mogale City and Merafong City. It is the Johannesburg/Cape Town rail link through Randfontein and Mogale City, which is of significance as this rail link carries large quantities of people and material - including hazardous materials. A main Petronet fuel line also runs east/west through the District where it meets a major fuel pump depot at Tarlton between Krugersdorp and Magaliesburg in Mogale City. The Lanseria Airport, near Mogale City, (located in the Metropolitan area of Johannesburg) is the busiest airport in Africa and is regarded as the window to Africa. Massive growth and the implementation of Lanseria Bussiness and Residential HUB is currently on the cards and are being planned.

For the past decade or more the West Rand District had to contend with a significantly declining economic base brought about by rapidly curtailed mining activities and an inability within the district to concurrently with the depleted mining activities, diversify its economic base.

The declining economic base of the district has resulted in many challenges such as –

- Wide spread unemployment and a rising rate of poverty
- Rapid urbanization and resultant growth in informal settlements
- Mounting pressure on existing infrastructure
- Increasing dependence of communities of government intervention
- Increase in criminal, illegal and anti-social behaviour
- Growing social disparities
- Mounting pressure on the financial capacity of municipalities to address service backlogs
- Pressure on environmental assets
- Lockdown created a large financial gap between communities and created loss of jobs

It is against this background in 2003 the West Rand District Municipality (WRDM) resolved to develop a comprehensive, collective approach to community safety in general and social

crime prevention in particular. In October 2003 a Community Safety Summit, involving all governmental, non-governmental and private sector stakeholders, was held with the view to identify key priorities and focus areas. During May 2006 the MEC for Community Safety held a three-day workshop with all political and functional leaders in the field of public safety in the Gauteng Province with the view to assess and evaluate the progress having been made with the enhancement of safe and sustainable living conditions in the Province. The launching of a Provincial Safety Plan and a Provincial Road Safety Plan were announced at this workshop and municipalities were encouraged to formalize its safety strategies and programs in concurrence with the provincial plans.

In February 2007 the WRDM held a follow-up Community Safety Summit and formally established a multi-discipline, multi-sectoral Community Safety Forum (CSF).

In October 2013 a task team was established consisting of WRDM Public Safety - Disaster Management and Community Safety Unit (Chairperson and Convenor, WRDM Public Safety - Emergency Services, SAPS, Gauteng Department of Community Safety, GIZ German Cooperation, SALGA Gauteng and National Police Secretariat) to consult with stakeholders on issues that relates to safety and security of inhabitants in the West Rand Region and embark on including all this issues on the revised safety plan of West Rand Region.

In 2022 the West Rand District Municipality took information at hand and came to a resolution that the Community Safety Plan needed to be revised. Hence this revision.

3. Community Safety Summit (2007), Task Team (2013 and 2022)

The Summit, attended by representatives of all government, non-governmental and private sector stakeholders, was held on 16 February 2007 and the matters identified as of strategic importance have all been included into this District Safety Plan.

The main purpose of the Summits held in 2003, 2007 and establishment of the task team in 2013 was to source community participation and to secure public consultation prior to the drafting and revision of the District Safety Plan.

After consultation with relevant role players and stakeholders, a decision was taken to revise the plan in line with the current situation on the ground.

4. Community Safety Forum (CSF) as per National Policy

The National Policy on Section 8 Policy implementation indicate that there is a need to clearly specify the practical, supportive elements that are required towards successful implementation of CSF policy. This includes, and not limited to human material and financial resources; and structural design and logically connected to roles and responsibilities.

4.1 Establishment and Location of Community Safety Forums

The Member of the Executive Council (MEC) responsible for policing shall, in consultation with the respective Executive Mayor/s, establish a CSF that is broadly

representative of local community structures and organs of state, to be located and operate within the Metropolitan, District and Local municipal boundaries. The district CSF will consists of representatives from the Local CSFs, under its jurisdiction, in providing further coordination and technical towards ensuring functionally and integration.

4.2 Composition of Community Safety Forums

As a broad structure for integrated local crime prevention planning, coordination and government, as well as community-based organizations and formations.

These should include the following departments (with their agencies)

- Department of Correctional Services (DCS)
- Department of Justice and Constitutional Development (DoJCD)
- Department of Home Affairs (DHA)
- Department of Co-operative Governance and Traditional Affairs (COGTA)
- Metro, District and Local Municipalities
- Southern African Local Government Agency (SALGA)
- Social Cluster Departments (in all spheres of government)
- South African Police Service
- Civilian Secretariat for Police
- Provincial Departments responsible for Community safety

Communities serves as critical role-players in the composition of CSFs, the continuous presence of organized civil society and community structures or sectors is encouraged. Civil society of organized local communities that could form part of CSFs include at least the following:

- Existing CPFs
- Non-governmental organizations working in relevant functional areas (E.G in respect of child protection, victim support, restorative justice or economic empowerment)
- Faith based organizations
- Ward councillors as ex-officio members
- Organisation representing the interests of specific group like:
  - Women's formations
  - Traditional leaders
  - Business sector
  - Other organized community structures such as military veterans

The ideal organisational representative for and effective district or local CSF should comprise all role-players cited above. However, the boundaries for organs of state should be addressed through proper alignment or demarcation processes. A Protocol document on how the organs of state will engage on CSF matters in all spheres of government, within the IGR Framework, should be developed in this regard.

4.3 Work Organisation for Community Safety Forums

- **Local/District /Metropolitan Level Structures:** In order to ensure that CSFs effectively deliver on their mandate at a local, district and metropolitan level, there is a need to establish structures that will be strategically organized into sub-committees should be done through specific programmes where the relevant department will be expected to lead based on its portfolio or mandate. This should not be construed as if the CSF replaces any existing committees and/or forums required in the specific departmental or entity's legislative or policy mandate. However, the CSF may facilitate and coordinate the rationalization of such departmental IGR forums towards clustering and alignment within its sub-committee approach. This will enhance productivity and efficiency. For example, in a sub-committee on transport safety, the officials from the Department of Transport will take the lead in programmes or initiatives relating to such. The CSF and the representative of the provincial department responsible for community safety will assume the responsibility of reporting on CSF activities through the existing government cluster structures at provincial and national government.

  The secretariat function and coordination of these structures remains the joint responsibility of the Metropolitan, District and /or Local Municipality and that of the provincial department responsible for community safety. In the case where a local municipality does not have the capacity or means to establish and administer a CSF, the District municipality concerned, with the assistance of the provincial secretariat, *must* intervene and take lead on ensuring a CSF is established in such municipality. Once the municipality concerned required the necessary capacity and resources, the CSF must be handed back to the respective municipality.

- **Provincial Level** – in order to ensure accountability by the local/ metropolitan and district level CSF, a provincial structure – IJS Development Committee – should be developed and/or strengthened to ensure that relevant and required interventions are addressed and the reports thereof are forwarded to the national cluster structures (JCPS). In consultation with the IJS Developed Committee, the provincial departments of Community Safety and COGTA will facilitate and coordinate planning, programme support capacity building, mentoring, monitoring, oversight, and accountability.

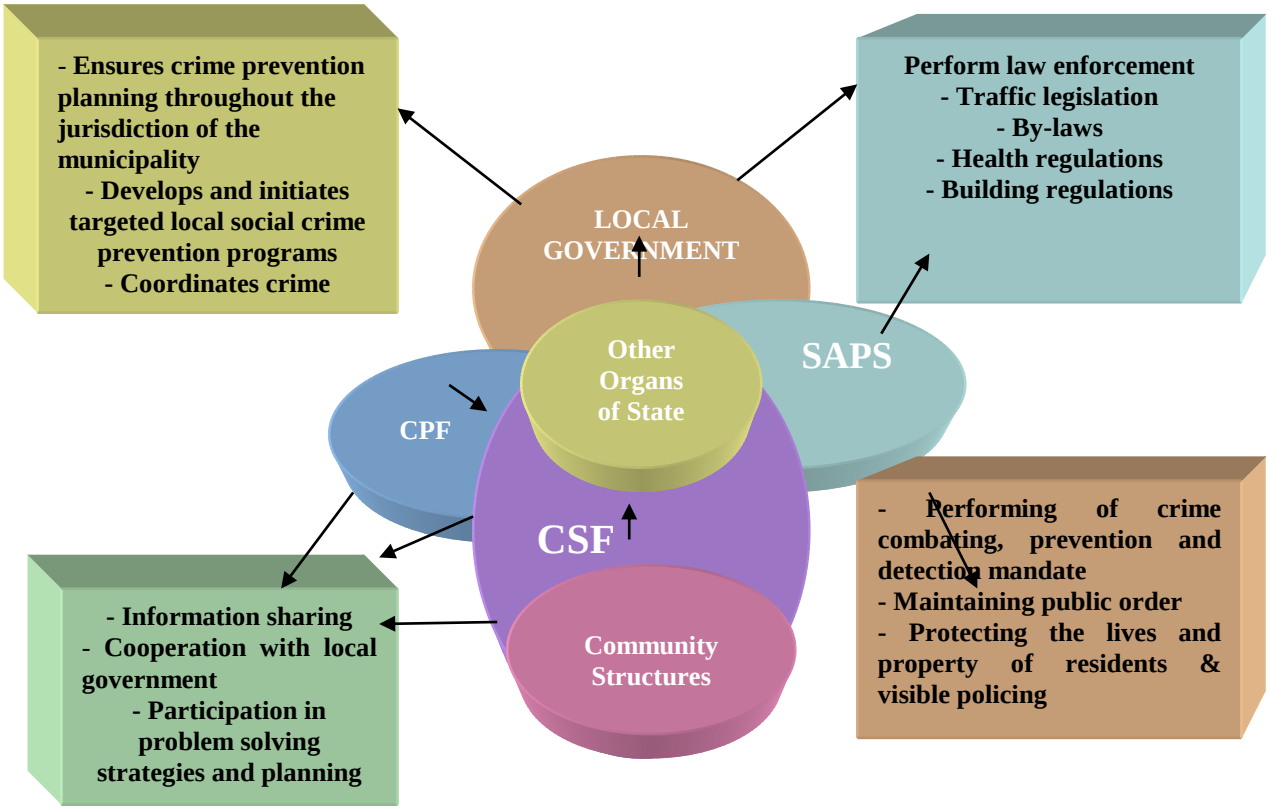
- **National Level** – The Development Committee, in conjunction with the Civilian Secretariat for Police, will provide vision, policy direction, oversight, must develop appropriate and uniform standards to ensure effectiveness and quality deliberations.

5. Establishment of West Rand District Municipality (WRDM) Community Safety Forum

The CSF will be an instrument of integrated development focused on issues and matters posing a threat to community safety and stability. It will be the key linkage between local government, other relevant organs of state and all sectors of society in

the formulation and implementation of comprehensive and overarching disaster management & social crime management/community safety strategies.

Diagram 1 - Relationship between local government, Crime Prevention / Law Enforcement Agencies(CP/LEA) and the community



The West Rand Community Safety Forum (WRCSF) will involve all organs of state in the district as prescribed by National policy; appropriate NGO's and CBO's, the Cluster Community Policing Board, Organised Commerce and Industry, Organised Religious Institutions and Organised Agriculture. The WRCSF will develop a common vision amongst all role-players with regard to social crime management with the view to significantly reduce vulnerability levels.

The WRCSF will comprise of a Broader Forum, Coordinating Committee and Technical Committee. As a guideline the Committees will have terms of reference as follows –

Broader Forum

- It will be Chaired by the MMC Public Safety of the district Municipality or his delegated person
- It will be constituted by Local Municipalities MMCs for Public Safety, District & Local Municipalities Sec 80 s, Managers in Public Safety of the District and Local Municipalities, District Municipality relevant departments that deals with safety, organs of state in the district, appropriate NGO's and CBO's, the Cluster Community Policing Board, Organised Commerce and Industry, Organised Religious Institutions and Organised Agriculture.
- Meet quarterly to monitor and oversight role on promotion of safety and security in the district

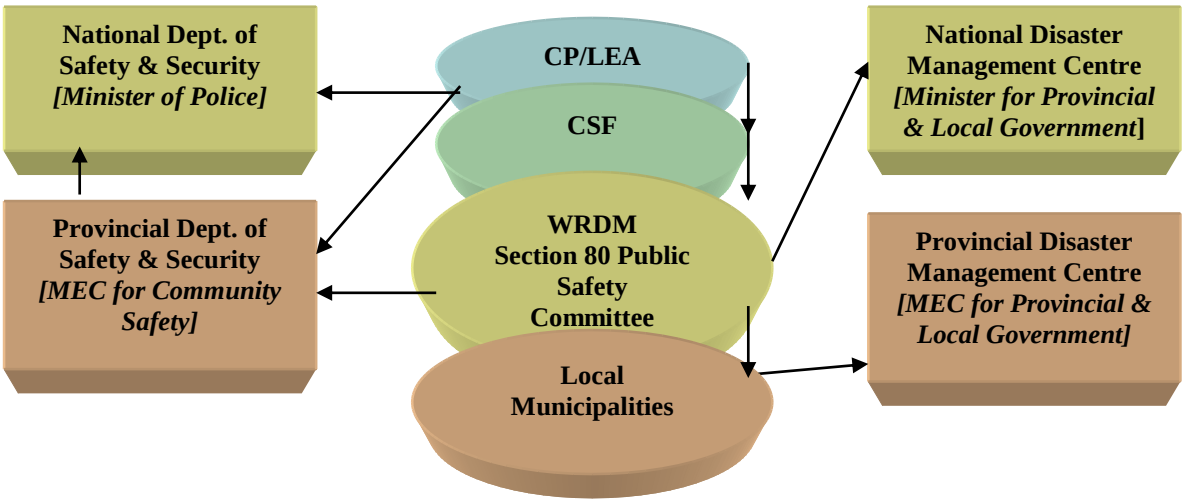
Coordinating Committee

- It will be Chaired by Manager responsible for Community Safety of the district Municipality or his delegated person
- It will be constituted by Managers of Local Municipalities Public Safety, District Municipality relevant departments that deals with safety, representative of a person from the office MEC of Department of Community Safety in the Province, representation of organs of state in the district, appropriate NGO's & CBO's, representative of Organised Commerce and Industry, Organised Religious Institutions and Organised Agriculture
- It will meet bi-monthly to prepare agendas, ensures the implementation of of the decision taken and provides quarterly reports to the Broader Forum.

Technical Committee

- It will be Chaired by Community Safety Officer of the district Municipality
- It will be constituted by Community Safety Officers of the District and Local Municipalities, Social Crime Prevention Officer of SAPS Cluster, District Municipality relevant departments that deals with safety, representative of a person from the office MEC of Department of Community Safety in the Province,(representation of organs of state in the district, appropriate NGO's & CBO's, representative of Organised Commerce and Industry, Organised Religious Institutions and Organised Agriculture when needed)
- Implement programmes and projects as dictated by Community Safety Plan
- Conduct awareness and education programs on safety and security
- Submit quarterly reports to the Coordinating Committee

Diagram 2 - The WRCSF and political linkages



6. Priority focus/intervention areas

The priority focus or intervention areas identified –

- Improved law enforcement
- Improved rural and informal settlement safety
- Reduction in women & child abuse
- Safety in public places
- Improved inter-agency cooperation
- Improved social engineering (social design)

- Encouraging community participation
- Municipal / Provincial infrastructure
- Implementation of maintenance plans and schedules

These, abovementioned focus areas or matters requiring dedicated intervention form the basis of the District Safety Plan whereas such identified matters are translated into multi-disciplinary and multi-sectoral action plans aimed at creating safe, healthy and sustainable communities.

It will be the responsibility of the Department Public Safety of the WRDM (and the Sub-Unit: Community Safety in particular) to facilitate the formulation and implementation of action plans in partnership with relevant stakeholders.

7. Implementation process

The priority focus and intervention areas identified and revised in 2022 and will be modelled into appropriate strategies and programs by the Coordinating Committee of the WRCSF followed by discipline-specific implementation of such strategies and programs.

8. Evaluation and monitoring

The process of evaluation and monitoring of the outcomes of the District Safety Plan will pivot around three levels of assessment -

- Functional evaluation and monitoring with the Department Public Safety
- Political evaluation by the Portfolio Committee: Public Safety of the WRDM
- Partnership evaluation and monitoring by the CSF

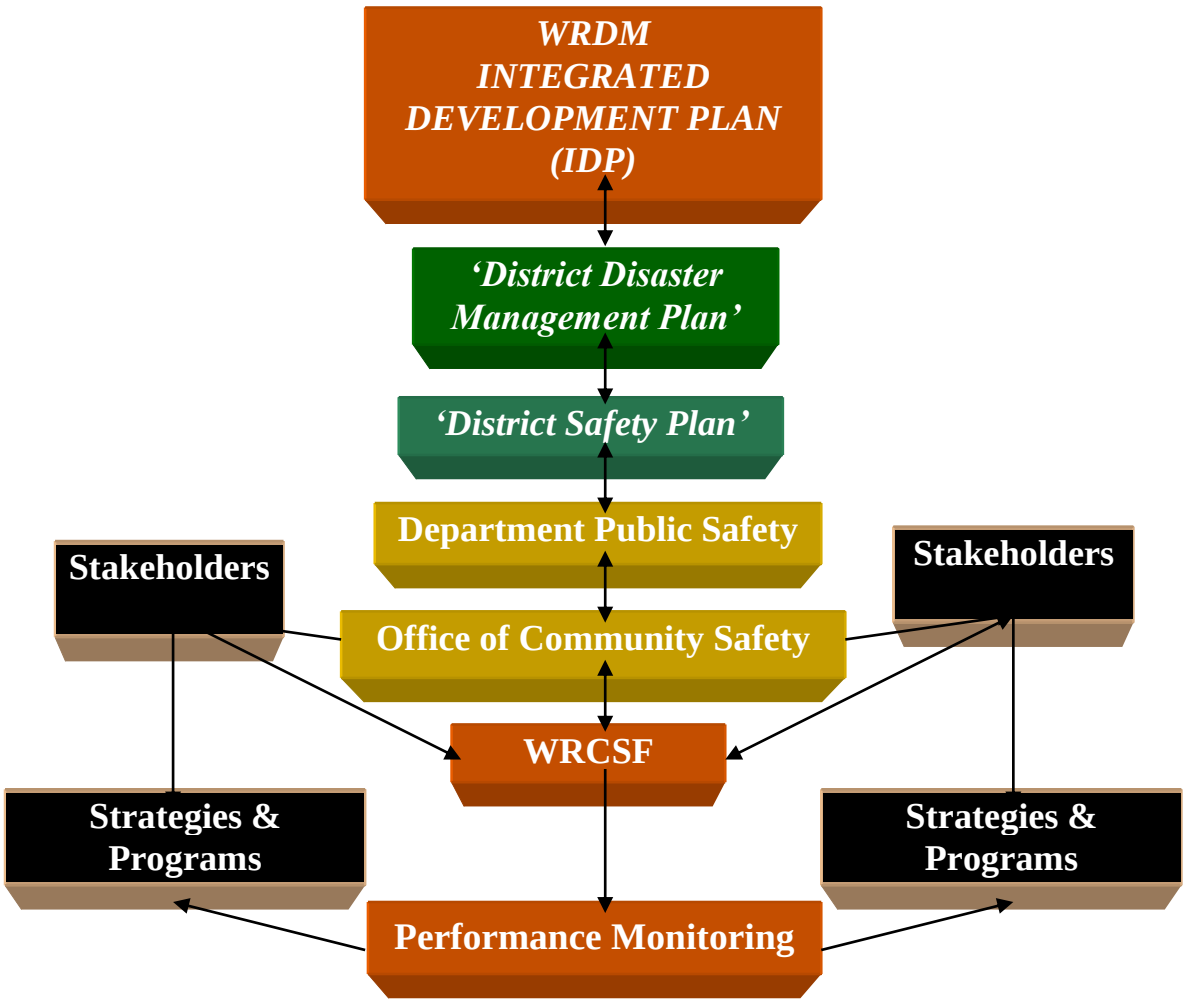
Evaluation and monitoring will be conducted on a quarterly basis.

9. Leadership and vision

The District Safety Plan recognizes the fact that *'making things work to create a safer, sustainable living'* will require masterful leadership and vision of all stakeholders. It will require tenacity and commitment in changing reigning perceptions and reinstating vibrancy and safety in all communities.

10. Institutional context

The Office of Community Safety is located within the Department Public Safety of the West Rand District Municipality and the Manager: Community Safety has full access to all stakeholders. The District Safety Plan forms an integral part of the District Disaster Management Plan which, in turn, in terms of the provisions of section 29 of the Local Government: Municipal Systems Act, 2000, forms a core element of the Integrated Development Plan (IDP) of the district.



11. Local Safety Plans

Local municipalities should establish Community Safety Forums and should develop Local Safety Plans aligned with the District Safety Plan. Local Safety Plans, in particular, should focus on strategy and project implementation in line with the District Safety Plan. On receipt of Local Safety Plans such will be annexed to the District Safety Plan.

12. GLOSSARY OF TERMS

Anti-social behaviour means conduct hostile to or in bridge of socially acceptable behaviour
CBO's mean Community Based Organisations
CPF means Community Policing Forum
CP/LEA means Crime Prevention/Law Enforcement Agencies
CS means Community Safety
CSF means Community Safety Forum
Dedicated staff means members of staff of the WRDM assigned to the OCS on a fulltime basis

Development Agency means the West Rand Development Agency
DM means Disaster Management
DLECC means District Law Enforcement Coordination Committee
DMC means Disaster Management Centre
FPA's mean Fire Protection Associations as contemplated in the National Veld & Forest Fire Act, 1998
IDP means Integrated Development Plan
LED means Local Economic Development
Local municipalities mean the Mogale City, Merafong City, Rand West local municipalities
NGO's mean Non-Governmental Organisations
OCS means Office of Community Safety
PIER means Public Information, Education & Relations programs
SAPS means South African Police Service
Stakeholders mean all relevant organs of state, non-governmental organizations including institutions of religion, community based organizations and volunteers groupings
Volunteers mean persons committed to the rendering of voluntary support as contemplated in the Disaster Management Act, 2002
WRAPB means the West Rand Area Policing Board
WRCSF means West Rand Community Safety Forum
WRDM means the West Rand District Municipality

SAFETY

IMPLEMENTATION

STRATEGY

IMPROVED LAW ENFORCEMENT								
Identified Focus Areas	**Identified Remedial Strategies**	**Actions**	**Key Stakeholders**	**Desired Outcomes**	**Required Resources**	**Timeline**	**Status**	**Budget**
By-Law Enforcement	○ Development of strong emphasis on municipal law enforcement	○ Standardizing of municipal law enforcement ○ Training and appointment of 'Peace Officers'	WRDM, Provincial Office & Local Municipalities	Establishment of shared law enforcement service	Development & approval of shared services strategy	Ongoing	District Law Enforcement Coordinating Committee has been established to standardise law enforcement activities, it meets quarterly	Operational Budget
	○ By-Law units	○ Establishment and sustain By-Law Fora ○ Focused attention on standardized training in the district	WRDM, Provincial Office & Local Municipalities	Effective shared law enforcement Effective enforcing of by-laws	Funding for training	Ongoing		
	○ Electronic by-law enforcement (CCTV)	○ Establishment of CCTV Systems in CBD	WRDM, Provincial Office, Local Municipalities and SAPS	○ Agreements between LEA and Business sector to support CCTV Project ○ Effective law enforcement, crime reduction	Development & approval of shared services strategy Funding	Ongoing	CCTV Forum to be established, managed and sustained	

Identified Focus Areas	Identified Remedial Strategies	Actions	Key Stakeholders	Desired Outcomes	Required Resources	Timeline	Status	Budget
Public participation lacking	○ Promotion of strong emphasis on public education and awareness ○ Strengthening of public participation structures with the view to improve consultation	Development of focused PIER programs for all sectors of society Ensuring proper functioning of CPF's and the CSF	WRDM, Provincial Office, Local Municipalities and SAPS WRDM, Provincial Office, Local Municipalities and SAPS	Improved levels of awareness & preparedness Improved public participation and community responsibility	Budget provision for program implementation Recruitment & training of volunteers & reservists	Ongoing Ongoing	PIER unit has been established conduct programmes regularly Public Safety Awareness Task Team has been established to intensify public participation	Operational Budget
DLECC structure to be strengthened	○ Improved coordination of effort and standardisation ○ Standardising of law enforcement capacity throughout district	Regular meetings to be held and outcomes of resolutions monitored	WRDM, Provincial Office, Local Municipalities, SAPS and other role players WRDM, Provincial Office, Local Municipalities, SAPS and other role players	Establishment of shared law enforcement service Sustaining cohesive multi-sectoral network	Development & approval of shared services strategy Establishment and maintenance of WRDM Communication HUB	Ongoing Ongoing	District Law Enforcement Coordinating Committee functional to standardise law enforcement activities, meets quarterly	Operational Budget

Identified Focus Areas	Identified Remedial Strategies	Actions	Key Stakeholders	Desired Outcomes	Required Resources	Timeline	Status	Budget
Perception of current crime levels extremely negative	○ Communicate crime statistics ○ Promote public participation ○ Promote the *'Take Charge'* concept	Outreach programs PIER, volunteer & neighbourhood watch programs PIER, volunteer & neighbourhood watch programs	WRDM, Local Municipalities, SAPS and other role players	Altering of perceptions Improved public participation	Budget provision for program implementation & dedicated CS staff	Ongoing	Public Safety Task Team has been established to intensify public participation	Operational Budget

IMPROVED RURAL & INFORMAL SETTLEMENT SAFETY								
Lack of emphasis on rural and informal settlement crime & vulnerability	○ Promotion of safety in Rural and Informal areas	Active crime prevention programs & effective law enforcement	WRDM, SAPS and local municipalities	Orderly progressive & sustainable development	Effective Rural Safety Fora Revised by-laws and well trained law enforcement capacity	Ongoing	Ongoing development and revision of Rural Safety Plans	Operational Budget
Identified Focus Areas	**Identified Remedial Strategies**	**Actions**	**Key Stakeholders**	**Desired Outcomes**	**Required Resources**	**Timeline**	**Status**	**Budget**
Inadequate Sector Policing	○ Active engaging of SAPS and community volunteers	Purposeful participation in structures	CPF's, WRDM, SAPS	Constructive beneficial relations Between the Police and Communties	Budget provision for program implementation	Ongoing	CS Unit participating in CPF structures	Operational Budget

Inadequate radio communication between communities and the SAPS	○ Re-planning of radio usage architecture	Replacement of redundant two-way radios & repairing of existing equipment Executing of planning programs and training of volunteer users	DMC/ ES Response Stations & SAPS DMC/ ES Response Stations & SAPS	Effective 24/7 communication Effective 24/7 communication	Budget provision for procuring and maintaining of radio equipment		DMC has embarked on a programme of repairing the repeaters so as to improve radio communication	Operational Budget

Identified Focus Areas	Identified Remedial Strategies	Actions	Key Stakeholders	Desired Outcomes	Required Resources	Timeline	Status	Budget
Private security providers often hostile towards workers creating polarization	○ Improved Sector Policing ○ Improved CPF participation	Engaging Provincial Commissioner Outreach, PIER and neighbourhood watch programs	CPF's, WRDM, Provincial Office	Improved resources Active community & stakeholder participation	Budget provision for program and implementation	Ongoing	Engagements towards formulation of West Rand Security Forum	Operational Budget
Inadequate naming and numbering of roads and properties impacting on response times	○ Naming and numbering of rural, informal routes and properties	Conducting of naming and numbering programs throughout the district providing improved access	CPF's, WRDM, Provincial Office	Visible naming & numbering of routes and properties	Budget provision for program and implementation	Ongoing	Campaigns on numbering of plots and streets conducted	Operational Budget
Flawed interpersonal communication within communities	○ Introduction of *'Take Charge'* campaign in rural and informal communities	Strengthening effective PIER campaigns	CPF's, WRDM, Provincial Office	Active community participation in safety programs	Budget provision for program implementation as well as active volunteers	Ongoing	Public Safety PIER Task Team established	Operational Budget

REDUCTION IN WOMEN AND CHILD ABUSE								
Progressive loss of moral values	○ Break the silence & promote public	Development of action plans by all stakeholders	CPF's, WRDM, SAPS, Provincial Office	Creating awareness on Gender Based	Budget provision for program implementation	Ongoing	Quarterly awareness campaigns	Operational Budget

Growing presence of undocumented persons	○ Encouraging community participation, improved Sector Policing and promotion of *'Take Charge'* campaign	Improved community participation in CPF activities, neighbourhood watches & other volunteer structures	WRDM, SAPS, Local Municipalities, DoHA, CPF, NGO's	Improvement in the societal fibre and the gaining of community momentum against crime & anti-social conduct	Assist in formulation on Operation Plans and Coordination	Ongoing	CS Unit is assisting SAPS through CPFs to establish Sector forums and encourage communities to participate	Operational Budget
	awareness and compassion			Violence			conducted	

Identified Focus Areas	**Identified Remedial Strategies**	**Actions**	**Key Stakeholders**	**Desired Outcomes**	**Required Resources**	**Timeline**	**Status**	**Budget**
Increasing substance abuse within poor communities	○ Promote anti-substance abuse programs in schools and communities	Development of action plans by all stakeholders	WRDM, SAPS, Social Dev and Education Dept	Laying the foundation for anti-substance abuse culture	Budget provision for program implementation	Ongoing	Regular campaigns are conducted by CS including other stakeholders	Operational Budget
Increasing occurrence of Homeless People and vagrants	○ Detect and record Homeless People and vagrants ○ Develop appropriate programs	Develop outreach & support programs Encourage sector specific planning and support	WRDM, SAPS and local municipalities, CPF	Reduction in Homeless People and vagrants Active progressive mitigation	Budget provision for program implementation	Ongoing	Joint programmes to be developed to address Homeless People and vagrants	Operational Budget

IMPROVED SAFETY IN PUBLIC PLACES								
Identified Focus Areas	**Identified Remedial Strategies**	**Actions**	**Key Stakeholders**	**Desired Outcomes**	**Required Resources**	**Timeline**	**Status**	**Budget**
Increasing sense of lack of safety	○ Develop and implement programs aimed at making public places safe ○ Promote the *'Take charge'* campaign	Ensuring public participation	WRDM, SAPS and local municipalities	Improved safety in public places	Maintenance budgets Budget provision	Ongoing	Ensuring compliance for planned activities	Operational Budget
IMPROVED INTER-AGENCY COOPERATION								
Lack of coordinated communication between agencies	○ Ensure multi-agency communication via coordination structures and submission of reports to CSF	Effective 24/7 functioning of the Community Safety Unit - Diligent administrative support provided by CS Unit	WRDM, SAPS and local municipalities, CSF	Improved multi-disciplinary and multi-sectoral cooperation and synergy of purpose	Dedicated staff structure	Ongoing	Community Safety Unit on 24/7 standby to respond to any emergencies	Operational Budget

Identified Focus Areas	**Identified Remedial Strategies**	**Actions**	**Key Stakeholders**	**Desired Outcomes**	**Required Resources**	**Timeline**	**Status**	**Budget**
Lack of coordinated and integrated law enforcement	○ Ensure effective functioning of the DLECC ○ Defining and entrusting of clear strategy and program responsibilities to specific agencies ○ Regular strategy and program	Development & approval of shared services strategy	WRDM, local municipalities, SAPS, other role players	Shared law enforcement services	Strategic budgetary provision	Ongoing	District Law Enforcement Coordinating Committee functioning	Operational Budget

Identified Focus Areas	Identified Remedial Strategies	Actions	Key Stakeholders	Desired Outcomes	Required Resources	Timeline	Progress	Budget
Crime prevention initiatives to be properly structured	○ CSF to act as coordination conduit for all initiatives	Submission of regular progress reports to CSF	CS & all stakeholders	Empowering CSF to act as conduit for all initiatives	Dedicated staff structure & administrative capacity	Ongoing	Programme for the establishment of CSF in Local Municipalities to be developed	Operational Budget
	revision by CSF							

IMPROVED SOCIAL ENGINEERING

Identified Focus Areas	Identified Remedial Strategies	Actions	Key Stakeholders	Desired Outcomes	Required Resources	Timeline	Progress	Budget
Poor street lighting	○ Ensuring on-going municipal maintenance programs	Defined municipal maintenance programs	Local municipalities	Improved maintenance	Dedicated budgetary provisions	Ongoing	Ongoing engagements with Local Municipalities when cases are reported through the EOC.	Operational Budget
	○ Encouraging reporting of dysfunctional systems	Public access to the Emergency Operations Centre – marketing of emergency number	WRDM	Improved maintenance & response to public complaints	Budget provision for program implementing	Ongoing		

Tall grass in open public spaces	○ Ensuring on-going municipal maintenance programs ○ Creation of public awareness and reporting mechanisms	Defined municipal maintenance programs Public access to the Emergency Operations Centre – marketing of	Local municipalities WRDM	Improved maintenance Improved maintenance & response to public complaints	Dedicated budgetary provisions Budget provision for program implementing	Ongoing Ongoing	Regular engagements with Local Municipalities when cases are reported through the EOC.	Operational Budget
Lack of by-laws enforcement to regulate development	○ Developing of appropriate by-laws ○ Establishment of by-law enforcement capacity	Establishment of revision team	WRDM, Local municipalities	Progressive revision of by-laws	Funding	Ongoing	Civil Contingencies and Development By-Law promulgated	Operational Budget

Identified Focus Areas	Identified Remedial Strategies	Actions	Key Stakeholders	Desired Outcomes	Required Resources	Timeline	Progress	Budget
Lack of traffic calming measures in, townships and main suburban streets	○ Diligent & visible law enforcement ○ Installation of appropriate regulating traffic control signs ○ Community involvement in assessing of calming measures ○ Introduction of scholar programs & road safety programs at schools	Planning & implementation of regular joint operations Conducting of district audits on road safety Drafting of focused awareness programs	WRDM, SAPS & local municipalities	Effective visible law enforcement Maintaining of traffic signs Obtaining of public buy-in and participation Creation of a road safety culture resulting in long term results	Budget provision for program implementation	Ongoing	District Law Enforcement Coordinating Committee and RIMS functional	Operational Budget

Identified Focus Areas	Identified Remedial Strategies	Actions	Key Stakeholders	Desired Outcomes	Required Resources	Timeline	Progress	Budget
Lack of access to recreation facilities, police stations, clinics schools and major urban commercial facilities	○ Assessment of facilities from a public safety perspective and submission of assessment reports to relevant stakeholders	Drafting of recommendations to decision makers Sourcing of budget provisions	CSF, CS & Social Development WRDM & local municipalities	Improved access to recreation facilities in particularly disadvantaged areas	Budget provisions	Ongoing	Relevant Local Municipalities departments regularly engaged when need identified	Operational Budget
Urban development planning to take due note of progressive reduction in risk & vulnerability	○ Ongoing sensitizing of relevant stakeholders ○ Safety risks to be highlighted in annual risk & vulnerability assessments	Drafting of recommendations to decision makers Drafting of recommendations to decision makers	CSF & CS	Progressive urban design aimed at risk and vulnerability reduction Reduction in risk & vulnerability	Budget provisions	Ongoing	Regular risk assessments conducted and submitted to relevant decision makers.	Operational Budget
Safety of public transport inadequate	○ Education of taxi industry & introduction of	Development of appropriate training programs	WRDM, Provincial Office & Directorate Transport	Improved levels of safety within the taxi industry	Budget provisions	Ongoing	PIER functional to conduct programmes regularly	Operational Budget

	safety campaign ○ Provision of hygienic and safe transport facilities	Development of proper facilities throughout the district	Provincial Office & Directorate Transport				Public Safety Task Team established to intensify public participation	

ENCOURAGE COMMUNITY PARTICIPATION								
Identified Focus Areas	**Identified Remedial Strategies**	**Actions**	**Key Stakeholders**	**Desired Outcomes**	**Required Resources**	**Timeline**	**Progress**	**Budget**
Lack of public responsibility & accountability resulting from lack of public participation	○ Introduction of *'Take Charge* campaign ○ Ongoing focused *PIER* programs ○ Introduction of leadership programs amongst the youth	Development and implementation of appropriate programs	All stakeholders, CSF & CS	Ongoing campaigns & programs aimed at building a safe society	Budget provision for program implementation	Ongoing	PIER unit has been established which conduct programmes regularly	Operational Budget
Public awareness levels low	○ Introduction of *'Take Charge'* campaign ○ Ongoing focused *PIER* programs ○ Introduction of leadership programs amongst the youth ○ Advocating of voluntary public participation	Development and implementation of appropriate programs	All stakeholders, CSF & CS	Ongoing campaigns & programs aimed at building a safe society	Budget provision for program implementation	Ongoing	PIER unit has been established which conduct programmes regularly	Operational Budget

CHAPTER 8

WRDM STRATEGIC FRAMEWORK

A UNITED VISION IN THE ENTIRE DISTRICT, I.E. THE ENTIRE DISTRICT (POLITICIANS AND OFFICIALS) ARE UNITED BEHIND A COMMON VISION FOR THE WEST RAND

OBJECTIVES	KEY PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	PERFORMANCE TARGETS	ACTION PLANS	TARGET DATE	RESPONSIBLE
Reduce risk & vulnerability profiles of high risk communities	Halve poverty .	Reduction in losses suffered	Identify high risk informal and rural areas. Facilitate de-densification of informal settlements Eliminate unlawful occupation of buildings	Effective Reactive & Proactive service delivery in accordance with Disaster Management Plan	Ongoing measured on a monthly & quarterly basis	EM Public Safety
	Compilation of strategic programme addressing clear steps to halve poverty for better and safer life for all	Improvement of access to services	Proficient handling of emergency calls	Re-alignment of Department as per proposed structure Training & coaching of emergency dispatchers		
				Upgrading of software in EOC in cooperation with Provincial EOC		
Reduce the risk of fire, crime and unsafe conditions	Creating a better safer life for all, the promotion of the culture of democracy and human rights, non racism, new patriotism and integrated	Number of WRDM resolutions executed within determined timeframes. - .	Establishment of CPU's in wards in the district area. Establishment of the Volunteer Unit	Restructuring of Department into three objective driven Sub-Departments – ■Reactive Services ■Proactive Services ■Community Safety		EM Public Safety

	approach in provision of services to the people					
Persistently and constructively influence perceptions in the district gradually changing the siege mentality into a resilient open society		Compilation of a public participation programme	30% reduction in violent crimes 10% reduction in fatalities of road accidents. Revision of Community Safety Plan	Establishment of the Community Safety Forum & the holding of a Safety Summit		
Reinforce the dynamic positive role of the WRDM in the district		Happy, well trained, well informed and well directed personnel corps	Strengthening of stability, proficiency and discipline within the department and retaining of skills.	Finalising of progression system Progressive filling of vacancies in accordance with accurate budgetary planning Asserting of clear communication channels Reintroduction of Annual Awards Expediting of disciplinary procedures to prevent systemic paralysis		

OBJECTIVES	KEY PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	PERFORMANCE TARGETS	ACTION PLANS	TARGET DATE	RESPONSIBLE
Sustain skilled, expert focus on key functional spheres of public safety	Compilation of a Five Year Development Plan based on united vision plan.	Approval of the 5 year Development Plan to include all areas identified			Ongoing	EM Public Safety
		Organisational structure aligned to the Council's strategies	Maximise deliverables in accordance with national and provincial norms & standards	Realignment of Department Public Safety into three objective driven Sub-Departments – ■ Reactive Services ■ Proactive Services ■ Community Safety		
		Integrated Environment Management plan	Visible reduction in environmental degradation	Alignment of environmental management issues with the District Disaster Management Plan Functional re-alignment of functions		
		District Disaster Management Plan	Disaster Management Plan revision to be completed			

ACTIVELY PROMOTE, FORGE AND ADVANCE PARTNERSHIP, COHESION, COOPERATION & SHARED SERVICES IN THE DISTRICT

OBJECTIVES	KEY PERFORMANCE AREA	PERFORMANCE TARGETS	ACTION PLANS	TARGET DATE	RESPONSIBLE
Maximize collective capacity of available resources	Pooling of resources and strengths.	Completion of feasibility study			EM Public Safety
	Work towards comparative advantage instead of competing against each other	Detectable impact on improved land use management throughout the district, improved control over informal settlements and the curbing of the establishment of further informal settlements on farm land & plots	Drafting & approval and enforcement of land use management by-laws Establishment of land use control task team initially comprising of existing officials & volunteers Training of officials and volunteers as *'peace officers'*	Ongoig	
		30% reduction in road fatalities during the 5 years and 10% reduction in violent crimes	Structural re-alignment of Department Public Safety with the view to ensure diligent focus	Ongoing	
			Drafting of regionalised Street & Miscellaneous by-laws Revision of 4 by-laws per quarter	Ongoing	

SOCIAL SECURITY (HEALTH AND SAFETY) COMMUNITY SERVICES

OBJECTIVES	KEY PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	PERFORMANCE TARGETS	ACTION PLANS	TARGET DATE	RESPONSIBLE
Deploy resources effectively & rapidly	Strengthen the functioning of Outbreak Response Team (ORT)	Outbreak Plans (training and operational) are drafted and are included into the Disaster Plan	Ensuring of rapid and coordinated deployment of resources	Include Outbreak Plan into revised Disaster Management Plan Standby and activation systems to be included into disaster management software at the EOC		EM Public Safety

EMERGENCY MEDICAL SERVICES (EMS)						
OBJECTIVES	KEY PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	PERFORMANCE TARGETS	ACTION PLANS	TARGET DATE	RESPONSIBLE
Render a world-class responsive service to the residents of the district	Improve access to EMS	Number of emergency services attended in compliance to norms & standards	Accurate recording & reporting of actual service data	Sustainable electronic linkage with all Stations Trained, competent & productive administrative staff Daily, weekly & monthly collation of operational data	Ongoing	EM Public Safety

OBJECTIVES	KEY PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	PERFORMANCE TARGETS	ACTION PLANS	TARGET DATE	RESPONSIBLE
Render a world-class responsive service to the residents of the district	Improve response time for Priority 1 patients (Respond within 15 minutes)	Compliance to norms & standard requirements	80% of P1 patients reached within 15 minutes	Daily, weekly & monthly evaluation of operational data Immediate implementation of remedial measures Diligent enforcement of first responder approach	Ongoing	E M Public Safety

FIRE BRIGADE & RESCUE SERVICES						
OBJECTIVES	KEY PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	PERFORMANCE TARGETS	ACTION PLANS	TARGET DATE	RESPONSIBLE
Contain fire damage and limit losses suffered – responsive and proficient	Improve access to fire brigade services	Number of calls for fire brigade and rescue services attended	Accurate recording & reporting of actual service data	Sustainable electronic linkage with all Stations Trained, competent & productive administrative staff Daily, weekly & monthly collation of operational data	Ongoing	EM Public Safety
	Improve service proficiency and response Reduce downtime and maintenance costs	Fire vehicles	Provide 5 new fire tenders	Award tender		EM Public Safety
		Adequate equipment	Compliance to norms & standards	Conduct overall equipment replacement audit and budget accordingly		EM Public Safety
Build & retain skill levels	Effective brigade services	Training in F1 and F2	15 candidates	Secure training programs in association with HR		EM Public Safety
Improve response rates and reduce losses		Fire-house in Kagiso	Completed feasibility study in association with Messrs Lefika	Secure formal discussions with Messrs Lefika and draft concept agreement		EM Public Safety
Create improved awareness and preparedness	Identified high risk areas	Awareness campaigns	4 campaigns in local municipal areas	Implement PIER programs		EM Public Safety
Establish and maintain adequate fire fighting support capacity	Community participation	Number of Fire Prevention Association (FPA)	7 FPA’s established and registered.	Complete registration submissions to DWAF		EM Public Safety

		established				
		Provision of training to stakeholders as required by the Disaster Management Act, 2002	Accurately recording and reporting of training provided	Structure training requirements and provide ongoing training Realignment of Department Public Safety	Ongoing	EM Public Safety

FIRE RISK MANAGEMENT						
OBJECTIVES	KEY PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	PERFORMANCE TARGETS	ACTION PLANS	TARGET DATE	RESPONSIBLE
Reinforcing the required focus on prevention	Provide risk management plan	Provide public information & education campaigns (PIER)	Ongoing campaigns in local municipal areas	Implement PIER programs	Feb – April of every year	EM Public Safety
Reducing of risk and vulnerability	Enforcing and maintaining of safety standards	Conducting of regular inspections and implementation of remedial measures – trade licenses, hazardous material, law enforcement, fire safety plans & fire hydrant systems	Compliance to statutory requirements	Revision of Fire Brigade by-laws & diligent law enforcement Completion of non-compliance database for district		EM Public Safety EM Public Safety
Address root causes of fire losses	Identify standard lapses, lack of awareness and prevention	Conducting of fire investigations	All structure fires investigated and reported	Revision of investigation reporting with the view to secure risk reduction		EM Public Safety
Align resources in the district in order to maximise collective output	Promoting an integrated and cooperative approach to safety standards	Establish a District Building Plan Forum	Coordinate approval of building plans and ensuring no unauthorised construction	Ensure monthly meetings with stakeholders	Ongoing	EM Public Safety

DISASTER MANAGEMENT & SOCIAL CRIME PREVENTION						
OBJECTIVES	KEY PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	PERFORMANCE TARGETS	ACTION PLANS	TARGET DATE	RESPONSIBLE
Promote risk awareness and develop institutional culture of prevention	Develop District Disaster Management Plan for IDP	Review the 2006/07 District Disaster Management Plan	Facilitate inclusive revision process	Revision of risk & vulnerability assessments Reviewing of current Plan	30 March 2022	EM Public Safety
	Develop District Community Safety Plan for inclusion into the District Disaster Management Plan	Review existing District Social Crime Prevention Plan	Facilitate inclusive revision process			EM Public Safety
		Reduction in annual road accident fatalities	10 % reduction per annum	Drafting of District Road Safety Plan		EM Public Safety
		Align District Plan to Provincial Safety Strategy Plan	Review existing Plan	Include Provincial targets and objectives		EM Public Safety
		Reduction in violent crimes	30% reduction	Revision of Safety Plan following Summit		EM Public Safety
Improve community participation and support	Community participation	Establish Volunteer Unit in accordance with Disaster Management Act, 2002	Approval & implementation of Volunteer Policy	Drafting of Policy and establishment of Volunteer Unit Realignment of the Department Public Safety	Ongoing	EM Public Safety
		Conducting of awareness campaigns	4 Campaigns in local municipal areas	Implement PIER programs		EM Public Safety

EMERGENCY OPERATIONS CENTRE (EOC)						
OBJECTIVES	KEY PERFORMANCE AREA	KEY PERFORMANCE INDICATOR	PERFORMANCE TARGETS	ACTION PLANS	TARGET DATE	RESPONSIBLE
Secure effective responsive access to trauma & service assistance	Ensure effective and efficient multi-disciplinary operations	Accurate in-time capturing of information	Compliance to statutory requirements	Ensure proficient training of staff & efficient functioning of hard & software systems	Ongoing	EM Public Safety,
Maintain effective resource coordination		Calls to be attended to within 10 – 15 seconds	Accurate data capturing and reporting of non-compliance	Ensure proficient training of staff & efficient functioning of hard & software systems Daily, weekly & monthly data to be verified	Ongoing	EM Public Safety
Maintain effective resource coordination		Average transaction time 1 minute	Accurate data capturing and reporting of non-compliance	Draft a non-compliance program focused on the immediate implementation of remedial measures	Ongoing	EM Public Safety
Maintain effective resource coordination		Provision of ongoing staff training	All staff members to attend at least 2 training programs per annum	Draft a structured training program	Ongoing	EM Corp Serv

PUBLIC SAFETY WORKSHOP
Integrated Summary of Captured Focus Areas

1. Priorities of Public Safety following the background of IDP's

- ✓ Availability of appropriate resources – development should be associated with concurrent improvement of public safety resources
- ✓ Integrated EOC – including SAPS
- ✓ Improvement of assess to services
- ✓ Availability of weighbridge to curb overloading and damage to roads
- ✓ Establish a regionalized law enforcement unit in the district PROCESS
- ✓ Strengthening GCR vision amongst all stakeholders
- ✓ Improvement of road traffic safety on the R28 between N12 and Randfontein
- ✓ Risk & vulnerability assessments as included into the District Disaster Management Plan should form a directive measure for public safety priorities, activities and strategies

2. Clarify roles of political and administrative leadership

Officials have an administrative responsibility with clear lines of communication with no political role. Political leadership to formulate policy and responsible for the monitoring of the execution of government programs and policies. Officials responsible for execution.

3. Coordination of Structures – list

- ✓ MMTT's *[Mitigation Monitoring Task Team]*
- ✓ DLECC *[District Law Enforcement Coordinating Committee]*
- ✓ PIER *[Public Information & Education]*
- ✓ TMG *[Transport Management Group]*
- ✓ CoC *[Coordinating Committee]*
- ✓ APCC *[Area Policing Coordinating Committee]*
- ✓ Ward Committees
- ✓ CPF's *[Community Policing Forum]*
- ✓ FPA's *[Fire Prevention Association]*
- ✓ CPU's *[Community Protection Unit]*
- ✓ CSF *[Community Safety Forum]*
- ✓ Section 80's

4. Joined integration planning- how?

- ✓ Revive DLECC
- ✓ Terms of reference to be clear
- ✓ DLECC to be meet monthly with ¼ evaluation & monitoring meetings
- ✓ Maximize existing structures

5. Implementation – how?

- ✓ The DLECC to be driven by the MMC of the WRDM
- ✓ All campaigns to be regionalized
- ✓ Establishment of Ad-Hoc Committee to investigate regionalization – membership to be clarified by political leadership
- ✓ Implement strategies developed by Coordinating Structures
- ✓ DLECC to be represented in TMG
- ✓ Need for standardized training

6. Monitoring and evaluation – how?

¼ Revision by Section 80 Committees to revisit strategies and programs

7. Reporting and review – how?

Monthly functional meetings and ¼ revision meetings with Section 80 members

CHAPTER 9

RISK & VULNERABILITY ASSESSMENTS

COMPOSITE RISK PROFILE – WEST RAND DISTRICT

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INTRODUCTION

The process of compiling a comprehensive risk & vulnerability overview for the district annually includes the revision of the local risk & vulnerability profiles of the local municipalities as reflected in this document.

PART A STATUTORY BACKGROUND

Section 47 of the Disaster Management Act, 2002, requires the following –

(1) A municipal disaster management centre, to the extent that it has the capacity must give guidance to organs of state, the private sector, non-governmental organisations, communities and individuals in the municipal area to assess and prevent or reduce the risk of disasters, including –
   (a) ways and means of –
      (i) determining levels of risk;
      (ii) assessing the vulnerability of communities and households to disasters that may occur;
      (iii) increasing the capacity of communities and households to minimize the risk and impact of disasters that may occur; and
      (iv) monitoring the likelihood of, and the state of alertness to, disasters that may occur;
   (b) the development and implementation of appropriate prevention and mitigation methodologies;
   (c) the integration of prevention and mitigation methodologies with development plans, programmes and initiatives; and
   (d) the management of high-risk developments.

(2) A municipal disaster management centre must promote formal and informal initiatives that encourage risk-avoidance behaviour by organs of state, the private sector, non-governmental organizations, communities, households and individuals in the municipal area.

Section 48 of the Disaster Management Act, 2002, requires the following –

(1) A municipal disaster management centre must –
   (a) monitor –
      (i) progress with the preparation and regular updating in terms of sections 52 and 53 of disaster management plans and strategies by municipal organs of state involved in disaster management in the municipal area;

(ii) formal and informal prevention, mitigation and response initiatives by municipal organs of state, the private sector, non-governmental organizations and communities in the municipal area, including the integration of these initiatives with development plans; and

(iii) the compliance in the municipal area with key performance indicators envisaged by section 7(2)(m); and

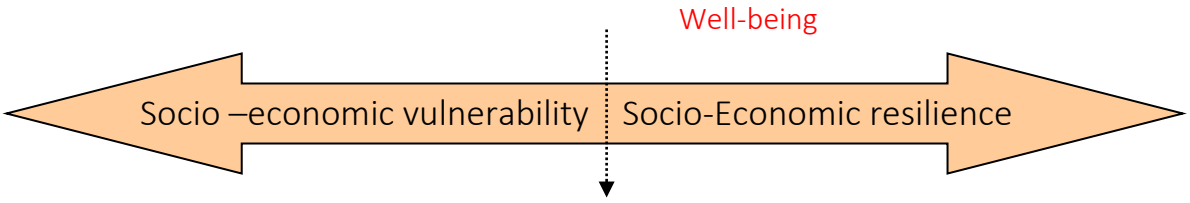
(b) from time to time, measure performance and evaluate such progress and initiatives.

The submission of this report concurs with the requirements of inter alia, the abovementioned statutory requirements as well as the requirements of the District Disaster Management Plan, as contained in the IDP of the WRDM.

PART B PURPOSE OF REPORT

The purpose of the report is to provide a composite, contextual overview of the risk profile of the district and to highlight the priority risk challenges against the background of the District Disaster Management Plan (Revision 8) which Plan is currently subjected to revision.

The purpose of the report is to provide a composite, contextual overview of the risk profile of the district and to identify risk factors in the provision of 'well being' in the district. The term 'well being' within the disaster management context could be depicted as follows –



The term 'well-being' does not refer to an utopia but refers to a situation within which tolerable (or manageable) risks occur whereas such tolerable risks in turn concur with value judgments based on political and moral value systems. The report to seek to find a value judgment equilibrium between tolerable risks and the general principle of duty of care.

The West Rand District is a complex combination of urban, semi-urban and semi-rural as well as rural communities. It represents extremely poor urban informal settlements locked in densely populated areas with lower middleclass to middleclass formal areas, middleclass to upper-middleclass urban areas and upper-class urban areas. The opinions expressed in this report are linked to the principles of the prevention and mitigation of events, which could have a detrimental impact on sustainable development and community 'well-being'.

PART C DEFINING THE APPROACH

The purpose of the report implies that it must be frank, direct and to the point for it to have any significant value and purpose. Identifying and defining prevailing priority risks in the district considers the following factors –

Impact of risks – linked to the capacity of the affected society to risk consequences, and its ability to recover from such consequences without burdening the state as well as the institutional capacity to respond to, manage and rehabilitate such consequences.

Probability of risk events – linked to available resources to predict, prevent, mitigate, and prepare for such events.

Slow or rapid onset nature of events – linked to the collective ability and capacity of municipalities to predict and predetermine an event map, to prevent, mitigate and prepare for such events.

Complex & compound emergencies – linked to the collective ability and capacity of municipalities to predetermine an event map to counter the occurrence of such complex and compound emergencies.

Proactive capacity - linked to the institutional capacity to prevent and mitigate undesired events from happening.

Reactive capacity – linked to the institutional capacity to respond to the consequences of undesired events promptly and proficiently.

Capacity – linked to the regulatory ability of municipalities to implement and assert structural and non-structural methods of ensuring effective managing of risks & vulnerability.

PART D ELEMENTS OF RISK & VULNERABILITY

In order to compile a comprehensive assessment, report the following risk & vulnerability elements had to be assessed –

Developmental stability
- ❖ Risk reduction strategies
- ❖ Infrastructural development and sustainability

Economic stability
- ❖ Investment Growth

Social stability
- ❖ Poverty levels
- ❖ HIV/Aids
- ❖ Crime profiles
- ❖ Social crime profiles

Institutional stability
- ❖ Service & Financial sustainability
- ❖ Cooperative Government
- ❖ Leadership stability

Environmental stability

Each of the assessed elements will be briefly discussed.

1. DEVELOPMENTAL STABILITY

High-risk areas

This risk & vulnerability element refers to the extent to which unsafe living conditions have been mitigated during the past 24 months in the process of achieving community well-being. The following provides a brief background regarding high-risk settlements -

- ❖ *Bekkersdal - Westonaria*
  Progress with the BURP program has been slow and most residents are still living in poor conditions prone to flooding and fire. Those living in geologically unsafe areas have not been removed. The fire risk in the informal settlements is unacceptably high and there is an acute absence of fire hydrants in and around the vast informal settlements of Bekkersdal.

- ❖ *Waterworks - Westonaria*
  During December 2004 approximately 175 families were relocated from the low-lying flood prone area to the former sport grounds at Waterworks. To date no long-term solution had been determined about this community. Waterworks settlement has only one (1) tap for approximately 698 families, no sanitation facilities, and no electricity

supply. There is no fire hydrant available at Waterworks demanding the fighting of structure fires with the on-vehicle water capacity, only. Any multiple structure fire could result in a disaster merely because of lack of water supply to the fire tenders. Waterworks could be regarded as a death trap. A further significant aspect of concern is that the settlement is located on top of Rand Water pipelines. Waterworks is gradually expanding.

❖ *Speru-Speru*

This settlement is located near the T-junction of the R28 and the Fochville road towards Vereeniging and comprise of +/- 1650 structures. Initially roof structures were erected for beneficiaries but instead of completing the brickwork the uncompleted structures were left unoccupied and residents erected informal structures.

❖ *Zenzele - Randfontein*

The township establishment application was turned down because of geo-technical conditions underlying portions of Zenzele. Communal water supply, as well as communal toilet facilities, has been provided in Zenzele thus addressing sanitation and potable water provision difficulties. Zenzele however, does not have electricity supply resulting in the fire risk remaining unacceptably high. Storm water drainage in this dolomite area, is unacceptably ineffective considering the dangers of water ingress in dolomite areas. There are no fire hydrants available at Zenzele demanding the fighting of structure fires with the on-vehicle water capacity, only. The layout of the settlement, however, is such that proper distances between dwellings are maintained and access to all parts of the settlement is possible.

The community of Zenzele responded angrily to a announcement of the MEC for Housing that informal residents of Bekkersdal would be resettled to Middelvlei and Droogeheuvel without making reference to their relocation to the said areas.

❖ *Asgat - Randfontein*

This settlement comprises of +/- 700 mainly plastic and cardboard structures and is located at the municipal dumping site in most appalling of conditions imaginable. Twice now, fires at the informal settlement caused death and major destruction. There are no services available and there is no structure to the settlement resulting in access to be extremely limited. Discussions between this Department and the Rand West Local Municipality regarding the urgent relocation of this settlement have been ongoing for the past almost four years.

❖ *Scrapyard – Mohlakeng, Randfontein*

Some 130 families are currently residing in this informal settlement. There is no structure to the settlement with only one entrance and no services are available. This settlement is extremely vulnerable and in need of urgent resettlement. Similar to Asgat the fire risk is extremely high, and loss of life and mass destruction must be expected.

❖ *Urban-fringe areas – Randfontein*

Various informal settlements on private land in, inter alia, the Elandsvlei, Klein Elandsvlei, Brandvlei and Grasland are currently being investigated by this Department in association with the Rand West Local Municipality. From initial assessments (in the process of being

quantified) it would appear as if most of such settlements are extremely vulnerable. Siyahlala One is a settlement at Brandvlei comprising of some 250 informal structures. These structures are not numbered and there is no control over the settlement thus allowing for its expansion.

Siyahlala Two also located at Brandvlei currently comprise of 60 informal structures, mainly constructed of plastic materials. Both Siyahlala One and Two are prone to flooding and fires.

Jabulani located at Botha Plotte on the Randfontein/Wheatlands road is densely populated and inaccessible to the emergency services. Mostert located at Klein Elandsvlei currently comprise of approximately 550 structures, is densely populated and uncontrolled. Bundu Inn located close to the R28/R559 intersection south of the industrial area Aureus comprise of some 400 structures and expanding.

- *De-densification of Mohlakeng – Randfontein*
  The de-densification of Mohlakeng whereby informal structures are removed from properties in the formal areas in order, to mitigate urban deterioration and associated risks should remain on the development agenda. The lack of the enforcement of building regulations typically results in the densification of developed areas by means of the uncoordinated and unregulated addition of informal structures, the overloading of infrastructure and the increasing of health and fire risks. The densification of developed areas in this manner is a worldwide threat and gives rise to unmanageable levels of urban risk and vulnerability.

- *Orient Hills – Magalies, Mogale City*
  This settlement situated on private land is prone to strong winds and flooding. There are no municipal services available at this settlement and the shortage of water (total absence of fire hydrants), is mitigated only by the distances between dwellings. Currently there are approximately 1500 structures in this settlement.

- *Tudor Shaft –Chamdor, Mogale City*
  This settlement originates from 1994 when some 200 people were evicted from mine buildings at West Rand Cons. At the time the then Krugersdorp TLC established the settlement as a transit area but it has since expanded to approximately 800 structures. The settlement is surrounded by open mine shafts posing a serious threat to community safety.

- *Soul City – Chamdor, Mogale City*
  This settlement comprises of approximately 800 informal structures and constitutes a major fire risk and is the epitome of what urban development patterns should not be.

- *Crossroads – Tarton, Mogale City*
  This settlement on the N14 at Tarlton is a bone of contention whereas its existence is the result of flooding in the area during December 2002. It was initially intended to be a transit area only. There are communal chemical toilets at the settlement and potable water is being trucked to the settlement. The settlement is prone to flooding, high winds and fires. At present there are approximately 185 structures in the settlement.

- *Thabong Village – Vlakdrift, Mogale City*
  This former rural development comprise of 80 structures with no piped water. This settlement was initially established as an Agri-Village.

- *Tarlton Electrical – Tarlton, Mogale City*
  This settlement comprise of approximately 140 informal structures with no access to municipal services.

- *Botshabelo Community Development – Magalies, Mogale City*
  This settlement comprise of approximately 130 informal structures with no access to municipal services.

- *La Grange Brickyard – Tarlton, Mogale City*
  This settlement comprise of approximately 250 structures with no access to municipal services.

- *Wales Brickyard – Tarlton, Mogale City*
  This settlement comprise of approximately 500 informal structures with no access to municipal services.

- *Botha's Quarry – Tarlton, Mogale City*
  This settlement comprises of approximately 150 informal structures with no access to municipal services.

- *Smoketown*
  Located in the proximity of the Petronet Depot it currently comprise of approximately 300 structures with the residents having restricted access to potable water, no proper sanitation and no solid waste removal. Many of the current residents are employed on nearby farms.

- *Pongoville – Munsieville, Mogale City*
  This informal settlement in the north western, corner of Munsieville currently comprise of approximately 2500 informal structures and constitutes a disaster nightmare. It is specifically prone to flooding and fires and enjoys no access to municipal reticulation services. Road access to the settlement is extremely limited.

- *West Rand Cons*
  Developments at West Rand Cons where old mining structures are being used for informal residential purposes, are of extreme concern and legal proceedings have now been instituted against the owners of such buildings Messrs Rand Leases for ignoring legal notices issued in terms of the provisions of the Fire Brigade By-Law.

- *De-densification of Kagiso and Munsieville – Mogale City*
  The de-densification of parts of Kagiso and Munsieville whereby informal structures are removed from properties in the formal areas in order, to mitigate urban deterioration and associated risks should remain on the development agenda. The lack of the enforcement of building regulations typically results in the densification of developed areas by means

of the uncoordinated and unregulated addition of informal structures, the overloading of infrastructure and the increasing of health and fire risks. The densification of developed areas in this manner is a worldwide threat and gives rise to unmanageable levels of risk and vulnerability.

- *Khutsong South – Merafong City*
  Multiple new sinkhole formations occurred. The WRDM Disaster Management team has together with the CoGTA Gauteng Provincial Disaster Management Centre, established a Sink hole steering committee working group which sat twice a month in an effort to coordinate the response and mitigation measures pertaining t these sinkhole. Merafong filed for a Disaster Declaration. The WRDM supported the movement for declaration, however it stopped that the GPDMC as CoGTA was not satisfied with valid enough reasons to proceed with the declaration.

Summary remarks

It is generally accepted that this district, in concurrence with world trends in particularly developing countries, are experiencing urbanization pressure outweighing the resources to effectively cope with service demands. Almost daily the challenge to cope with the development needs grows – resulting in an ever, increasing gap between development demands and the available resource capacity. This occurrence is typical in rapidly manifesting Global City Regions and it is this widening gap that concerns disaster management practitioners whereas it is the breeding ground for increased risks and vulnerability. Failure to institutionally, intentionally, and assertively, shrink the gap between development demands and available resources will in turn result in a higher demand for hospitals, fire services, emergency medical services, policing, etc. Failure to institutionally address development demands invariable results in a higher demand for 'Band-Aid' services aimed at addressing the consequences of inevitable resource capacity failure.

- *Land use management*
  Effective, continuous land use management in our municipal area forms the basis of effective and sustainable development. The only effective manner in which to commence with the containment and eventual shrinkage of the gap between development demands and resources is to diligently and assertively enforce appropriate regulatory land use management. Effective land use management and control however, requires assertive and un-comprising political and functional management, often associated with unpopular measures and mechanisms. Unscrupulous land owners availing land for the purposes of 'people farming' must be dealt with effectively and visibly.

- *Regulatory management*
  In support of land use management municipalities should revive and revitalize its regulatory measures in order to curb urban deterioration in support of sustainable development. The development of and enforcement of applicable by-laws are key elements in this process. Regulatory management, the world over, holds the key to sustainable development – this includes the payment for services rendered.

❖ *Developmental management*

The provision of housing and the development of shopping centres, apart from social and economic benefits, have one thing in common – it creates strain on existing infrastructure. The development of houses at Simunye, for example, results in additional water runoff thus demanding appropriately designed storm water drainage systems applicable to dolomite areas, it generates traffic and demands additional road maintenance, it generates the movement of people and demands additional traffic law enforcement and traffic signals, it generates crime and demands additional policing, etc. Developmental management, from a disaster management perspective, refers to integrated, holistic planning reflecting all infrastructure needs and required resources in order to reduce risks and vulnerability. Low cost housing developments however, have one intrinsic and significant downside namely, the general inability of beneficiaries to financially support the services received.

Infrastructure development and stability

In disaster management terms, reference to the term 'infrastructure', refers to structural and non-structural essential services, whereas -

'structural services' means, amongst others, road infrastructure, electricity and water reticulation, sanitation and water purifications systems, recreation facilities, buildings such as hospitals, clinics, schools, police stations, shops, cemeteries, solid waste disposal sites and storm water drainage systems; and
'non-structural services' means, amongst others, cleansing services, emergency services, law enforcement services, health and social services, environmental management services, etc.

Development of housing projects, commercial & trade centres as well as industrial projects must be associated with both sustainable additional structural and non-structural infrastructure resources.

Situation Synopsis

❖ *Mogale City*

Development in Mogale City during the period 2004 to 2020 outstripped the ability of the municipality to maintain and expand its backbone infrastructure capacity and reticulation systems showed clear symptoms of systems failure should the essential services complaints received in the District Emergency Operations Centre, be taken into account.

Major, upper class developments have been permitted in the northern parts of Mogale City without the timeous provision of additional bulk water holding capacity resulting in regular water shortages and the fire hydrant system providing less than 35% of the legal requirements. Roads in the northern parts of Mogale City are becoming increasingly congested resulting in traffic flow problems and subsequent accidents. Neither the road infrastructure nor the provision of additional law enforcement, or emergency services capacity, has been adjusted accordingly resulting in a steep increase in urban vulnerability patterns.

The Percy Stewart Water Care Works, primarily providing service to the new developments, is experiencing serious structural problems as well as subsequent capacity difficulties.

It has become imperative for Mogale City to invest a) in the maintaining of existing reticulation networks and b) in the provision of additional bulk services networks.

In the southern parts of Mogale City the addition of paved roads to low cost housing areas creates additional water runoff without applicable storm water drainage systems being provided resulting in severe localized seasonal flooding.

Developments in and around Mogale City during the past number of years have seen a significant increase in the mobility of people making use of taxi's, yet, taxi facilities upgrading has commenced, but is long overdue. This process has been ongoing for over 2 years and is still not completed. This situation results in congested facilities in the CBD prone to crime and conflict and results in taxi's increasingly making use of spontaneous taxi stops along main routes and a subsequent increase in the compromising of road safety.

❖ *Randfontein (Rand West Local Municipality)*

All structural infrastructure in Randfontein is in dire need of maintenance. Main roads simply cannot handle the traffic flow and streets turn into torrents during thunderstorms as a result of the inadequate provision of and maintenance of storm water drainage systems. Parts of Randfontein suffer regular electricity failures during thunderstorms as reflected in the data captured in the Emergency Operations Centre. The bulk water storage capacity is far below the minimum required capacity thus increasing the possibility of terminal water supply problems during pipeline interruptions. The road surfaces of arterial streets in Randfontein is rapidly nearing a level of deterioration that would require extremely expensive reconstruction rather than re-sealing or re-surfacing.

❖ *Westonaria (Rand West Local Municipality)*

The rapid development of Simunye, Bekkersdal, and Borwa, and the additional movement of people generated on the R28 and the N12 strains the traffic law enforcement capacity of Westonaria as well as the emergency and police service. Westonaria only has 11 traffic officers responsible for law enforcement.

The main challenge in Westonaria is to manage the Bekkersdal Urban Renewal Program (BURP) in a manner that will see the progressive resettling of the informal areas and the concurrent reduction in vulnerability. The progressive termination of mining activities in the Westonaria region and the associated, expected, re-watering of the dolomite compartments would in all probability result in an increase in the geo-hydrological instability in the already high-risk informal areas of Bekkersdal.

Westonaria also faces major challenges with the maintaining of its ageing wet services infrastructure in view of the dolomite risks. In the foreseeable future the re-watering of the dolomite compartments following the termination of mining activities could also result in the increasing of geo-hydrological instability.

Summary remarks

Local municipalities are currently battling to maintain infrastructure needed to sustain essential services and to support development pressures. The reasons for the difficulty range from financial constraints, lack of technical expertise and lack of staff, to development demands exceeding resources or a combination thereof. The difficulties currently being experienced seriously jeopardizes local economic growth and blunts any competitive edge the West Rand as a district could have over other districts in the Province. Should the cyclic decline not be halted the urban risk & vulnerability profile shall within the next year or two reflect a steep upward incline.

The West Rand is faced with the sharp end of the GCR challenge – namely a steady urbanization patterns and subsequent pressure on resources. This urbanization pressure emanates from both areas outside of the Province as well as the overflow from the urban compartments of Johannesburg. This overflow impact is particularly evident in the northern parts of Mogale City and will soon become more pronounced in the eastern parts of Westonaria. Current urbanization trends becoming more pronounced in the district, is typically that experienced by emerging global city regions throughout the world – but – what makes it extremely difficult for the district, is the lack of expansive economic development and capital generation in the district itself whereas such expansive economic development and capital generation is a prerequisite for sustainable development and the meeting of the urbanization challenge.

2. ECONOMIC STABILITY

In disaster management terms, the term *'economic stability'* refers to the economic development of the district aimed at ensuring a reduction in vulnerability and the establishment of robust communities.

During the period under review no significant economic catalyst developments have taken place in the district whereas such developments would act as catalysts for additional employment opportunities and the generation of additional well-being.

Although an analysis of building plan applications submitted to the Fire Risk Management Unit reflects improved growth in the industrial and commercial sectors it is not expansive to the extent of turning communities into self-sustaining robust communities. The sustained increase in townhouse and cluster developments, in particularly the northern parts of Mogale City as well as in Randfontein continued to strain infrastructure without significantly improving the financial position of municipalities, and, although building activity in itself, generates employment opportunities, developments focused on production and manufacturing remains limited and although the development of high-density upper-middleclass housing developments will favourably impact on the retail market, the well-being impact will largely remain restricted with limited positive impact on poverty stricken communities.

The West Rand District is in dire need of large-scale and expansive, economic catalyst investment in order to stimulate and sustain employment and community well-being. Such catalyst investment could be in the production and manufacturing sector, agriculture or tourism. As a district, however, we did not achieve any significant economic growth in these sectors, which could counter the progressive declining economic impact of the mining sector.

Summary remarks

From a sustainable livelihood perspective the lack of expansive economic catalyst investment in the district in order to accelerate the diversification and broadening of the economic base in the district does not imply any motion towards community well-being. The task to ensure macro economic development in the district has now been entrusted to the West Rand Development Agency.

During the period under review the Global City Region (GCR) initiative of the Gauteng Provincial Government gained momentum. The current and future contextual significance of the West Rand in the GCR remains questionable whereas the West Rand, without significant value to add to the GCR, could be regarded by other major stakeholders in the Province as a liability. It is important for the West Rand to define and assert its competitive value in the GCR and to aggressively and actively extend such value in the face of the metropolitan competition.

3. SOCIAL STABILITY

The Disaster Management Act, 2002 refers to the ability of *'households and individuals'* to withstand the consequences of disasters. In this respect the *'well-being'* of the social fibre of society is under scrutiny. Social pathologies such as alcohol and drug abuse, women & child abuse, life style diseases such as HIV/Aids and sexually transmittable diseases (STD's) as well as chronic health conditions associated with malnourishment, and cramped living conditions occur in societies under pressure such as the vast informal settlements in the district. Poverty forms the ideal breeding ground for the progressive erosion of the social fibre that bonds societies and families together whereas such eroded communities in the longer term constitutes an unbearable burden to organs of state.

Using United Nations parameters the West Rand District cannot at present be regarded as being socially stable whereas the levels of poverty and associated existential despair are too endemic to the district. Studies conducted in other developing countries clearly indicate the relationship between social pathologies in poor communities and the need for existential escapism. In essence this simply means that without employment and economic well-being social pathologies shall continue to erode the social fibre of society resulting in an increasing burden on organs of state – including municipalities, until the burden becomes intolerable and results in institutional collapse. The societal climate in the district is at present unfortunately conducive to anti-social behaviour, crime and community discontent.

The occurrence of community discontent is often attributed to political dynamics but international experience in this regard clearly reflects that it is the condition of despair or hopelessness that ultimately erupts into violent protests and manifests itself in socio-political instability. The UN in this regard cautions that the warning signals relating to socio-political instability must be read in the social-economic hardships to which communities are being subjected to as well as its tolerance capacity. The legacy of previous violent actions during the struggle against the apartheid system is increasingly becoming the fall-back position of communities suffering of popular discontent.

This Department is of the opinion that it is justifiable to state that the West Rand District is in crisis and that it could expect to experience increasing levels of socio-political instability.

A further destabilizing factor that must be specifically mentioned is the public perception that crime is out of control. This key aspect of risk & vulnerability, however, is addressed in the District Safety Plan.

4. INSTITUTIONAL STABILITY

Institutional stability refers to the ability of organs of state to respond to challenges in the process of creating and sustaining community *'well-being'*. This ability is heavily dependent on -

- ❖ the availability of committed skills and technical expertise;
- ❖ financial sustainability;
- ❖ visible and quantifiable service delivery;
- ❖ cooperative government; and
- ❖ leadership stability

Using recent year Auditor General reports as barometer, it is doubtful if the municipalities in the district could be regarded as progressively financially stable. It would appear as if there is a severe shortage of technical skills and expertise amongst the municipalities to steer effective sustainable service delivery, resulting in essential services fatigue, failure and malfunctioning. There seems to be a critical need for doing the basic things right the first time and to restore service discipline and ethics. The question could be asked if it is not prudent for municipalities in the district to share scarce skills and knowledge in an integrated and consolidated manner. The investigation of enhanced cooperative governance in the district with the view to share technical expertise whilst also seeking to contain, personnel expenditure should best be undertaken.

A sustained inability of municipalities to perform its service rendering obligations could further serve to fuel socio-political instability and violent reactions as was recently experienced in parts of the Country.

5. ENVIRONMENTAL STABILITY

Vulnerability levels are generally low when unexpected changes in the environment could easily be accommodated or tolerated whilst maintaining levels of community well-being. The occasional oil spill dealt with by the emergency services does not have an impact on the general well-being of a community. At present however, the district is faced with significant environmental factors directly impacting on the well-being of communities.

- ❖ Termination of mining activities

  For the past almost three years, the progressive terminating of deep-shaft mining in the district has had a profound impact on the environment. In November 2004, DWAF established a technical committee focused at finding a sustainable solution to (a) the curbing the pollution and (b) finding an acceptable solution to the discharging of approximately 9 – 11 megalitres of water per day emanating from the Western Mining Void at Millsite.

  The problem with the decanting of polluted water is primarily contributable to the termination of mining activities and the subsequent terminating of the extraction of water from the water-rich mining void in order to prevent such active mining void from being flooded. As much as mining areas has to be de-watered during the active life cycle of any mine in order to secure productive mining of ore containing reef, the void created during the active life cycle of the mine will be re-watered upon closure of such mine

unless pumping operations are continued with – an operation that would continue to cost the mining company millions.

Should the re-watering of a mining void be permitted to take place following the terminating of active mining activity and such water be permitted to decant into natural streams and river systems it must be taken into account that the decanting water would be polluted as a result of substances used in the active mining area and left behind in the void after termination of such mining area.

- The Western Basin Void – decanting of polluted water

The Western Basin is situated roughly between Kagiso in the east and Millsite in the west and has seen extensive mining in the past. Currently three mining companies namely Harmony Gold, Durban Roodepoort Deep (DRD) and Mogale Gold are involved in surface and sub-surface mining or recycling activities affecting the Western Basin. It is in particular water decanting from Harmony Gold mining activities in the Millsite area causing significant surface and sub-surface water pollution evident in the Krugersdorp Game Reserve and lower down in the Blaauwbank Spruit.

The surface draining around the Western Basin, situated on the north-south water divide, is generally in a northerly direction into the Crocodile River water system and ultimately discharging into the Indian Ocean.

There are mainly three river systems being directly or indirectly affected by the mining activities in and around the Western Basin. The Tweelopies Spruit-east, running from the Robison Lake in a northerly direction, through the Millsite area, through the Krugersdorp Game Reserve and into the Blaauwbank Spruit. The recycled water of the Percy Stewart Purification Works of the Mogale City Local Municipality also feeds into the Blaauwbank Spruit. The Blaauwbank Spruit in turn runs through the Cradle of Human Kind into the Crocodile River.

The second river system in question is the Tweelopies Spruit-west running from the Robinson Lake past the Randfontein Purification Works into the Riet Spruit from where the Riet Spruit feeds into the Steenkoppies Water Compartment, surfaces at Maloney's Eye and into the Magalies River feeding into the Crocodile River.

The third river system in question is the Wonderfontein Spruit running past Kagiso and being fed by the Flip Human Purification Works of the Mogale City Local Municipality, runs past Toekomsrus and into the Donaldson Dam from where the water is piped across dolomitic land at Venterspost and further unto Bank ultimately discharging into the Mooi River. The pipe feeding water across the dolomitic area between Westonaria and Venterspost is the property of Gold Fields SA.

Harmony Gold allowed polluted water to discharge from its Millsite operations situated in the Western Basis into the Tweelopies Spruit-east causing the pollution in the Krugersdorp Game Reserve and further down the Blaauwbank Spruit. DWAF during March 2005 requested the Department Public Safety to issue a toxic caution to all residents neighbouring the Tweelopies Spruit-east and such caution has to date not been lifted.

In order for Harmony Gold to retain its discharging permit (allowing the company to discharge water generated by its operations into surface and sub-surface water systems) the Company, by demand of DWAF, had to establish a purification plant and wetlands at its Millsite operations. This operation would enable Harmony Gold to treat water to the same water quality standards prevalent in the various water systems i.e. no pollutants not normally found in the water may be added to any water system. During 2006 the Department requested DWAF to terminate the permission granted to Harmony Gold to discharge any water into the Tweelopies Spuit-east as a result of the ineffectiveness of the purification plant and the subsequent sustained toxic quality of the water.

The technical committee concerns itself with a number of discharging (or decanting) options.

Option 1
Discharging treated water from the treatment plant at Millsite directly into Tweelopies Spruit-east allowing the treated water to form part of the Blaauwbank and Crocodile systems. This option could have a negative impact on the WHS whereas the water table in the cave systems of Sterkfontein could see a detrimental rise in time.

Option 2
Piping treated water across the divide into the Wonderfontein system and allowing the water to progress to the Donaldson Dam and further on via the Goldfields pipe system to the Mooi River.

Option 3
A combination of Options 1 and 2 with 90% of the treated water being piped to the Wonderfontein system and 10% being allowed to naturally flow down Tweelopies Spruit-east and ultimately into the Crocodile system.

Option 4
Piping the treated water into Tweelopies Spruit-west allowing it to flow into the Riet Spruit system, the Steenkopppies compartment and ultimately out Maloney's Eye and into the Magalies River.

- Interim Measures

  As an interim measure, until clarity with regard to the longer-term proposals had been collectively secured, DWAF permitted Harmony Gold to commence with the discharging of treated water into the Wonderfontein system whereas at this time the pollution of, in particular Tweelopies Spruit-east would be terminated. DWAF further undertook to involve the local municipalities of Rand West and Merafong City with regard to the impact of the interim measures.

- Evaluation of options

  Harmony Gold undertook to provide guarantees and assured contingency planning aimed at mitigating any negative impact on the WHS. The Department Public Safety rejected such undertakings on the basis of previous experience with ISCOR and the failure of the latter to sustain its guarantees and undertakings and its failure to sustain quality and quantum requirements. The Department also reflected on the failure of DWAF at the

time to compel ISCOR to comply with its discharge conditions. Fact of the matter is that, should anything go wrong with either the treatment process or the regulating of the quantum of water it could have a devastating impact on the WHS. DWAF expressed the opinion that an Environmental Impact Assessment (EIA) best be conducted in order to investigate the possible impact on the WHS. The Department Public Safety alluded to the fact that the possibility of the flooding of the Sterkfontein cave system was already stated as a factual possibility thus negating the implementation of Option 1.

Option 2 would arguably have least detrimental environmental impact but the implementation of this option would imply 9 – 11 megalitres of water per day simply being channeled into the Mooi River system flowing away from the district. Arguably this option could be viewed as a gross wastage of a potential resource, which could be used to enhance economic activity and job creation.

Option 3 combining the proposals contained in Options 1 & 2 speaks for itself.

Option 4 would require the construction of a pipeline from the treatment plant at Millsite feeding into Tweelopies Spruit-west. The cost of such a pipeline would have to be quantified as well as which party or parties would be accountable for the expenditure. The benefit of Option 4 could be found in the LED potential embedded in the water whereas this resource could be used to enhance agricultural and tourism activity in an area (Tarlton, Magalies & Hekpoort) where the existing surface and sub-surface water sources are rapidly becoming depleted.

❖ Situation assessment

Background

Media reports have been making heavy weather of the pollution of the Wonderfontein Spruit system – and then in particular the alleged high levels of radio activity in the system. One newspaper report reflected photographs of Bekkersdal residents being cautioned by a NGO about the high levels of radio activity in the Donaldson Dam whilst a TV program focused on problems on farm land to the west of Khutsong.

The Wonderfontein Spruit originates just north-west of Kagiso, passes between Azaadville and Kagiso and Lusaka 1,2 and 3 where the Flip Human Water Care Works feeds into it. From here the Spruit flows in a southerly direction to the east of Toekomsrus and Mohlakeng where the Harmony Water Care Works also feeds into it. The Spruit continues in a southerly direction to the east of Zenzele and into the Donaldson Dam. To the west of the Dam the water is piped all the way across the dolomite compartment of Gourdryk and Bank to Rooipoort to the north of Carletonville from where is flows on-surface to the Khutsong Dam and further south-west wards as the upper part of the Mooi River system.

The Wonderfontein Spuit largely receives its water from the Western Mining Void from which Void water is piped into the upper part of the Spruit. The treated water from the Flip Human Water Care Works as well as the Harmony Water Care Works ensures a steady flow of water down stream.

Pollution status

❖ Where does the pollution come from?

There can be no argument that we indeed have a serious pollution problem in all major river systems in this district as also indicated over time by this department. The main polluters of these surface and sub-surface water systems are mining companies and municipalities, and to a lesser extent, industries. Recently DWAF, in writing cautioned the Mogale City Local Municipality that the water being discharged from its Flip Human Water Care Works does not comply to specifications and in the recent past water tests conducted down-stream from municipal water care works, in most cases, indicated the discharging of *'raw sewerage'* into river systems.

Water pollution in the Wonderfontein Spruit primarily originates from mining activities by Mogale Gold, Harmony Gold and the Flip Human Water Care Works. Water decanting from the Western Void in the Millsite area is being piped into the Wonderfontein Spruit whilst polluted water up-stream originates from the Lancaster Dam (also referred to as the Tudor Dam). The polluted water flows through extensive wetlands before reaching the Donaldson Dam.

❖ Analysis conducted

Extensive water sampling and chemical and biological analysis of the samples were conducted at the Donaldson Dam (inlet, middle-dam and outlet) following reported fish deaths in the Dam. The findings of such analysis indicated the following –

According to SANS specifications for drinking water –

- No health effects could be expected relating to chemical contaminants (including heavy metals).
- The manganese levels in the Dam would most likely result in the water being aesthetically unacceptable to a large proportion of users as a result of staining problems.
- Biologically the water quality was classified as of poor quality and posing a material risk of infectious disease transmission as a result of the high levels of E coli and faecal coliforms originating from a) the Flip Human Water Care Works in Mogale City and b) the storm water drainage system of the neighbouring informal settlement of Bekkersdal.

According to SANS specifications for recreational use –

- The color of all samples did not comply for intermediate contact purposes.
- The presence of faecal coliforms in all samples does not comply for intermediate contact purposes.
- The presence of faecal streptococci does not comply for intermediate contact purposes.

In addition to the chemical and biological analysis of the water in the Donaldson Dam, Messrs Water Group was also commissioned to conduct an analysis of radioactive material and base elements at the influx to the Dam, the dam sides and the outfall of the Dam. The objective of the exercise was to –

- Measure and report on the naturally occurring radioactive components in the sediment of the Dam; and
- To establish and calculate the dose coefficient for exposure to sediment contaminated with natural occurring radioactive materials by assuming worst case scenario exposures.

The analysis conducted reflected the following –

Although relatively high values of uranium were observed the potential radiological impact on the public seemed limited upon evaluation of the pathways and assumed intake rates. The following worse case exposure scenarios were considered –

- *External radiation*
  The potential exposure is well below the accepted norm.

- *Respiration of dust*
  The potential exposure to dust emanating from dried sediments on the embankments of the Dam, is well below the accepted norm.

- *Ingestion of sediment*
  From the results it is clear that babies less than one year old will be the most affected group receiving around 55 µSv per year at most, which again is well below the accepted public exposure norm.

- *Overall radiological exposure*
  Considering all three scenarios together it is not expected that the radiological exposure would exceed 100 – 150 µSv per year, which again is well below the accepted public exposure norm.

Arsenic was detected as the only toxic element in the sediments but the impact thereof on public health, considering assumed intake rates and pathways evaluated, seemed to be of little if any concern.

❖ Analysis interpretation

The Department Public Safety evaluated the analysis conducted and the scenario evaluations used from a risk mitigation point of view i.e. to what extent would the pollutants pose an immediate threat to public safety and health. From this perspective it was clear that there was no immediate or direct threat to be addressed.

❖ Analysis implications

Although the analysis conducted indicated no immediate or direct threat to the residents in close proximity to the Dam, it raises alarm bells relating to the medium to longer term systemic integrity of the water source and the Wonderfontein Spruit in general.

Unconfirmed indications are that the absorption capacity of the wetlands between the Donaldson Dam and the up-stream origin of the Spruit is rapidly reaching saturation point – meaning that, the capacity of the wetlands to absorb contaminants is almost exhausted and will in time result in such contaminants simply being discharged into the river system

resulting in major down-stream pollution. The continuation of mining and institutional polluting of the water is rapidly nullifying the critical buffer function being performed by the wetlands. Question is, how long will it take for the wetlands capacity to buffer the contaminants from polluting the river system, the Donaldson Dam and further down-stream?

- Public Safety risk prediction

For some time now, this Department has been expressing regular concerns about the progressive deterioration of a) surface and sub-surface water quality and b) water quantity.

- Deteriorating water quality

Over the past couple of years regular reports have been received of mining and institutional pollution of the Crocodile River system, the Tweelopies Spruit and Blaauwbank Spruit systems, the Riet Spruit system, the Wonderfontein Spruit system and the Magalies River system. At no point during this period did the situation improve and regular pollution continues. This department had to issue a toxic caution to residents on the banks of the Tweelopies Spruit and the Blaauwbank Spruit as a result of polluted decanting water from the Western Mining Void flowing into the river systems and at the time DWAF was requested to prohibit Harmony from releasing any further water from the Western Void into the Tweelopies Spruit.

In view of a) the rapidly declining of deep-shaft mining activities in the northern and central parts of the district and the resultant termination of the pumping of water from mining voids it must be expected that seriously polluted water from these mining voids will progressively find its way into surface and sub-surface water sources, and b) the pressure being applied on municipal water purification capacity by rapid development in the Rand West and Mogale City areas, will progressively result in the inability of municipalities to meet water discharge standards and thus the pollution of surface and sub-surface water sources – unless the water purification capacity of municipalities are dramatically improved.

This Department is firmly of opinion that if drastic measures are not collectively implemented, environmental pollution on the West Rand will become a major factor impeding development and longer term growth – in fact pollution might reach irreversible levels posing serious longer term health threats to residents.

- Declining water quantity

The increasing of intensive farming in the Tarlton area and the resultant use of irrigation systems has resulted in a significant lowering of the water table in the Steenkoppies water compartment further resulting in the Maloney's Eye (origin of the Magalies River) to stop natural measurable decanting for the first time in human memory. Bore holes drying up in the Randfontein rural area has become common of late and similar complaints are regularly received from the Tarlton area.

This Department is firmly of opinion that if drastic measures are not collectively implemented, the longer term availability of sub-surface water could be seriously compromised having an extremely negative impact on agricultural development in the district.

❖ Risk summary

The Department Public Safety maintains that –

- Serious pollution of surface and sub-surface sources is indisputable.
- The progressive knock-on impact of the pollution is rapidly reaching a point of no return
- Mining companies and municipalities are the main polluters
- There is a serious lack of remedial or corrective law enforcement in the district with the view to curb and/or mitigate ongoing pollution
- Both DWAF and DME is arguably guilty of dereliction of duty
- Drastic, focused and assertive measures are required in order to halt the serious levels of environmental pollution currently being experienced in the district.

❖ Problem statement

Essentially the problem is not who or what constitutes the pollution but rather who should be acting to a) prevent such pollution and b) to contain or mitigate the consequences of pollution. The finding of an answer to this question, lies hidden in the answers to the following subsequent questions -

- What is DWAF & DME doing?
- Who is the Water Services Authority?
- Who is responsible for environmental health?
- What should the WRDM be doing and in terms of what mandate?

○ The role of DWAF & DME

Earlier in this report the statement is made that both DWAF and DME is arguably guilty of dereliction of duty relating to the current levels of pollution.

DWAF is responsible for the issuing of permits to mining houses and industry to release on-site process water into surface and sub-surface water systems. Mining houses thus discharging polluted water into surface river systems should be dealt with by DWAF.

During the middle 1990's communities neighbouring Iscor in the Vaal Triangle confronted the then Western Gauteng Services Council with the serious levels of pollution caused by industries, and mainly Iscor, in the area. It was established by this department that Iscor was responsible for the pollution of the area by means of polluted water discharged from its works and tailing dams, into river systems. The Minister of Water Affairs and Forestry at the time, Prof Asmal, was confronted with the question why DWAF was not performing its obligations in monitoring the quality and quantity of water being discharged into the river systems. For decades

DWAF permitted the steel giant to discharged seriously polluted water into the area.

The same arguments used at the time in handling the Iscor debacle, which ultimately lead to the compensation of pollution victims by the latter, could now be used – what is the role of DWAF and why is it not performing its duties?

DWAF now, arguably attempts to shift is own inability or incapacity to control pollution of the river systems by enquiring about the program of the WRDM to supply potable water to those people residing in proximity to the polluted river systems.

The second issue of concern is the performance of DME in dealing with the rehabilitation responsibilities of mining companies.

- Who is the water services authority in this district?

  Local municipalities have been assigned the section 84 (of the Structures Act, 1998) responsibility of the provision of water and hence in terms of the Water Services Act, 1997 local municipalities should ensure the provision of potable water to its constituent communities. The WRDM is the water services authority in the DMA but not in the remaining area of the district. DWAF should thus arguably direct its enquiry to the relevant and affected local municipalities but in view of the fact that the Wonderfontein Spruit runs through all three local municipalities and one municipality in particular is a polluter of the system, DWAF might find it difficult to secure appropriate responses from the local municipalities.

- Who is responsible for environmental health?

  Local municipalities have been assigned the section 84 (of the Structures Act, 1998) responsibility of environmental health. The WRDM only has the *de jure* responsibility for the DMA – but, the WRDM is the municipal organ of state primarily burdened with the disaster management obligation and it could thus be argued that this problem is of a nature and extent that could not be handled through ordinary processes of government but needs intervention and therefore the WRDM has a distinct role to play.

- What should the WRDM be doing and in terms of what mandate?

  As indicated above, the WRDM could arguably be held accountable for intervention in terms of the provisions of the Disaster Management Act, 2002 whereas such intervention could refer to diligently coordinating all public and private efforts to mitigate the impact of the prolonged environmental pollution threatening the health and safety of communities. It could well be that this argument also forms the basis of the approach of DWAF.

  The Provincial Department of Local Government, through the Provincial Disaster Management Centre also enquired as to what assertive steps the WRDM is taking in addressing the persistent pollution problems.

In response to the persistent pollution problems the WRDM established an Environmental and Integrated Waste Management Forum with the view to coordinate all related activities in the district. It is however, the view of the Department Public Safety that assertive steps in terms of the provisions of the Disaster Management Act, 2002, should be taken by the WRDM.

Re-watering of Gemsbokfontein and Venterspost water compartments

During the late 1950's and 1960's the de-watering of the Gemsbokfontein and Venterspost water compartments as a result of active deep-shaft mining activity in Westonaria resulted in dangerous levels of geo-technical instability and specific dolomite risk management programs had to be introduced in order to safeguard public safety in Westonaria and Venterspost. As a direct result of the policies of the then government similar high risk conditions were only confirmed in Bekkersdal during the early 1990's following the intervention of the then West Rand Regional Services Council and the initiating of geo-hydrological investigations in the area. The de-watering of the dolomite by mining activities caused high levels of sinkhole risks.

Now, the West Rand is arguably facing a new threat in the form of the re-watering of the de-watered dolomite following the progressive terminating of mining activities in the Westonaria and Merafong City areas. The re-watering of dolomite following the terminating of the sub-surface extraction of water from mining voids and the permitting of the water tables to be restored to pre-1960 levels, could result in similar geo-technical instability last experienced in the 1960's.

The Gauteng Provincial Government has been requested by the Department Public Safety to assist with drafting of an impact study relating to the re-watering of dolomite mining areas in Gauteng. It is imperative that future developments in the dolomite areas of Mogale, Rand West, and Merafong should take due cognizance of the dangers implicit to the terminating of mining activities and the subsequent re-watering of the mining voids.

Steenkoppies water compartment – exhausting of sub-surface water

An additional 7 central pivot irrigation systems have been erected in the Tarlton area and all indications are that the sub-surface Steenkoppies water compartment is rapidly being exhausted by the additional irrigation systems. Maloney's Eye, feeding into the Magalies River is now only a trickle. The drought as well as the over exploitation of the sub-surface water sources are now rapidly taking its toll.

The Department of Water Affairs and Forestry has been engaged in an attempt to mitigate the over-exploitation of the sub-surface water sources whereas such over-exploitation could in the longer-term have a devastating impact on agricultural activities in the area.

Air pollution caused by recycling of mine dumps

It has been reported in the past that the medical fraternity complained that Mogale City has one of the highest sinus indexes in the world and that they are of the opinion that it is essentially caused by the dust blowing form the recycled mine dumps in the Krugersdorp and Randfontein areas.

The Department Public Safety engaged the Department of Minerals and Energy with the view to mitigate the pollution particularly during the dry and windy winter season when the dust has a negative impact on the well-being of particularly the residents of Kagiso and Central Krugersdorp as well as the northern parts of Randfontein.

Runaway veld fires

The process of establishing Fire Protection Associations (FPA's) in all rural areas in accordance with the provisions of the National Veld & Forest Fire Act, 1998 has progressed despite administrative problems experienced with DWAF. Fire-season planning has commenced in order to ensure the provision of adequate firebreaks throughout the district. The WRDM received a national award for its endeavours relating to the establishment of FPA's and the mitigating of wildland fires.

Dolomite risk management

The Minister for Public Works made a presentation to the Administration and Governance Cluster of Ministers relating to the protecting of state and private property against the risks posed by development dolomite areas. The Minister expressed clear direction with regard to the protection of government and private property and development against the threats posed by development in dolomite areas. It was further emphasized that dolomite risk management strategies should form part of disaster management plans in concurrence with the provisions of the Disaster Management Act, 2002, focusing on an integrated approach and multi-sectoral planning amongst different stakeholders.

Shortly after the presentation of the Minister for Public Works, Cabinet tasked the Department of Public Works to develop a national dolomite risk management framework in close consultation with all public and private sector stakeholders. The first framework document relevant to all development in dolomite areas was published in 2004 with the second, refined version published in 2005. The task team, under the technical leadership of Messrs VGI consult contracted by the Department, further enhanced the development framework with the view to have the requirements published as mandatory national standards.

- ### The challenge – establishment of mandatory national standards

  It is expected that the SANS 1936 document, containing mandatory development requirements relating to dolomite areas, was published during 2007. Part 4 of the SANS 1936 deals extensively with dolomite risk management and clearly outlines the requirements to be placed on municipalities with respect to the management of dolomite risks. Failure to timeously comply with the requirements will delay approval of all new development and investment in dolomite areas. In anticipation of SANS 1936 and in concurrence with the existing national guidelines published in 2005 the NHBRC already commenced with the imposing of requirements on prospective developers.

  It is common knowledge that the West Rand is one area particularly troubled by dolomite risks and it is inconceivable that development in the district would be possible following the publishing of SANS 1936 without an official dolomite risk management strategy being in place.

  Research shows that 96% of sinkholes are man-induced generated by ingress of water from leaking water bearing infrastructure, poor surface water management or due to the

uncontrolled lowering of the sub-surface water table. A dolomite risk management strategy encompasses putting in place policies and procedures to reduce the likelihood of sinkholes and dolines occurring in dolomite areas. These procedures and policies, to be implemented by all municipalities, would govern all facets of development on dolomite including planning, design and installation of water bearing infrastructure, maintenance requirements relating to such infrastructure as well as the enforcement of any other special precautions, restrictions and provisions deemed necessary in the geological setting.

❖ Implementation of a dolomite risk management strategy

Large amounts of geotechnical data relating to the West Rand are already available whereas such data should be assimilated and processed to create the basis of a dolomite risk management strategy. The implementation should best be as follows –

1. Gather accessible & available data, including –
   - Geological information
   - Geohydrological data
   - Geophysical data
     - Aeromagnetic surveys
     - Gravity surveys
   - Borehole data
   - Sinkhole and doline information
   - Infrastructure, buildings, roads, etc
   - Cadastral information

2. Create a rudimentary regional database system that stores all relevant geotechnical and infrastructural data. This system can be manipulated in an interactive manner providing data that significantly underpins all operational and management decisions with municipalities within the district.

   Relevant data gathered during the establishment of the dolomite risk management strategy would then be analysed and documented in terms of 10 primary information layers. The 10 information layers would then be superimposed on the basic GIS platform. The 10 layers are as follows –

   Layer 1 Primary infrastructure throughout the district
   Layer 2 Geology of the district
   Layer 3 Topocadastral information of the district
   Layer 4 Geophysical data relating to the district, including gravity, aeromagnetics, etc
   Layer 5 Geohydrology, including delineation of known sub-surface water compartments
   Layer 6 The borehole and piezometer distribution
   Layer 7 Ground subsidence layer – sinkhole and doline records
   Layer 8 Provisional risk characterization of available data
   Layer 9 Primary Monitoring areas and monitoring wells
   Layer 10 Appropriate land allocations in relation to risk to guide future development planning and future infrastructure planning.

3. Undertaking of a vigorous education and awareness campaign within municipalities in the district

4. Development of emergency response plan

5. Investigation of serviceability of all wet services in dolomite areas

6. Formulation of guideline policies for the appropriate development of infrastructure on dolomite in the district.

It must be emphasized at this point that the dolomite risk management strategy will be an all inclusive and collective strategy encompassing all municipalities in the district with one single database accessible to each municipality for planning purposes. Clear role definitions will be provided for in the strategy with the view to empower each municipality to enforce the provisions contained in the strategy in its area of jurisdiction.

❖ Development of the dolomite risk management strategy

It is recommended that specifications be compiled and tenders be called for with the view to ensure the development and roll out of a district-wide dolomite risk management strategy.

❖ Budget and time scales

Based on the experience with the development of the national dolomite risk management the strategy could best be developed in two phases, namely –

Phase 1 12 months to establish the system and collate the data on the database. Budget expenditure approximately R880, 000

Phase 2 Implementation phase. A consecutive 12 months to facilitate the functioning of the system and to audit its application by municipalities in the district. Budget expenditure approximately R560, 000

Importance of Council resolution to commence with the strategy

At present the following proposed developments in dolomite areas in the Rand West municipal area of jurisdiction have been halted by the NHBRC pending commencement with the dolomite risk management strategy –

- Portion 163, Elandsvlei – Harmonie Retirement Village – 13.6 Hectares.
- Portion 182 Elandsvlei – Land sold to M5 Developments for the development similar to Cosmo City – 35 Hectares
- Portion 107 Elandsvlei – 15 Hectares for similar development as on Portion 182
- Portion 66/247 Randfontein – M5 Developments currently investigating development similar to Cosmo City – 21 Hectares
- Harmony Gold Mine Land – 35 Hectares 1km south of Portion 66/247 Randfontein for the relocation of the informal settlement at the Randfontein Dumping Site. This project will be financed by the Anglican Church of South Africa and US Government.

- Rand West Local Municipality already indicated approval of the abovementioned developments but such cannot continue pending progress with the implementation of the dolomite risk management strategy.

Summary

The development of a dolomite risk management strategy is a complex technical process requiring expert geo-hydrological and geo-physical knowledge and data linked to the availability of an extensive GIS system. Implementation of the strategy will largely depend on the diligent manner in which municipalities will apply the information availed in the strategy in the form of policies and procedures.

In the dolomite areas of Mogale City, Rand West, and Merafong it is imperative that dolomite risk management strategies and plans are diligently being executed. By and large sinkhole formation in these areas are caused by leaking wet services (water and sewerage networks) and subsequent water ingress into the dolomites. It is known that large portions of Westonaria and Merafong City is underlain by dolomite whereas parts of southern Randfontein, including Zenzele is located on dolomite. In Mogale City prospective development areas to the north-west of Krugersdorp is underlain by dolomite.

PART E REMEDIAL RECOMMENDATIONS

RECOMMENDED THAT:

1. An infrastructure audit be conducted in the district in order to determine and quantify –
   - infrastructure backlogs;
   - infrastructure maintenance backlogs;
   - levels of current infrastructure capabilities in meeting existing service demands;
   - envisaged short, medium and longer-term infrastructure needs; and
   - to determine and quantify urgent infrastructure upgrading and maintenance priorities

2. It be considered to establish a development assessment committee/structure comprising of the Portfolio Heads of Housing, Infrastructure and Public Safety of the local municipalities and the WRDM to assess development applications prior to such applications being submitted to local municipalities or the Development Tribunal for consideration whereas such committee would focus on -
   - setting equitable development standards for the district;
   - ensure adequate support capacity;
   - establish appropriate regulatory measures; and
   - ensure integrated and coordinated development.

3. Urgent attention be given to the establishment and/or enforcement of regulatory frameworks focused on effective and assertive land use management whereas such overseeing could be executed by the proposed development assessment committee/structure.

4. The Department Public Safety be tasked, in accordance with the provisions of section 47 of the Disaster Management Act, 2002, to engage all stakeholders with the view to draft and implement an assertive anti-pollution program.

5. The development of a district-wide Dolomite Risk Management Strategy be expedited with the view to ensure sustainable development in the district.

6. Measures be considered to ensure the availability and cooperative, productive utilization of technical expertise such civil and electrical engineering capacity to steer the sustainable and affordable maintaining and development of service infrastructure in the district as a whole.

PART F MASS GATHERINGS / MAJOR EVENTS

RISK IMPLICATIONS FOR MAJOR/MASS GATHERINGS ON THE WEST RAND

The district will have to cope with the following predictable risks associated with the event -

- Structural and wild land fires (fire season);
- Increased traffic volumes;
- Increased occurrence of road accidents;
- Increased occurrences of drunken driving;
- Increased pressure of medical facilities to cope with trauma incidents;
- Hazardous material incidents;
- Mass casualty incidents as a result of the expected increased taxi and bus traffic;
- Assaults particularly in and around commuter facilities and shopping malls;
- Anti-social conduct caused by drug and alcohol abuse;
- Drug dealing particularly in and around commuter facilities, shopping malls and hospitality facilities;
- Increased incidents of robberies including hi-jackings;
- Increased levels of prostitution;
- Unruly crowd behaviour; and
- Essential services failures.

PREPAREDNESS ANALYSIS

- Emergency Services

  The emergency services will be responsible to respond to all emergency calls in the district and it is expected that a significant increase in calls will be experienced during mass gatherings. In particular vehicle and pedestrian accidents could significantly increase with a distinct possibility that mass casualty incidents could also increase.

  The emergency services in the district is at present not geared to render a world class service during this period mainly as a result of –

  - Outdated rescue & extrication equipment
  - Vehicle constraints – in particular fire & rescue vehicles
  - Manpower & proficiency constraints

- Emergency Communication

  The emergency communication capacity in the district is currently being attended to. The two-way radio integration system at the EOC will be enhanced during the 2022/23 financial year whilst the voice logging and PABX systems are in place. The following challenges will have to be addressed as well –

  - upgrading of all radio communication systems in the district;
  - upgrading of the facilities at the EOC in order to provide for a Joint operations Centre;
  - purchasing of adequate portable two-way radio's for all key stakeholders; and
  - upgrading of software systems

- Joint Operational Command

The EOC will again as always service as Joint Operations Centre from where all stakeholders will monitor and coordinate service delivery in the district. The JOC will be directly linked to the CoGTA Provincial JOC who in turn will coordinate events and resources province-wide.

At the time of mass gathering and major events the EOC would be geared to sustain emergency communication both internally within the district and with external stakeholders.

- Specialize Rescue Task Team

The WRDM has a specialized task team that could be deployed in the district and also in the Gauteng Province for the following rescue missions –

- Confined Space Rescue
- High Angle Rescue
- Vehicle Rescue
- Trench Rescue
- Structural Collapse
- Wilderness Search and Rescue
- Swift Water Rescue

A budget will have to be submitted regarding the availing of vehicles and equipment for this team.

- Volunteers

The WRDM has a Volunteer Unit with trained volunteers in various disciplines. Additional volunteers will, however, have to be recruited and trained in specific categories to assist with line functions as well as the performance of additional support functions such as interpreters.

- Hospitals

The following hospitals are situated in the WRDM area of jurisdiction -

- Robinson Private Hospital - Randfontein
- Sir Albert Hospital - Randfontein
- Netcare Krugersdorp Hospital – Mogale City
- Netcare Pinehaven – Mogale City
- Bell Street Hospital – Mogale City
- Leratong Hospital – Mogale City
- Jusuf Dadoo Hospital – Mogale City
- Fountain Hospital – Merafong
- Carletonville Hospital - Merafong

Factors such as international medical aid accreditation and travelling insurance will be clarified in advance with the view to ensure the provision of proper medical care to tourists.

- Law enforcement

  Police deployment will be concentrated at establishments and precincts where visitors will be staying, travelling routes and mass gathering areas. The role of traffic services in visible policing and law enforcement in support of the SAPS will be of key importance whilst strategic coordination of actions between the law enforcement agencies and private security companies will be of pivotal importance. It must be expected that robbers and sex workers as well as drug dealers will follow tourism patterns. It is further also imperative that all relevant by-laws must at the time be reviewed and approved with the view to ensure maximum effective law enforcement within communities.

- Essential Services

  Municipalities will have to conduct extensive audits on its reticulation networks and effect upgrading. Specific planning will also have to be done with regard to additional cleansing services in order to ensure a clean environment during the expected influx of tourists.

- Crowd management

  Effective crowd management will not be restricted to the gathering area. Taxi ranks and railway stations will also have to be monitored and managed appropriately whilst and will require special attention. Dedicated site management officials will have to be trained and deployed with the view to ensure effective appropriate crowd management.

- Environmental management

  Issues related to environmental pollution, with specific reference to air pollution and water pollution emanating from mine dumps and mining voids, would have to be adequately addressed. This imperative will require an assertive multi-disciplinary approach.

- Media relations

  There is a sustained tendency amongst the printed media in the district to thrive on negative reporting when it relates to any municipal matters. This relationship will have to be radically changed.

PRE-EVENT MEASURES TO BE IMPLEMENTED

	Defining of risk or resource deficiency	Proposed remedial measure
1.	Preparedness of all accommodation venues & hospitals	1. Preparedness of all accommodation venues to be evaluated and recorded with regard to – ▪ Security ▪ Fire preparedness ▪ Evacuation preparedness ▪ Emergency communication preparedness 2. Contingency teams to be trained & tested
2.	Road traffic signage & traffic signals	1. An audit to be conducted on all major arterial routes and signage be upgraded 2. An audit be conducted on all major arterial routes and traffic signals be erected at congested intersections
3.	Upgrading of all arterial routes	1. Road surface upgrades on all arterial routes to be investigated 2. Road reserve maintenance to be properly planned and effected – including the cleaning of road reserves and the making of fire breaks
4.	Essential services infrastructure	1. Conducting of an audit on all key essential services infrastructure in the district in order to ensure service sustaining 2. Conducting of upgrades & major repairs
5.	Emergency Services	1. Acquiring of adequate hydraulic rescue equipment 2. Acquiring of specialized rescue equipment for Specialized Rescue Team 3. Acquiring of adequate vehicles for rescue purposes 4. Provision of proficiency training 5. Drafting & approval of budgets
6.	Law enforcement	1. Standardizing on vehicles, insignia and uniforms 2. Joint appointment of *'traffic officers'* in the district in accordance with the provisions of the Road Traffic Act, 1996 3. Revision of by-laws 4. Training of staff in standardized operating procedures throughout the district 5. Effective deployment of CCTV systems
7.	Joint Command & Control	1. Standardised two-way radio communication systems to be completed 2. Acquiring of mobile Forward Command Vehicle for effective joint operations

		3. Facilitate progressive joint planning between all stakeholders 4. Facilitate regular stakeholder planning & progress meetings
8.	Crowd Control & Management	1. Training of staff & volunteers in effective crowd control & management
9.	Recruitment & training of volunteers	1. Defining of volunteer needs & requirements 2. Recruitment of volunteers 3. Training programs to be provided
10.	Development of media relations plan	1. Development of media relations plan
11.	Sensitizing all stakeholders on challenges	1. Regular briefing of Section 80 Committee
12.	Environmental management	1. Development of an assertive approach relating to the addressing of environmental management issues 2. Enforcement of statutory disaster management provisions

PART G CONCLUDING COMMENTS

From a risk & vulnerability point of view the societal well-being of the district is under threat whereas development demands and the ability of municipal structures to essentially provide and sustain the required infrastructure is questionable. This marginalized position is the collective result of –

- A progressive declining economic base and the lack of large scale, expansive diversification of the economy
- Lack of wealth creating investment and development and lack of consequential employment opportunities (in this respect it is important to note that although the development of SMME's is important, the district is in need of major job creating developments in the formal sector whereas such developments would in turn give further impetus to the development of SMME's)
- Growing levels of poverty and an increasing inability to pay for services rendered
- Growing service demands as a result of high density housing developments in the northern parts of the district
- Eroding and persistent environmental degradation
- Lack of focused and assertive land use management
- Lack of institutional capacity
- Creeping impact of HIV/Aids

From assessments conducted in the district it is clear that none of the three local municipalities, individually, currently has the capacity or ability, financially or otherwise, to significantly shrink the gap between service demands and the progressive provision of infrastructure resulting in the progressive & active mitigating of the current risk & vulnerability levels.

The only possible way out of the current cycle of stress and strain is the mobilization of the collective ability of all municipal structures in the district under strict, focused political leadership.

It is the opinion of this Department that the district has entered a critical phase in its history and that decisive and progressive intervention has become the only option to achieve sustainable development and the concurrent reduction of risk and vulnerability levels – intervention from within the collective municipal will and capacity in the district, or alternatively from the Provincial and National Government.

MOGALE CITY LOCAL MUNICIPALITY – RISK & VULNERABILITY ASSESSMENT

Risk & Vulnerability Assessment					
Local Municipality: Mogale City Local Municipality					
Department: Housing & Land			Sub-Department: Housing Projects		
Assessment Date: October – December					
Assessment description				Prevention Mitigation	
Risk Category: Planning of new housing settlements & Eradication of existing informal settlements					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention / Mitigation Proposal**	**Projects completed / approved**	**Budget Approved**
MCLM is experiencing a mushrooming of informal settlement where people stays in appalling conditions without access to basic services. The perception, although not quantified, is that rural areas are used as reception camps/areas and start to move into urban fabric as and when opportunities arise. It result in proliferation of informal structures and uncontainable growth in existing settlements. Often designated access routes for EMS are blocked by structures which renders such settlements very vulnerable during floods and fires	See attached list	Impact = 45 Probability = 45 (V) = 90%	High level negotiations between MEC (Local Government, MEC (Housing), MEC (GDACE), MEC (Social Dev. & Facilities) & MEC (Economic Dev.) to align processes, procedures & programmes to expedite Rural Housing Projects; Emergency Housing Policy & Policy on Upgrading of Informal Settlements must be enforced; Ring fencing of existing informal settlements accompanied by a proper management structure to contain growth.	Dept. of Housing (Gauteng) appointed RPTs to undertake registration of informal Settlements (ID locations with GPS, register all inhabitants Ring fencing: Dep of Housing (Gauteng) appointed RPTs to establish 5 rural settlements (250 stands/ settlement) MCLM initiated establishment of Rietfontein Village	Dept of Housing Projects (nil to MCLM); R326 000 for Rietfontein Village
Risk Category: Redevelopment of Hostels					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention / Mitigation Proposal**	**Projects completed / approved**	**Budget Approved**
Historically Hostels were male dominated. Needs changed and woman/children formed part of the social fabric. By virtue of design (physical structure), the setups exposes woman/children to abuse. Overcrowding regularly occurs which leads to infrastructure collapse. Illegal electrical connections are made, which all result into all hostel dwellers very vulnerable to deceases, injuries & even death.	Boiketlo Hostel, Kagiso old Hostel; Joshua Door (Green) Hostel; Munsieville Hostel	Impact – 20; Probability = 45 (RV) = 65%	Rehab of infrastructure to get services up to standards; Redevelop hostels to address needs – break down; redesign & construct (Kagiso Old hostel; rest of the hostels should be revamped	Dept of Housing (Gaut) conducted a socio-economic survey and a structural integrity assessment at Kagiso Old Hostel. Redevelopment of Kagiso Old Hostel planned for 2005/06	Dep of Housing Projects (Nil to MCLM)

Risk & Vulnerability Assessment				
Local Municipality: Mogale City Local Municipality				
Department: Integrated Environmental Management			Sub-Department: Waste, Environment & Parks	
Assessment Date: October – December				
Assessment description			Prevention Mitigation	
Identified Risk & State of Vulnerability	**Risk Area**	**Risk Profile**	**Proposed Measures to Mitigate Impact or Reduce Risk**	**Budget Approved**
Uncontrolled veld fires in urban open spaces and in rural areas – Loss and/or damage to property, infrastructure and life. Loss of biodiversity & ecological integrity of sensitive ecosystems increased number of small mammals into the urban environment, causing increased risks for zoonosis and confrontation with other predators (i.e. snakes)	Whole of MCLM	Probability = 40/50 Impact = 40/50 Risk profile = 80%	Environmental Education & Awareness Programmes, stricter enforcement of National Veld & Forest Fire Act (penalties, fines). Drafting of applicable By-laws, Multi-disciplinary task team to plan and coordinate controlled burning programmes, and preparation of fire breaks where possible. Approved budget for the above, including maintenance & rehabilitation.	Covered under the Capital Budget , Training as Peace Officers, Covered under the operational budget, partially covered under the Operational & Capital Budget (2003/04)
Wetland destruction – Chemical time bomb effect where heavy metals from mining and industrial areas that were captured in the wetland are been released – unknown quantities and quality of pollution may detrimentally affect all life forms downstream. Limited flood control will result in property damages downstream. Limited erosion control will result in situation of the wetland. Limited ability to sustain biodiversity. Limited ability to act as a carbon sink. Limited ability to capture and filter out of pollutants (chemical & biological)	Wetlands Areas (Wonderfontein Spruit, Riet spruit, Tweelopies Spruit, Hugenote Spruit	Probability = 10/50 Impact = 30/50 Risk profile = 40%	Internal Road & Culvert Policy should be drafted, map & monitor wetlands on a scientific basis. Liaise with NDA & DWAF w.r.t. Peat Mining Licences, compliance and enforcement of legal requirements on illegal practices. All wetlands – as per definition i.t.o. the NWA – should be considered no-go territory for any development of construction activities. Artificial wetlands, with assistance of GDACEL, DWAF & NDA, should be developed and maintained in demarcated areas.	None (Liaison with D:IM) Covered under the operational budget; Application will be lodged with NDA for Land Care Funds (i.e. R500 000)
Sinkhole formation – Channelling surface pollution to ground water resources – especially in areas where no alternative water sources are, such as Rand Water supply Increased risk to loss and/or damage to property, infrastructure and life	All dolomitic areas (Tarlton Sterkfontein)	Probability = 20/50 Impact = 30/50 Risk profile = 50%	Dolomitic risk assessment – involving specialists such as Council for Geosciences; Wits University, Stricter control all development and construction activities performed on land underlain by dolomites	Partially covered under the Operational Budget (Consultant Fees)
Ground & Surface water (quality % quantity) issues. Eutrophication, sterilisation of ground water resources for communities in areas where Rand water supply is not possible – massive social-economic implications; water borne decease will affect human life and domesticated stock; loss of biodiversity; Loss of ecological integrity of aquatic systems.	All areas affected by mining related activities & adjacent to the mining belt	Probability = 50/50 Impact = 50/50 Risk profile = 100%	Beef up Aquatic biomonitoring programme (expand to all major river systems; budget should be passed to get additional personnel & equipment – link with GDACEL & DWAF. Beef up and outsource surface & ground water monitoring programme who has adequate capacity; Ban all flood irrigation practices with sewage on dolomitic land – phase out with automised irrigation systems (Game reserve). A complete Hydro-Census should be carried out in consultation with Geo-hydrological experts (budget provision should be made). Electro Magnetic surveys for dykes & faults. Mapping and monitoring programme on spills and environmental disasters involving 107, waste water engineering, EHO, DWAF and GDACEL; Stricter enforcement of water quality guidelines on Mining, Water care works, Industries, Residential development (including informal settlements) & Agricultural activities – involving DWAF. Integrated Pest Control Policy should be formulated – involving NDA, SAPCA, PCSIRS (possible by-laws)	Covered under the operational budget. R1 million (Game reserve's budget) R500 000 (to be negotiated with the Council for Geoscience)
Chemical & Industrial spills (including illegal toxic dumping) – Loss of biodiversity; Pollution to the natural resource base (including surface and ground water; Loss and/or damage to the property, infrastructure & Life	Along all major transport routes All industrial Areas	Probability = 20/50 Impact = 30/50 Risk profile = 50%	An effective reporting and monitoring programme on sills and environmental disasters involving 107, Waste Water Engineering, EHO, DWAF and GDACEL; Strict enforcement of Municipal by-laws EHO's and Waste Water Engineering), Chemical monitoring – already addressed	None
Sewage Spills as a result of unavailability of Sewage tankers – Bacteriological & Chemical Pollution of all water sources, Human Health affects – ranging from deceases to smells & odour nuisance	All rural areas in MCLM that are not serviced by bulk networks	Probability = 10/50 Impact = 40/50 Risk profile = 50%	Private Companies (i.e. Waste tech, inter waste) available for support service; additional tankers (n=2) to be purchased for immediate use (adequate drivers available); Review tariff structures & by-laws	Partially covered under the capital budget and operational budget
Landfill Site Operations & Management – failure of equipment & vehicles – Non-compliance with statutory requirements will result in legal actions been taken against MCLM.	Luipaardsvlei Landfill site & Magalies landfill site	Probability = 20/50 Impact = 10/50 Risk profile = 30%	Lease vehicles with full maintenance contracts	Covered under the Operational Budget

Refuse Removal (Skip containers & Domestic & Business waste); Failure of equipment & vehicles; Personnel Strikes – Illegal dumping will be encouraged; Pollution & degradation to the environment	Whole of MCLM	Probability = 20/50 Impact = 40/50 Risk profile = 60%	Lease vehicles with full maintenance contracts	Covered under the Operational Budget
Flood events – Damage to dam walls, other infrastructure, services, etc. Massive erosion (especially on river banks where alien vegetation is established, and at storm water outlets in the natural environment); Informal settlements also in danger	Whole of MCLM But target informal settlements (see assessment under D: Housing & Land	Probability = 20/50 Impact = 20/50 Risk profile = 40%	Energy breakers at storm water outlets should be enforced – linked with NDA, GDACEL & Road & Surface drainage; Establish artificial wetlands in demarcated areas; Manage and conserve existing wetlands; Rehabilitation of erosion gullies by means of gabions – linked with NDA, GDACEL & Roads & Surface drainage	An application for Land care funds from NDA will be lodged (R500000) to be negotiated with D:IM.
Rapid invasion of alien vegetation – Loss of biodiversity; Affect water quality & quantity; Will result in substantial financial burden to MCLM to comply with CARA requirements.	Whole of MCLM	Probability = 50/50 Impact = 30/50 Risk profile = 80%	Continue to support WfW & Land Care Project for MCLM; Budget for follow-up & rehabilitation; Fire breaks should be prepared and maintained as discussed already	Covered under the Capital Budet
Loss/inappropriate use of agricultural land – Limit the ability for the agricultural sector to cater for the needs of RSA citizens	All rural areas in MCLM	Probability = 20/50 Impact = 20/50 Risk profile = 40%	Liaise with NDA & GDACEL w.r.t. implementing the agricultural policy for Gauteng. Assist in the compilation of an effective subdivision policy on agricultural land (link with Gauteng Agricultural Resource Audit, SDF for Gauteng, SDS for Mogale city); The same with consent uses, rezoning and township development; A policy on Agri-villages should be formulated – link with NDA, Agri-SA TVL Agriculture Union	Will be covered by DLED (under consultant fees for SDS & SDF)
Pollution (soil, air & water) from mining related activities – Unclean, unsafe and unhealthy environment for all who lives, work and relax in the zone of impact of these mining activities	All areas affected by mining related activities & adjacent to the mining belt	Probability = 40/50 Impact = 40/50 Risk profile = 80%	Link with DME on enforcement of EMPRs and requirements of the Mineral Act – assist in monitoring and reporting to DME; Apply pressure on Harmony Gold mine, DME & DWAF to address decant of water from the Western Basin; Compile and agree on a pollution monitoring programme – linked with DME, DWAF & GDACEL	Covered under the operational budget (Consultant fees)
Radio-active contamination of the natural resource base – Unclean, unsafe and unhealthy environment for all who lives, work and relax in the zone of impact of these mining activities	All areas affected by mining related activities & adjacent to the mining belt	Probability = 40/50 Impact = 40/50 Risk profile = 80%	Link with NNR, CSIR, DME w.r.t. compliance to relevant legislation; monitoring programmes; MCLM should purchase Geiger Counters for the Environmental Management Section and budget for appropriate training; Assistance should be given with monitoring and reporting.	Covered under the Capital Budget
Zoonosis and communicable diseases (rabies, bilharzia, bubonic plague; etc) – risks described already	Whole of MCLM	Probability = 10/50 Impact = 20/50 Risk profile = 30%	Integrated Pest Control strategy should be compiled – link with SAPCA; PCSIB: Training of nurses at clinics in tropical diseases should be encouraged; An effective reporting strategy should be formulated to support scientific research on this matter	Liaise with PCSIB to assist; Will be covered by SD: Health
Environmental (and legal & financial) risks related to non-compliance to environmental statutory requirements; Severe time delays, frustrations and financial losses are experienced during EIA processes; Severed legal risks and financial risks will burden MCLM if decisions are taken without due consideration to environmental statutory requirements	Whole of MCLM	Probability = 40/50 Impact = 30/50 Risk profile = 70%	Establish and EMU as proposed in the Strategic Initiatives for 2001/2002 – equipped with all relevant resources as specified; Apply to become a Competent Authority; Offered IEM services to the rest of the West Rand & COH-WHS; workshop statutory requirement with Politicians and Directors; Update the above regularly with new legislation.	Partially covered under the Capital Budget, Cost recovering (to be negotiated)
Long grass in urban areas – Veld fires, which can lead to loss or damage to property and life; increased number of diseases carried by these rodents; increased occurrence of snakes that feed on these rodents; Increased possibility of snakebites Increased occurrence of sinus and migraine problems due to grass pollen and veld fire smoke; Long grass obstruct traffic view, which is an unsafe condition; Hiding place for criminals where stolen items are hidden and rapists attack their victims; Bad state of town leads to reduce interest by investors	Whole of MCLM	Probability = 40/50 Impact = 10/50 Risk profile = 50%	Replacement of old machinery and vehicles & purchase (lease) of new ones; Appointment of contractors to assist parks section with grass cutting; Increased transport budget; Increased grass cutting frequency.	Partially covered under the Capital Budget
Inability to cope with large number of trees falling over in event of storm and inability to identify and remove dangerous trees on continuous and timely basis – Continuous rain increases risk of tree failures; Trees can fall over power cables, into roads and on top of houses; Falling trees can cause serious damage and can be fatal to humans; Falling trees and breaking branches can cause road accidents	Whole of MCLM	Probability = 20/50 Impact = 10/50 Risk profile = 30%	Replacement of old machinery and vehicles; Appointment of contractors to assist park section tee felling; Increased transport budget; Increased tree maintenance frequency in line with international arboriculture standards (ANSI A300); update by-laws	Covered already, covered under the Operational Budtet

Inability to maintain play parks for children to safe and acceptable standards – Serious injuries to childen playing on old and substandard play equipment; Liability claims against council	Whole of MCLM	Probability = 10/50 Impact = 10/50 Risk profile = 20%	Increased maintenance funds; replacement of old machinery and vehicles. Contractors to upgrade and maintain play equipment in parks.	Covered under the Operational Budget

Risk & Vulnerability Assessment							
Local Municipality: Mogale City Local Municipality							
Department: water and Sanitation			Sub-Department: Scientific Services				
Assessment Date: October – December							
Assessment description						Prevention Mitigation	
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Risk Category: Explosion							
Chemical explosion – chemical reactions between gas vapours	Scientific Services – water laboratory	Water Laboratory	To obtain material safety data sheets. General housekeeping To obtain a fire risk assessment from 107. Appointments of SHE representatives	21	R3 660 00	None	R0.00
Gas explosion – build-up of gas vapours (acetylene, N_2 and N_2O)	Scientific Services – water Laboratory	Water Laboratory	To obtain safety data sheets. General safety training. Good housekeeping To obtain a fire risk assessment from 107. Appointments of SHE representatives	21	R3 660 00	None	R0.00
Chemical explosions at industrial sites	Scientific Services – Industrial Management	Industries and businesses in Mogale City	Industrial inspections Environmental auditing Monitoring of industrial effluent	78	R3 660 00	None	R0.00
Risk Category Prevention Mitigation Costs					**R10 980,00**		**R0,00**
Risk Category: Flammable Substances							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Chemical fire – chemical reactions between gas vapours	Scientific Services – water Laboratory	Water Laboratory	To obtain material safety data sheets. General housekeeping To obtain a fire risk assessment from 107. Appointments of SHE representatives Maintenance/service of firefighting equipment	21	R8 600,00	None	R0,00
Gas explosion – build-up of gas vapours	Scientific Services – water Laboratory	Water Laboratory	To obtain material safety data sheets. General housekeeping To obtain a fire risk assessment from 107. Appointments of SHE representatives Maintenance/service of firefighting equipment	21	R8 600,00	None	R0,00
Chemical fire at industrial sites	Scientific Services – Industrial	Industries and businesses in Mogale	Industrial inspections Environmental auditing	50	R8 600,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R25 800,00**		**R0,00**
Risk Category: Spillages							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Inhalation of toxic vapours and lack of oxygen	Scientific Services – water Laboratory	Water Laboratory	OHTEC Survey Internal risk assessment Issuing of personal protective equipment Annual medical examination	863	R11 160,00	None	R0,00
Inhalation of toxic vapours and lack of oxygen	Scientific Services – Industrial Management	Industries and business in Mogale City	OHTEC Survey Internal risk assessment Issuing of personal protective equipment Annual medical examination	100	R3 000,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R25 160,00**		**R0,00**

Risk Category: Spillages							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Accidental release of industrial effluent into the environment	Scientific Services – Industrial Management	Industries and business in Mogale City	To obtain material safety data sheets. General safety training Good housekeeping To obtain assistance from 107 Appointments of hazardous substance co-ordinators To purchase appropriate equipment	100	R16 000,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R16 000,00**		**R0,00**
Risk Category: Spillages							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Inhalation of toxic vapours	Scientific Services – Industrial Management	Gelita South Africa	Internal risk assessment Issuing of personal protective equipment. Purchasing of appropriate gas meters Calibration of equipment Training	44	R36 160,00		
Risk Category Prevention Mitigation Costs					**R36 160,00**		**R0,00**
Risk Category: Explosion							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Gas explosion –build-up of gas vapours (methane and chlorine)	Wastewater treatment	Flip Human Anaerobic digesters and sewage pipelines Percy Stewart – anaerobic digesters, sewage pipeline and chlorine gas cylinders	To obtain material safety data sheets General safety training Good housekeeping To obtain a fire risk assessment from 107 Appointments of SHE representatives	72	R3 660,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R3 660,00**		**R0,00**
Risk Category: Fire/Flammable Substances							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Chemical fire – chemical reactions between gas vapours	Wastewater treatment	Flip Human - Anaerobic digesters Percy Stewart – anaerobic digesters and chlorine gas cylinders Magalies - chlorine	To obtain material safety data sheets General safety training Good housekeeping To obtain a fire risk assessment from 107 Appointments of SHE representatives Maintenance / service of firefighting equipment	50	R15 350,00	None	R0,00
Oil and fuel fire	Wastewater treatment	Flip Human – Diesel tank and oil store room Percy Stewart – Oil store room	General safety training Good housekeeping To obtain a fire risk assessment from 107 Maintenance / service of firefighting equipment	45	R2 300,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R17 650,00**		**R0,00**
Risk Category: Toxicity & Infectious Diseases							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Inhalation of toxic vapours	Wastewater treatment	Flip Human Percy Stewart Magalies	OHTEC Survey Internal risk assessment Issuing of personal protective equipment Annual medical examination	74	R55 000,00	None	R0,00

Risk Category Prevention Mitigation Costs		R55 000,00		R0,00

Risk Category: Instant Lawn							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Groundwater contamination due to irrigation of sludge and treated wastewater	Wastewater treatment	Flip Human Percy Stewart Magalies	Annual soil analyses – 3 monthly Groundwater analyses – weekly bio-solid analyses	20	R40 000,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R17 650,00**		**R0,00**
Risk Category: Confined Spaces							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Inhalation of toxic vapours and lack of oxygen	Wastewater treatment	Flip Human Percy Stewart Magalies	Internal risk assessment Issuing of personal protective equipment. Purchasing of appropriate gas meters Calibration of equipment Use of appropriate equipment (tripod & airline)	34	R117 160,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R117 160,00**		**R0,00**
Risk Category: Power Failure							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Untreated effluent into the environment (pollution)	Wastewater treatment	Flip Human Percy Stewart Magalies	Closing of valves Re-direct flow to the balancing dam Inform downstream users	89	R0,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R0,00**		**R0,00**
Risk Category: Drowning							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Illegal use of maturation dams for recreational purposes	Wastewater treatment	Flip Human	Notice signboards Flyers Inform community at meetings	50	R6 000,00	None	R0,00
Accidental drowning of employees (biological nutrient removal plant and settling tanks)	Wastewater treatment	Flip Human Percy Stewart Magalies	General safety training Good housekeeping Appointments of SHE representatives Purchasing of personal protective equipment	22	R10 000,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R16 000,00**		**R0,00**
Risk Category: Floods							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Uncontrolled storm water flow at Percy Stewart leads to flooding of inlet works	Wastewater treatment	Percy Stewart	Improvement of existing storm water drainage systems Installation of a by-pass pipeline	72	R30 000,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R30 000,00**		**R0,00**
Risk Category: Theft							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Burglary	Wastewater treatment	Flip Human	Regular maintenance on the alarm system. 24 h armed security guard	51	R115 000,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R115 000,00**		**R0,00**
Risk Category: Equipment Failure							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Raw sewage and sludge spillage	Wastewater treatment	Flip Human Percy Stewart	Preventative maintenance program.	63	R632 000,00	None	R0,00

		Magalies	Filing of critical positions. Training				
Risk Category Prevention Mitigation Costs					R632 000,00		R0,00

Risk Category: Theft/Sabotage							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Flooding, untreated wastewater into the environment	Wastewater treatment	Mogale City Pump stations, Rietvallei Munsieville Magalies	SMS Monitoring system	53	R8 000 / each	None	R0,00
Risk Category Prevention Mitigation Costs					**R0,00**		**R0,00**
Risk Category: Blockage							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Flooding, untreated wastewater into the environment	Wastewater treatment	Mogale City Pump stations, Rietvallei Munsieville Magalies	Community training. Preventative maintenance	54	R0,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R0,00**		**R0,00**
Risk Category: Construction							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Manhole: Caving of ground, offloading of equipment, accident – injury to employees	Wastewater network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	1	R12 640,00	None	R0,00
Installation of sewer pipelines: Caving of ground, offloading of equipment, accident – injury to employees	Wastewater network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	1	R400 / m	None	R0,00
Installation of sewer connection: Caving of ground, offloading of equipment, accident – injury to employees	Wastewater network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	1	R1 400 / m	None	R0,00
Installation of sewer pipes at a road-crossing: To obtain permission from the water, electrical, gas, traffic as well as storm water departments	Wastewater network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	1	R5 000 / connecting	None	R0,00
Risk Category Prevention Mitigation Costs					**R12 640,00**		**R0,00**
Risk Category:							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Untreated wastewater into the environment	Wastewater network	Mogale city sewage reticulation system; Kagiso, Boiketlo	Preventative maintenance Emergency maintenance Community training	78	R300 / spillage	None	R0,00
Housekeeping / Chemicals / Soil Rehabilitation	Wastewater network	Mogale city sewage reticulation system; Kagiso, Boiketlo	Follow the written safe work procedure. Safety training Personal protective equipment	78	R60 / m	None	R0,00
Risk Category: Toxicity & Infection Diseases							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Inhalation of toxic vapours	Wastewater network	Manholes / Pumpstations	Internal risk assessments. Issuing of personal protective equipment.	74	R55 000,00	None	R0,00

			Annual medial examinations Training				
Risk Category Prevention Mitigation Costs					R55 000,00		R0,00

Risk Category: Maintenance							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Repair of sewer pipeline: Caving of ground, offloading of equipment, accident – injury to employees To obtain permission from owner	Wastewater network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	20	R500/m	None	R0,00
Opening sewer blockages, emergency maintenance	Wastewater network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	23	R150/blockage	None	R0,00
Cleaning pits: Pump stations and sewer lines	Wastewater network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	43	R150/pit	None	R0,00
Clean sewer lines	Wastewater network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	46	R500/LINE	None	R0,00
Risk Category Prevention Mitigation Costs					R0,00		R0,00
Risk Category: Confined spaces							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Inhalation of toxic vapours and lack of oxygen	Wastewater network	Manholes	Internal risk assessments Issuing of personal protective equipment Purchasing of appropriate gas meters Calibration of equipment Training	34	R117 160,00	None	R0,00
Risk Category Prevention Mitigation Costs					R117 160,00		R0,00
Risk Category: High Jacking							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Death and loss of equipment	Wastewater network	Manholes	Training of employees	1	R0,00	None	R0,00
Risk Category Prevention Mitigation Costs					R0,00		R0,00
Risk Category: Accidents							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Injuries	Wastewater network	Manholes	Training – First Aid	1	R0,00	None	R0,00
Death and loss of equipment	Wastewater network	Manholes	Training – First Aid	1	R0,00	None	R0,00
Risk Category Prevention Mitigation Costs					R117 160,00		R0,00
Risk Category: Floods							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Storm water infiltration into sewer lines	Wastewater network	Manholes	Routine maintenance	72	R0,00	None	R0,00
Risk Category Prevention Mitigation Costs					R117 160,00		R0,00
Risk Category: Theft							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Burglaries	Wastewater network	Chamdor yard	24h security guards	62	R0,00	None	R0,00

Risk Category Prevention Mitigation Costs					R117 160,00		R0,00
Risk Category: Equipment failure							
Risk Description	Sub-Department	Risk Area	Preventative Proposal	% Risk Value	Prevention Mitigation Cost	Project	Budget approved
Vehicle	Wastewater network	Mogale City	Routine maintenance on vehicles	75	R0,00	None	R0,00
Risk Category Prevention Mitigation Costs					R117 160,00		R0,00

Risk Category: Areas without water							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Diseases, complaints from community	Wastewater network	Driefontein 179 IQ Horingklip 178 IQ Nooitgedagt 534	New infrastructure	85	R3 000 000,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R3 000 000,00**		**R0,00**
Risk Category: Areas with limited water supply / pressuer							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Diseases, complaints from Community	Wastewater network	Driefontein 179 IQ Horingklip 178 IQ Nooitgedagt 534	New infrastructure and withdraw wastewater via a tanker service	85	R11 000 000,00	None	R0,00
Risk Category Prevention Mitigation Costs					**R11 000 000,00**		**R0,00**
Risk Category: Construction							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Manhole: Caving of ground, Offloading of equipment; Accident – injury to employees	Water network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	8	R1 000,00 / manhole	None	Normal operating budget
Installation of water pipeline: Caving of ground, Offloading of equipment; Accident – injury to employees	Water network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	9	R400,00 / m	None	Normal operating budget
Installation of water connection: Caving of ground, Offloading of equipment; Accident – injury to employees	Water network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment	9	R1 400,00 / m	None	Normal operating budget
Installation of water pipes at a road crossing could result in possible accidents & injuries of employees & public	Water network	Mogale City	Follow the written safe work procedure. Safety training Personal protective equipment To obtain permission from the water, electrical, gas, traffic and storm water departments	23	R5 000,00 / connection	None	Normal operating budget
Risk Category Prevention Mitigation Costs					**R0,00**		**R0,00**
Risk Category: Spillage							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Potable water that escapes into the environment could result in unaccounted for water losses (possible financial, pressure and supply problems)	Water network	Mogale city water reticulation system	Preventative maintenance Emergency maintenance Community training	15	R300,00 / spillage	None	Normal operating budget
Risk Category Prevention Mitigation Costs					**R0,00**		**R0,00**
Risk Category: Maintenance							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Repair of water pipeline: Caving of ground, Offloading of equipment; Accident – injury to employees	Water network	Mogale City	Follow the written safe work procedure Safety training Personal protective equipment	16	R500 / m	None	Normal operating budget

Cleaning reservoirs could lead to temporary water shortages	Water network	Mogale City	Follow the written safe work procedure Safety training Personal protective equipment	16		None	Normal operating budget
Cleaning waterlines could lead to temporary water shortages	Water network	Mogale City	Follow the written safe work procedure Safety training Personal protective equipment Inform community	45	R150/m	None	Normal operating budget
Augmentation of Rand water supply by means of additional boreholes could pollute total water supply if ground water base is contaminated	Water network	Mogale City	Water quality monitoring of all reservoirs and water towers on a monthly basis; appoint consultants to trace the contamination when found, additional monitoring programme for borehole water used for augmentation still to be discussed with management	45		None	Normal operating budget
Risk Category Prevention Mitigation Costs					**R0,00**		**R0,00**
Risk Category: Confined spaces							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Inhalation of toxic vapours and lack of oxygen that could lead to unconsciousness & death	Water network	Manholes	Internal risk assessments Issuing of personal protective equipment Purchasing of appropriate gas meters Calibration of equipment	32	R117 160,00	None	Normal operating budget
Risk Category Prevention Mitigation Costs					**R117 160,00**		**R0,00**
Risk Category: High Jacking							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Death and loss of equipment during high jacking event could result in a limited resource capacity to deal with normal maintenance & construction programmes	Water network	Mogale City	Training of employees, Installation of anti-hijack devises and alarm system on all vehicles	6		None	Normal operating budget
Risk Category Prevention Mitigation Costs					**R0,00**		**R0,00**
Risk Category: Accidents							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Injuries to employees could result in a limited resource capacity to deal with normal maintenance & construction programmes	Water network	Mogale City	Training – First Aid	10		None	Normal operating budget
Death and loss of equipment during high jacking event could result in a limited resource capacity to deal with normal maintenance & construction programmes	Water network	Mogale City	Training – First Aid	10		None	Normal operating budget
Risk Category Prevention Mitigation Costs					**R0,00**		**R0,00**
Risk Category: Floods							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Storm water infiltration into waterlines could result in sub-quality of water distributed to communities	Water network	Mogale City	Routine maintenance	43		None	Normal operating budget
Risk Category Prevention Mitigation Costs					**R0,00**		**R0,00**
Risk Category: Theft							
Risk Description	**Sub-Departmen**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**

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Theft could result in a limited resource capacity to deal with normal maintenance & construction programmes	Water network	Chamdor yard	24h security guards	31		None	None
Risk Category Prevention Mitigation Costs					R0,00		R0,00

Risk Category: Equipment failure							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Lack of appropriate funds to service & maintain vehicles could result in a limited resource capacity to deal with normal maintenance & construction programmes	Water network	Mogale City	Routine maintenance on vehicles	75		None	Normal operating budget
Risk Category Prevention Mitigation Costs					**R0,00**		**R0,00**
Risk Category: Areas without access to potable water (piped) and or limited ground water							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Diseases, complaints from community, suffering of communities, limited domesticated stock and crops (limited food security)	Water network	Driefontein 179JQ Driefontein 179 IQ Honingklip 179 IQ	New infrastructure or alternatively water supply via a tanker service	85	R3 000 000,00	To be confirmed with management	R2 000 000,00
Risk Category Prevention Mitigation Costs					**R3 000 000,00**		**R2 000 000,**
Risk Category: Areas with limited water supply/pressure							
Risk Description	**Sub-Department**	**Risk Area**	**Preventative Proposal**	**% Risk Value**	**Prevention Mitigation Cost**	**Project**	**Budget approved**
Diseases, complaints from community	Water network	Driefontein 179JQ Driefontein 179 IQ Honingklip 179 IQ	New infrastructure or alternatively water supply via a tanker service	85	R11 000 000,00		R3 400 000
Risk Category Prevention Mitigation Costs					**R11 000 000**		**R3 400 000**

Risk & Vulnerability Assessment					
Local Municipality: Mogale City Local Municipality					
Department: Infrastructure Management			Sub-Department: Electricity		
Assessment Date: October – December					
Assessment description				Prevention Mitigation	
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Risk Category: 33kv High Voltage section					
Equipment failure associated with the 33KV supply network could result in major power failures to industries & residential areas, businesses; and could lead to loss of life (hospitals) and/or damage to properties. E.g. the loss of 33KV from ESCOM at Condyle substation will lead to total electricity blackout of the whole of KDG	Whole of MCLM (Areas linked with Condyle, spruit, Libertas, KDP north, Boltonia, Chamdor, Factoria, Jackson substations)	Impact = 50 Probability = 5 RV = 55%	Prevention actions up to Condyle need to be enforced by ESCOM, However, sabotage/vandalism could affect MCLM after Condyle. Supply network belonging to MCLM: Building additional overhead lines (Chamdor & Muldersdrift) Maintenance & repairs on exiting lines Fazing out of all oil cables	33KV Chamdor to Factoria overhead line (in process) 33KV Muldersdrift (in process) Routine maintenance & repair programmes	To be confirmed
Due to the foreseen inadequate capacity of current infrastructure to supply power during the forthcoming winter, major power failures to industries & residential areas, businesses is imminent; and could lead to loss of life (Hospitals) and/or damage to properties	Whole of MCLM (Areas linked with Condyle, spruit, Libertas, KDP north, Boltonia, Chamdor, Factoria, Jackson substations)	Impact = 50 Probability = 5 RV = 55%	Supply network belonging to MCLM Building additional overhead lines (Chamdor & Muldersdrift) Maintenance & repairs on existing lines Fazing out of all oil cables	The same as above	To be confirmed
Vandalism & theft of 33KV Pilon support structures could lead to the collapse of pilons with the resultant possibility of death, injuries & damages to properties and will cause total electricity block outs throughout relevant supply areas	Mainly Chamdor	Impact = 40 Probability = 25 RV = 65%	Immediate repairs to all relevant lattis structures; Proposed waving of tender procedures for all urgent maintenance & repairs – to be compiled in the form of a policy	The same as above	To be confirmed
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Risk Category: 11 & 6.6KV High Voltage Section & 400V Low Voltage System					
Equipment failure associated with the 400V & 11 & 6.65KV supply network could result in major power failures (depending on the damages and where it happened) to certain industries & residential areas, businesses and could lead to loss of life(Hospitals) and/or damage to properties	Whole of MCLM (Effects would be dependent on damages & location where it occurs)	Impact = 50 Probability = 5 RV = 55%	Prevention actions up to Condyle need to be enforced by ESCOM, However, sabotage/vandalism could affect MCLM after Condyle. Supply network belonging to MCLM: Building additional overhead lines (Chamdor & Muldersdrift) Maintenance & repairs on exiting lines Fazing out of all oil cables	33KV Chamdor to Factoria overhead line (in process) 33KV Muldersdrift (in process) Routine maintenance & repair programmes	To be confirmed
Due to the foreseen inadequate capacity of current infrastructure to supply power during the forthcoming winter, major power failures to some industries & residential areas, businesses is imminent.	Whole of MCLM (Effects would be dependent on damages & location where it occurs)	Impact = 50 Probability = 5 RV = 55%	Ensuring firm supply; Regular maintenance & repair programme on equipment; Pro-active planning	Pro-active planning is done ongoing and need to be implemented	To be confirmed
Vandalism & theft could lead to power failures and possible death, injuries & damages to properties	Mainly overhead lines are targeted	Impact = 40 Probability = 25 RV = 65%	Immediate repairs to all relevant equipment; Proposed waving of tender procedures for all urgent maintenance & repairs – to be compiled in the form of a policy.	Ongoing maintenance & repairs where needed	To be confirmed

Risk Description	Risk Area	% Risk Value	Prevention Mitigation Cost	Project completed / approved	Budget approved
Risk Category: Cleansing					
Failure of executing this daily activity could lead to: Health risk to users Dangerous pedestrian walkway – surfaces Bad image Legal action against Council from injuries Devaluation of property Etc.	All council buildings and facilities	Impact = 40 Probability = 30 RV = 70%	Cleaning	Ongoing activity	Normal maintenance budget/ cost implication unknown
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Risk Category: Plumbing Maintenance					
Damages to building, furniture and equipment, IT equipment and internal finishes due to: Roof leaks Geysers Burst pipes Blocked drains and waste pipes	All council buildings and facilities	Impact = 30 Probability = 30 RV = 60%	Difficult, act on complaints lodged, incident report, instruction or request	Ongoing activity	Normal maintenance budget/ cost implication unknown

Risk Description	Risk Area	% Risk Value	Prevention Mitigation Cost	Project completed / approved	Budget approved
Risk Category: Civil Maintenance					
Failure to maintain Council assets in terms of Building and facilities could lead to rejection of insurance claims, to major financial expenditure later on, on remedial work, could lead to buildings declared unsafe for use, could lead to buildings being vandalised, could lead to accidents with disastrous consequences and even loss of life, legal action taken against Council for injuries, etc.	All council buildings and facilities	Impact = 40 Probability = 30 RV = 70%	Regular assessment of maintenance work needed, empowerment of project managers in terms of transport allowances to conduct a building audit to enable them to do pro-active planning.	Ongoing activity	Normal maintenance budget/ cost implication unknown
Failure to maintain buildings may lead to negative message going out with regard to Mogale City's image and respect for property	All council buildings and facilities	Impact = 40 Probability = 30 RV = 70%	Ongoing maintenance	Ongoing activity	Normal maintenance budget/ cost implication unknown
Risk Category: Machinery and equipment maintenance					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Failure to maintain, service, repair and/or replacement of machinery and equipment used for its intended purpose, could lead to employees working in a unsafe working environment, expose employees to life threatening conditions, it could also cause low and/or even zero productivity. Council could expose itself to legal action according to the machinery and Occupational Safety Act of 1983 (Act 6 of 1983) in terms of compulsory testing and servicing of equipment	All machinery and equipment including consumable tools used in the municipal environment	Impact = 40 Probability = 40 RV = 80%	To conduct regular and prescribed service inspections to maintain, repair or to replace machinery and equipment in the workplace. Service contracts to be implemented.	Ongoing activity	Normal maintenance budget/ cost implication unknown
Risk Category: Maintenance (Lifts)					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Failure to maintain the equipment will result into breach of contract with the relevant service provider and Council will also be in contravention with Machinery and Occupational Safety Act (Act 6 of 1983)	Where installed	Impact = 40 Probability = 30 RV = 70%	To continue with current service contracts	Ongoing activity	Normal maintenance budget
Risk Category: Maintenance of Radio Communication System and Mobile Instruments					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Failure to maintain the radio communication system could lead and result into serious difficulties and consequences encountered during a situation of actual disaster management. This could also lead to an unnecessary time delay on call outs and response during normal working hours and after hours.	Safety and security, traffic control, water and sewer, electricity, building and facility maintenance.	Impact = 40 Probability = 30 RV = 70%	Continuous inspection and reporting of faulty instruments and maintenance thereof. Implementation of an annual service contract.	Ongoing activity	Normal maintenance budget/ cost implication unknown

Risk Category: Cleansing					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Failure of executing this daily activity could lead to: Health risk to users Dangerous pedestrian walkway – surfaces Bad image Legal action against Council from injuries Devaluation of property	All council buildings and facilities	Impact = 40 Probability = 30 RV = 70%	Cleaning	Ongoing activity	Normal maintenance budget/ cost implication unknown

Risk & Vulnerability Assessment				
Local Municipality: Mogale City Local Municipality				
Department: Infrastructure Management			Sub-Department: Roads & Surface drainage	
Assessment Date: October – December				
Assessment description				Prevention Mitigation
Identified Risk & State of vulnerability	**Risk Area**	**% Risk Value**	**Proposed measures to mitigate impact or reduce risk**	**Budget**
Uncontrolled veld fires – in open urban spaces, in rural areas, developed areas, and in the relevant adjoining Road reserves. Risk to motorists and other road users regarding reduced visibility Loss and/or damage to property, infrastructure and life. Non-compliance could result in legal actions been taken against MCLM	Whole of MCLM	Probability = 40/50 Impact = 40/50 Profile =80%	Environmental Education & Awareness Programmes; Stricter enforcement of National Veld & Forest Fire act (penalties, fines) Drafting of applicable by-laws Multi-disciplinary task team to plan and coordinate controlled burning programmes and preparation of fire breaks where possible, Approved budget for the above, including maintenance & rehabilitation	Liaise with D:IEM
Long grass in urban areas Risk to motorists and other road users regarding reduced visibility Veld fires, which can lead to loss or damage to property and life Long grass obstructs traffic view, which is an unsafe condition Non-compliance could result in legal actions been taken against MCLM	Whole of MCLM	Probability = 40/50 Impact = 10/50 Profile =50%	Replacement of old machinery and vehicles & purchase (lease) of new ones Appointment of contractors to assist parks section with grass cutting Increased transport budget Increased grass cutting frequency	Liaise with D:IEM
Oil & chemical, and freighted load spillages – onto roadways creating hazardous traffic surfaces. Also, black ice formation in winter conditions due to water leakages Risk to motorists and other road users Loss and/or damage to property, infrastructure and life Non-compliance could result in legal actions been taken against MCLM	Whole of MCLM	Probability = 20/50 Impact = 30/50 Profile =50%	Liaise with Department: Public Safety, Liaise with Sub-Department waste water engineering	Covered under the operational budget Liaise with D:w&S
Road pavement structural failures – Earth embankment landslips, retaining wall failures, transvers & lateral cracking, heaving, subsidence, potholes, deterioration of wearing surfaces, etc. Risk to pedestrians, motorists and other road users Loss and/or damage to property, infrastructure and life Non-compliance with statutory requirements could result in legal actions been taken against MCLM	Whole of MCLM	Probability = 20/50 Impact = 30/50 Profile =50%	Constant and efficient monitoring and analyses of all Road Building materials in certified Soils Laboratories Regular updating of and timeous response to Pavement Management Systems surveys Efficient and rapid response to complaints received by the public	Covered under the operational budget
Road sidewalk maintenance – deterioration or lack of pedestrian walking surfaces Risk to pedestrians, motorists and other road users Loss and/or damage to property, infrastructure and life Non-compliance with statutory requirements could result in legal actions been taken against MCLM	Whole of MCLM	Probability = 20/50 Impact = 30/50 Profile =50%	Efficient and rapid response to complaints received by the public. Liaise with other Departments / Sub-Departments	Covered under the operational budget
Flood events – 1:50 and 1:100 Year storm occurrences, catastrophic breachment and/or overflow of dam walls, road bridge wash ways / failures, canal / culvert and or pipeline overflow with resultant flooding and damage to lower-lying property and infrastructure. Risk to life and property, motorists and other road users. Damage to dam walls, other infrastructure, property, services, etc. Massive erosion (especially on river banks where alien vegetation is established, and at storm water outlets in the natural environment) Non-compliance with statutory requirements could result in legal actions been taken against MCLM	Whole of MCLM	Probability = 20/50 Impact = 20/50 Profile =40%	Regular controlled inspections of dam walls, abutments, downstream overflows. Energy breakers at storm water outlets should be enforced – linked with NDA; GDACEL & Roads and Surface Drainage. Establish artificial wetlands in demarcated areas Manage and conserve existing wetlands. Rehabilitation of erosion gullies by means of gabions – linked with NDA, GDACEL & Roads & Surface drainage Regular cleaning and maintenance of all SW Infrastructure	Process already in place An application for Land Care funds from NDA will be lodged (R500000) to be negotiated with D:IEM Covered under the operational budget
Wetland destruction – Limits Storm water flood control which will result in property damages downstream Pollution risk to landowners and inhabitants,	Whole of MCLM	Probability = 10/50 Impact = 30/50	Internal road & culvert policy should be drafted Research, map & monitor wetlands on a scientific basis Liaise with NDA &DWAF w.r.t. Peat mining licences, compliance and enforcement of legal requirements on illegal practices;	Application will be lodged with NDA for land care

animals – Chemical time bomb effect where heavy metals from mining and industrial areas that were captured in the wetland are been released- unknown quantities and quality of pollution may detrimentally affect all life forms downstream. Limited flood control will result in property damage downstream; Limited erosion control will result in siltation of the wetland Limited ability to sustain biodiversity Limited ability to act as a carbon sink Limited ability to capture and filter out of pollutants (chemical & biological)		Profile =40%	All wetlands – as per definition i.t.o. the NWA – should be considered no-go territory for any development or construction activities Artificial wetlands, with assistance of GDACEL, DWAF & NDA, should be developed and maintained in demarcated areas	funds R500 000)
Sinkhole formation – Pollution risk to landowners and inhabitants, animals Risk to life and property, motorists and other road users. Channelling surface pollution to ground water resources – especially in areas where no alternative water sources are, such as Rand Water supply Increased risk to loss and/or damage to property, infrastructure and life	Whole of MCLM	Probability = 20/50 Impact = 30/50 Profile = 50%	Dolomitic risk assessment – involving specialists such as Council for Geosciences, Wits University Stricter control all development and construction activities performed on land underlain by dolomites	None
Chemical & Industrial spills – (including illegal toxic dumping) – resulting in storm water infiltration Pollution risk to landowners and inhabitants, animals Oss of biodiversity Pollution to the natural resource base (including surface and ground water) Loss and/or damage to property, infrastructure & life	Whole of MCLM	Probability = 20/50 Impact = 30/50 Profile = 50%	An effective reporting and monitoring programme on spills and environmental disasters involving 107, waste water engineering, EHO, DWAF and GDACEL. Strict enforcement of Municipal by-laws (EHOs and waste water engineering) Chemical monitoring – already addressed	None
Sewage spills – as a result of unavailability of sewage tankers and subsequent infiltration of storm water systems. Pollution risk to landowners and inhabitants, animals Bacteriological & Chemical pollution of all water sources Human Health affects – ranging from diseases to smells & odour nuisances	Whole of MCLM	Probability = 10/50 Impact = 40/50 Profile = 50%	Private companies (i.e. waste tech; inter waste) available for support services; Additional tankers (n=2) to be purchased for immediate use (adequate drivers available) Review tariff structures & by-laws	Covered under the operational budget
Narrow road reserves – informal settlements Risk to pedestrians, motorists and other road users Emergency vehicles (such as fire engines and ambulances) have limited or no access No turning circles are possible (restricted space)	Whole of MCLM	Probability = 10/50 Impact = 40/50 Profile = 50%	A minimum road reserve width of 12m should be enforced on all township developments submitted; Cul-de-sac roadways to be provided with adequate turning circle facilities	Covered under the operational budget
Fallen trees and debris – inability to cope with large number in event of storms and inability to identify and remove dangerous trees on continuous and timely basis. Risk to pedestrians, motorists and other road users. Continuous rain increase risk of tree failures Trees can topple over onto power cables, into roadways and onto houses; Falling trees can cause serious damage and can be fatal to humans Falling trees and breaking branches can cause road accidents Non-compliance could result in legal actions been taken against MCLM	Whole of MCLM	Probability = 20/50 Impact = 10/50 Profile = 30%	Replacement of old machinery and vehicles Appointment of contractors to assist parks section tree felling Increased transport budget Increased tree maintenance frequency in line with international arboriculture standards (ANSI A300) Update by-laws	None
Railway Line infrastructure theft: Continuous theft of infrastructure could cause derailing of trains & freight at enormous costs	Chamdor & Factoria	Probability = 30/50 Impact = 30/50 Profile = 60%	Determining of essential railways lines, where after it should be made theft proof, selling-off non-essential lines	Covered under the operational budget
Geometric Design of Roadways and Surface Drainage Infrastructure Risk to life and property, motorists and other road users Non-compliance with approved design requirements will result in legal actions been taken against MCLM. Loss and/or damage to property, infrastructure & Life	Whole of MCLM	Probability = 31/50 Impact = 40/50 Profile = 50%	Maintenance and monitoring by suitably qualified personnel of approved design procedures and by continual updates via Software Design Programs	Covered under the operational budget

Risk & Vulnerability Assessment					
Local Municipality: Mogale City Local Municipality					
Department: Community Services			Sub-Department: Social Services		
Assessment Date: October – December					
Assessment description				Prevention Mitigation	
Risk Category: Multi Purpose Community Centres (MPCC)					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Regarding Fire Hazards Fire control equipment is not serviced and inadequate and could result in damages to property and loss of lives; Lack of training & evacuation drills of employees	MPCC (Kagiso, Extension 12, Lusaka X 1, Tarlton, Hekpoort, KDG Central, Muldersdrift)	Impact = 30 Probability = 10 RV = 40%	To request that WRDM (Fire brigade) conduct a Fire Assessment in terms of all equipment, storage etc. That WRDM assist with evacuation plans, staff training & drills for all employees	Strict enforcement of non-smoking Routine maintenance of existing firefighting equipment	Normal maintenance budget / Financial implication unknown
Vandalism and general theft could result in damages to property, equipment & assets	MPCC (Kagiso, Extension 12, Lusaka X 1, Tarlton, Hekpoort, KDG Central, Muldersdrift)	Impact = 35 Probability = 40 RV = 75%	To beef up security (personnel & IT) where required (see info below)	Security provided by Department Public Safety	Normal maintenance budget / Financial implication unknown
Regarding Security Issues: Limited security could result in vulnerable staff as a result of direct conflict with hostile customers; Access control & key control is enforced (to offices, store rooms, archives etc.) Alarm system linked to security response companies and must be effective maintained to ensure security, safety & sufficient coverage Security & protection of Data & information vulnerable due to hacking – inadequate firewall	MPCC (Kagiso, Extension 12, Lusaka X 1, Tarlton, Hekpoort, KDG Central, Muldersdrift)	Impact = 35 Probability = 40 RV = 75%	To request for adequate security on site; Installation of an effective firewall (as per Sub Department IT's proposal) & drafting of internal policy on data backup procedures; Installation of an effective alarm system; Effective access & key control at all offices, store rooms, archives, etc.	To be negotiated with senior management (IT & Public Safety)	Normal maintenance budget / Financial implication unknown
Flood risks have been reported at Extension 12 MPCC due to inadequate storm water system design, road design & building design. Flooding only occurs during heavy downpours and could cause damages to Council property.	MPCC Extension 12	Impact = 35 Probability = 40 RV = 75%	To request for adequate security on site; Installation of an effective firewall (as per Sub Department IT's proposal) & drafting of internal policy on data backup procedures; Installation of an effective alarm system; Effective access & key control at all offices, store rooms, archives, etc.	To be negotiated with senior management (IT & Public Safety)	Normal maintenance budget / Financial implication unknown

Risk & Vulnerability Assessment					
Local Municipality: Mogale City Local Municipality					
Department: Community Services			Sub-Department: Health		
Assessment Date: October – December					
Assessment description				Prevention Mitigation	
Risk Category: Food Poisoning					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Food preparation for big events – no permit obtained as required i.t.o. by-law	Whole of MCLM	Impact = 40 Probability = 10 RV = 50%	Resources to conduct inspections at all food premises and insurance of quality control. Companies supposed to obtain permit before event	No project approved yet for public awareness and education	0
Prepacked food getting contaminated or damaged	Mostly Food manufacturer in industrial areas (Bullband, Piemans, Peanut Butter)	Impact = 30 Probability = 5 RV = 35%	Random sampling & taking swaps; Inspections	Monthly inspections at all major food manufacturers; Monthly sampling of milk, food & meat	Normal operating budget (R8 000 for samples & swaps)
Risk Category: water borne diseases					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Exposure of communities in rural areas to water sources that are polluted	Lusaka; RIetvallei; Vlakplaats; Tarlton; Pangoville; Rietfontein	Impact = 40 Probability = 40 RV = 80%	Proper sanitation and potable water supply; Formalisation of informal settlements into proper services townships; ID of point & diffuse pollution sources; Legal actions against polluters	Routine inspections to affected areas as reported by Clinics; Water samples (ad hoc) for bacteria and cholera (biannual)	Normal operating budget (R10 000 for samples & Swaps)
Not effective communication from GP; Hospitals (private & state) to EHPs on communicable diseases	Whole of MCLM	Impact = 30 Probability = 40 RV = 70%	Compilation of a communication strategy for communicable diseases	No project approved yet for GPs and Hospitals awareness and education	R0
Risk Category: Overpopulation					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Overcrowding in informal settlements leading to the spread of communicable diseases	All informal settlements within MCLM	Impact = 30 Probability = 40 RV = 70%	Proper housing & infrastructure; Public Health Awareness & Education	Public Health Awareness & Education Routine inspections	Normal operating budget
No proper cross ventilation leading to the spread of communicable diseases	All informal settlements within MCLM	Impact = 30 Probability = 40 RV = 70%	Proper housing & infrastructure; Public Health Awareness & Education	Public Health Awareness & Education Routine inspections	Normal operating budget
Risk Category: Air quality (Fire Risks)					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
The use of paraffin, gas & wood for energy in the absence of electricity resulting in eruption of fires (causing burns, death & destitution – leading to more pverty)	All informal settlements within MCLM	Impact = 40 Probability = 40 RV = 80%	Health awareness campaigns on the use of gas & wood; Awareness programmes on the prevention of domestic accidents	Health awareness campaigns on the use of gas & wood; Awareness programmes on the prevention of domestic accidents	Normal operating budget
Risk Category: Special Programmes					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Office on the Status of Disabled People & Programmes: Council buildings in general not accessible for disabled people – in cases of emergencies, disabled people could get trapped; Programmes aimed to build capacity amongst the disabled and should it not be done, these people will even become more vulnerable.	Office (Central library) Programmes – All council buildings (except civic centre)	Impact = 20 Probability = 5 RV = 25%	Upgrading of all relevant Council building to improve accessibility in line with the Disability policy	None (to be confirmed with building maintenance) Ongoing programmes as per annual schedule	Normal operating budget / financial implication unknown
Indigent Programme & Office Similar report regarding fire hazards, vandalism & theft; Safety & Security reported Programmes aimed to build capacity amongst the indigent people and should it not be done, these people will even become more	Office (Commissioner Street) Programme (whole of MCLM)	35	To request for adequate security (see info below) & rapid maintenance & repair programme in place with adequate resources	Limited security provided by Department Public Safety; Ongoing programmes as per annual schedule	Normal operating budget / financial implication unknown

vulnerable					
Children Programmes, such as the Children Festival & Crèches, are supported by Government and in line with the Constitution However, transport to and from venues and supervision of children could result in liabilities to MCLM should proper procedure (indemnity forms) not be signed. Staff involved have limited OHS & EMS training	Whole of MCLM & ECD Centres	Impact = 30 Probability = 40 RV = 75%	Stricter enforcement of Indemnity Forms; Involvement of Public Safety, Health, SAPS during plenary meetings & events; Planning of Safety workshops for children & parents; Provision of telephones to report EMS immediately	To be negotiated with management; Ongoing programmes as per annual schedule	Normal operating budget / financial implication unknown
Youth Programmes are supported by Government and in line with the Constitution and aimed to build capacity amongst the youth; Unemployment, substance abuse & crime are frequently observed in this group and often leads to violence as a result of high unemployment	Whole of MCLM	Impact = 35 Probability = 40 RV = 75%	Eradicate poverty by creation of employment opportunities; To provide life & technical skills Financially stable and empowered youth would reduce vulnerability, violence & crime	Training of rural youth in peer counselling by Lifeline; Liaison with CYD and Umsambru with regard to funding for training	Normal operating budget / financial implication unknown
Woman Programmes are supported by Government and in line with the Constitution and aimed to build capacity amongst woman. Unemployment, substance abuse & crime are frequently observed in this group and often leads to violence as a result of high unemployment	Whole of MCLM	Impact = 35 Probability = 40 RV = 75%	To prevent woman abuse by involving them in self-defence training; Establishment of self-defence clubs; Involving woman in economic empowerment programmes	To be negotiated with management - Self-defence training Ongoing programmes as per annual schedule (e.g. 16 Days activism against woman & Child abuse) Liaise with Economic institution for woman	Normal operating budget / financial implication unknown
Programmes for the Aged are supported by Government and in line with the Constitution and aimed to build capacity amongst the aged. Unemployment, abuse, health associated risks (due to malnutrition) are frequently observed in this group	Whole of MCLM	Impact = 25 Probability = 40 RV = 65%	Propose to establish Luncheon Clubs all over mcm for the aged; Training on OH & EMS; Availing food	Aged are involved in limited Luncheon Clubs for social liaison & skills development; In the process of purchasing sewing, candle making & construction equipment Liaise with Age-in-Action to provide food	Normal operating budget / financial implication unknown

RAND WEST LOCAL MUNICIPALITY – RISK & VULNERABILITY ASSESSMENT (RANDFONTEIN)

DISASTER MANAGEMENT PLAN

PURPOSE OF THE PLAN

To enhance the capacity of the Rand West Local Municipality (Randfontein) to prevent and to deal with disasters and to avoid developments which are subject to high risk of disasters.

SUMMARY STATEMENT

A disaster is seen as a progressive or sudden, widespread or localized, natural or human-caused occurrence which a) causes and threatens to cause injury or disease, damage to property, infrastructure or the environment or disruption of the life of a community and is of a magnitude that exceeds the ability of those affected to cope with its effects using only their own resources.

The emphasis is not MAGNITUDE calculated in terms of numbers or monetary value, but on capacity or ability to cope whereas “COPE” refers to the ability to respond and to recover and/or rehabilitate.

In order to manage disasters it is the intention to have a process of continuous and integrated multi-sectoral, multi-disciplinary planning and implementation of measures aimed at PREVENTING OR REDUCING the risk of disasters, mitigating the severity of consequences of disasters, emergency preparedness, a rapid and effective response and post disaster recovery and rehabilitation.

It is very important to note that disaster management is not limited to post disaster response (reactive plans) as so generally argued, but that it is a process of planning and implementation of measurers involving pro-active and reactive responsibilities.

The reactive plan of the Rand West Local Municipality is in use and is being managed by the West Rand District Municipality: Public Safety Department.

For the purpose of this document (Pro-active disaster management plan) types of disasters and communities at risk were identified and prevention strategies and mitigation strategies were proposed for each likely type of disaster.

Contingency plans and emergency plans, which ensure maximum emergency preparedness, will be drafted and finalized in co-operation with all stakeholders. For the interim, the existing reactive plan is in place to deal with possible disasters.

The Executive Manager Public Safety/Regional Support was identified as the officer in charge of disaster management. This nomination was confirmed by the Council of Rand West Local Municipality

Types of risks and communities at risk

Potential risks in the Rand West area were categorized as Health risks; Transport risks; Essential service risks; Resource capacity failure risk; Fire risks; Natural disaster risks; urban terrorism risks and Civil strife risks. Risk value was calculated by determining the impact + probability = risk value.

The following specific risks in terms of the aforementioned categories were identified together with anticipated communities to be affected:

A.

Health Risk	Affected communities	Risk value	Adjusted to new value
Cholera	Informal settlements Rural areas	70%	**70%**
Rabies	Greater Randfontein	30%	**30%**
HIV/Aids	Greater Randfontein	90%	**90%**
Meningitis	Greater Randfontein	40%	**40%**
Flu mutations	Greater Randfontein	70%	**70%**
Tuberculosis	Greater Randfontein	95%	**95%**
Malnutrition	Rural areas	30%	**30%**
STI's	Greater Randfontein	70%	**70%**
Pollution: Sinusitis	Greater Randfontein	50%	**65%**
Biological warfare	Greater Randfontein	60%	**60%**
Bee stings	Greater Randfontein	20%	**20%**
Snake bites	Rural areas	10%	**30%**

HIV/Aids, Cholera, Flu mutations, Tuberculosis, Sexually transmitted infections (STI's) have a risk value of 70% or higher and are thus seen as the 5 health risks in Randfontein.

B.

Transport risk	Affected communities	Risk value	Adjusted to new value
Taxi accidents and the volume of taxis	Mohlakeng, Toekomsrus, Rural areas Informal settlements CBD	50%	**65%**
Bus accidents	School children, Mohlakeng Toekomsrus, Rural areas Informal settlements	20%	**20%**
Train accidents	Mohlakeng, Toekomsrus Rural areas, Informal settlements	20%	**10%**
Aviation	Randfontein Rural areas	10%	**10%**

Motor vehicles & cyclists	Greater Randfontein	40%	**50%**
Pedestrians	Greater Randfontein	40%	**70%**
Tankers (hazardous materials)	Randfontein *More tankers are driving Through Randfontein*	50%	**60%**

Tanker accidents are a potential risk in Randfontein and thus the only potential anticipated transport risk.

C.

Essential Services And Support Infrastructure	Affected communities	Risk value	Adjusted to new value
Sewerage	Greater Randfontein Infrastructure *No proper sewerage system*	40%	**70%**
Electricity	Greater Randfontein *Load shedding* *Substations to be replaced* *Grown population*	20%	**80%**
Roads and street maintenance	Greater Randfontein *State of roads, i.e. Potholes*	80%	**100%**
Water	Greater Randfontein *Sufficient water is provided* *Not enough dams* *Jabulani settlement* *Pollution of under-ground water*	10%	**50%**
Housing	Greater Randfontein *RDP houses, but not all areas* *People are getting less pay* *Nat. Credit Act limit purchases of Bond houses*	75%	**90%**
Hospitals	Greater Randfontein	55%	**60%**
Clinics	Greater Randfontein	85%	**80%**
SA Police Services	Greater Randfontein	40%	**90%**
Emergency Services	Greater Randfontein	70%	**90%**
Security Companies	Greater Randfontein	30%	**50%**

Essential Services And Support Infrastructure	Affected communities	Risk value	Adjusted to new value
Social Services	Greater Randfontein	60%	**80%**
Churches	Greater Randfontein	50%	**50%**
Schools	Greater Randfontein	55%	**75%**
Trauma Counselling	Greater Randfontein	60%	**80%**
NGO's	Greater Randfontein	60%	**70%**
Sports and recreation	Greater Randfontein	70%	**90%**

System failures as far as **Sewerage**, **Electricity, Water and Housing** supply are concerned as well as **Clinic Services** and **Emergency Services** were identified as the 6 Essential Services and support infrastructure risks in Randfontein.

D.

Fire	Affected Communities	Risk Value	Adjusted to new value
Domestic fires	Greater Randfontein	80%	**70%**
Industrial fires	Industrial area Agricultural holdings	60%	**60%**
Hazardous materials	Greater Randfontein	90%	**90%**
Veld fires	Rural areas Informal settlements	80%	**80%**
Explosions	Greater Randfontein	60%	**60%**

Domestic, hazardous materials and veld fires are seen as the 3 high-risk areas in Randfontein as far as fires are concerned.

E.

Natural Disasters	Affected Communities	Risk Value	Adjusted to new value
Urban flooding	Toekomsrus, Mohlakeng Nhlapo, Nconyela, Sandlile, Thababusu, Moshosuo, Vlakazi Khama, Ntuli Streets, Greater Randfontein	50%	**70%**
Rural flooding	Rural areas, Informal settlement	30%	**60%**
Winds	Greater Randfontein	70%	**70%**
Tornadoes	Greater Randfontein	60%	**60%**
Hail Storms	Greater Randfontein	80%	**80%**
Draught	Greater Randfontein	50%	**50%**
Sink holes	Zenzele, Mohlakeng, Rural areas Toekomsrus, Greater Randfontein	60%	**60%**
Heat Waves	Greater Randfontein		**80%**

Urban and rural flooding, winds and hailstorms are the 4 high natural risk areas in Randfontein.

F.

Urban Terrorism	Affected Communities	Risk Value	Adjusted to new value
Sabotage	Greater Randfontein	55%	**50%**
Bomb explosions	Greater Randfontein ATM's	45%	**50%**
Violent attacks	Greater Randfontein	60%	**80%**
Looting	Greater Randfontein	80%	**50%**
Taxi violence	Greater Randfontein, Mohlakeng Toekomsrus, Informal settlement Rural areas	50%	**30%**

Looting and violent attacks were identified as possible risks for the Randfontein area.

G.

Civil Strife	Affected Communities	Risk Value	Adjusted to new value
Rival group differences	Greater Randfontein	40%	**30%**
Labour unrest/strikes	Greater Randfontein	40%	**30%**
Civil disobedience	Greater Randfontein By-laws not obeyed, Poor service delivery	50%	**60%**
Religious extremism	Grater Randfontein	50%	**20%**
Gang fights	Toekomsrus(reduced) Zenzele and Randgate Taverns and pubs	50%	**40%**
Political unrest	Greater Randfontein Poor service delivery	35%	**35%**
Racial conflict	Greater Randfontein	35%	**45%**
Hostage dramas and mass murders	Greater Randfontein	25%	**10%**

No area within the Civil Strive category is seen as a major risk for the Randfontein communities.

H.

Other Risks	Affected Communities	Risk Value	Adjusted to new value
Rapid urbanization	Greater Randfontein	60%	**80%**
Vandalism: Electricity boxes, water & tombstones	Greater Randfontein Electricity- cable theft	70%	**95%**
Sustaining of development	Greater Randfontein	75%	**80%**
Crime	Greater Randfontein *Stats have decreased (people are not reporting crimes) SAPS understaffed and lack of resources*	90%	**90%**
Failure of Justice System	Greater Randfontein	60%	**90%**
Poverty	Greater Randfontein	75%	**90%**
Unemployment	Greater Randfontein	75%	**90%**

Sustaining of development, Crime, Poverty and unemployment are other risks identified.

Summary:

The following areas are thus risks for Randfontein for which prevention and militating strategies were developed.

Health risks

- Cholera
- HIV/Aids
- Flu mutations
- Tuberculosis
- Sexually Transmitted Infections

Transport

- Taxi Accidents
- Tanker (Hazardous materials transport)

Essential Services

- Sewerage System
- Electricity Supply
- Water Supply
- Housing
- Clinics
- Emergency Services

Resource Capture Failure

- Inadequate service supply
- Excessive service demands
- Capacity overload

- Capacity eroding

Fire

- Domestic fires
- Hazardous materials
- Veld fires

Normal Disasters

- Urban flooding
- Rural flooding
- Winds
- Hail storms

Urban terrorism

- Looting

Civil Strive

- None

Other Risks

- Damage to Electrical boxes
- Sustaining of development
- Revenue collection
- Crime
- Poverty
- Economic instability / unemployment

PREVENTION AND MITIGATING STRATEGIES

Risk		Mitigating Strategy	Time frame	Estimated budget
1.	Cholera	Regular water samples Educational programmes (E.HO) Liaise with District Municipality Engage NGO's Interim Ward Councillors	On going	No specific budget. Province to supply when required
2.	HIV/Aids	See HIV/Aids strategic plan PMTCT T VCT programmes started	On going	Provincial budget for PMTCT + V.C.T. programmes R135 00 for HIV/AIDS Strategic Plan from District Municipal.

Risk		Mitigating Strategy	Time frame	Estimated budget
3.	Flu mutations	Liaise with Provincial Government for patients at risk Educational programme See also HIV/Aids strategic plan & Tuberculosis plan	On going	Budget for flu vaccines from Province – amount not known – receive only the vaccines.
4.	Tuberculosis	Flu immunisation Educational programme DOTS programme Follow-up Tracing of defaulters Appoint TB co-ordinator (Province) Identify imported cases	Annually On going On going Annual evaluation On going On going	See flu mutations R10 000-00 pa Provincial funding - - Provincial co-ordinator has been appointed.
5.	Sexually Transmitted infections	Educational programmes Co-ordination with Tshwarangano (NGO) Liaise with mines Increased distribution of condoms (male & female)	Ongoing Ongoing Ongoing	Department of Health Provincial budget
6.	Taxi Accidents	Road worthiness law enforcement strategy Overload control Passenger control Illegal taxi control (permits)	Ongoing	R10 000 pa
7.	Tanker Accidents (Transport hazardous materials)	See Hazmat Awareness programme of District Municipality Pre-planned routes to be followed Policing by Traffic section e.g. PrDP's to be checked K11 to be finalised	Ongoing Ongoing	WRDM External funding to be obtained
8.	Sewerage System	Annual maintenance plan developed Involve NGO's & Ward Councillors Obtain external funding	Ongoing Ongoing Ongoing	In the process of being calculated R15 000 000
9.	Electricity Supply	Annual maintenance plan developed Upgrading of Electrical Network	Ongoing Ongoing	R160 000 pa R2 300 000
10.	Water Supply	Annual maintenance plan developed	Ongoing	R 160 000

Risk		Mitigating Strategy	Time frame	Estimated budget
11.	Housing	Building regulations to be adhered to By laws to be enforced through appointment of 4 building inspectors Provide alternative accommodation in emergencies	Ongoing	R6 000 000 pa
12.	Clinics	Funds obtained for extension and upgrading of SAPS and Ya Rona Clinic – completed. Appointments of staff according to organogram 8 nurses have been appointed. Clinics container for Badirile & Zenzele obtained (operating) Extension of hours not possible with current personnel structure	Ongoing Ongoing Ongoing	Ya-Rona R 1.2 m SAPS R 300 000 According to organogram Donation from the Gift of the fivers foundation
13.	Emergency Services	See WRDM Emergency Operations Overview & Social Vulnerability Plan		
14.	Inadequate Service supply	See Environmental Plan Sewerage Electricity Water Housing	Ongoing	R8 000 000
15.	Excessive Service Demands	See Housing & Development Plan & Sewerage Electricity Water Housing		
16.	Capacity Overload	See Sewerage Electricity Water Housing		R10 000 000
17.	Capacity eroding	See Sewerage Electricity Water Housing		
18.	Domestic fires	See West Rand District Municipality Emergency Operations Overview & Social Vulnerability Plan		
19.	Hazardous materials	See West Rand District Municipality Emergency Operations Overview & Social Vulnerability Plan		

Risk		Mitigating Strategy	Time frame	Estimated budget
20.	Veld fires	See West Rand District Municipality Emergency Operations Overview & Social Vulnerability Plan		
21.	Urban flooding	Annual storm water maintenance plan Obtain funding for storm water network Annual road maintenance plan	Ongoing Ongoing Ongoing	R160 000-00 pa R160 000-00 pa
22.	Rural flooding	See Urban flooding	Ongoing	
23.	Winds/Rain	Building regulations to be adhered to Tree planting Educational programmes Training: First Aid & disaster management	Ongoing Ongoing Ongoing Ongoing	R100 000-00 pa R50 000-00 pa R20 000-00 pa
24.	Hail storms	Building regulations to be adhered to Tree planting Educational programmes Training: First Aid & disaster management	Ongoing Ongoing Ongoing Ongoing	
25.	Looting	Liaise with Judicial System Liaison with church groups Security measurers Liaise with South African Police Services to develop a crime prevention programme Educational programmes Establishment of CPF's See also West Rand District Municipality's Crime Prevention Plan	Ongoing Ongoing Ongoing Ongoing Ongoing	
26.	Damage to Electrical substations boxes	Educational programs Alarm Systems Cut-off systems to be investigated Award / incentive scheme	Ongoing Ongoing Done Done	R60 000-00 pa R50 000-00 pa
27.	Sustaining of development	See Local Economic Development plan		
28.	Revenue Collection	Credit control policy to be adopted Outsourcing (See also financial plan)	2007 – 2008 Done	

Risk		Mitigating Strategy	Time frame	Estimated budget
29.	Crime	South African Police Services Liaise CPF structures By laws enforcement See also the West Rand District Municipality's Crime Prevention Plan Patrol units	Ongoing	
30.	Poverty	See poverty alleviation /gender equity plan		
31.	Economic instability / unemployment	See Poverty Alleviation Gender Equity Plan		

RAND WEST LOCAL MUNICIPALITY CONT. (WESTONARIA)

Local Municipality: Rand West Local Municipality					
Department: Community Services			Unit: Health		
Assessment Date: February					
Assessment description				Prevention Mitigation	
Risk Category: Food Poisoning					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Collapsing of water reticulation network – Improved maintenance in order to sustain service demands	Greater Westonaria	50%		Scheduled maintenance program. Appointment of Civil Engineer – Tinus Collins	Not yet approved
Collapsing of electricity network – improved maintenance in order to sustain service demands	Greater Westonaria	50%		Frazer – Network, Street light poles and transformer detector	Not yet approved
Road surface decline – improved maintenance in order to sustain service demands	Greater Westonaria	60%		Appointment Road & Stormwater. Resurfacing, sidewalk maintenance & planning	Not yet approved
Sewerage system failure – service level demands exceeding service supply	Greater Westonaria	35%		Job Bekkersdal formal & informal network. Degrittere ump solid meter	Not yet approved
Revenue generation & colletion – service level demands exceeding income generated	Greater Westonaria	Not defined		Not yet available	Not yet approved
Parks & cemetery	Greater Westonaria	40%		Nobusuku Mali Manager mount Parks Cemetery infr. Upgrading Bekkersdal cemetery	Not yet approved
Risk Category: Loss of Life – Caused by Health Risks					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Lack of access to potable water & sanitation	Water Works	50%		Infrastructure of water & toilets in progress	Urban Renewal Project Budget
Lack of personal hygiene Congested living conditions in informal settlements	Informal Bekkersdal	60%		Relocation infrastructures in progress	
HIV/AIDS	Greater Westonaria			Public Awareness, Care for children, Home base Care	
Communicable diseases, STI, TB, Cholera, Measels	Greater Westonaria			Health promotion administer prophylactic treatment	Provincial function
Risk Category: Loss of Life – Caused by Fire					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Uncontrolled fires in informal settlements	Bekkersdal	50%		De-densifying of informal settlements	Not yet approved
Lack of awareness	Greater Westonaria	60%		Accelerated public awareness campaigns	Not yet approved
Substandard building practices	Greater Westonaria	65%		Development of minimum building standards for informal settlements & enforcing of building standards	Not yet approved
Insufficient fire safety planning	Greater Westonaria	50%		Education on fire prevention. Compliance with Fire Prevention Act	Not yet approved
Runaway veldt fires (Wild fires)	Greater Westonaria	70%		Establishment of FPA's	Not yet approved
Risk Category: Loss of Life & Property – Caused by Flooding					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Insufficient storm water drainage in informal settlements	Bekkersdal	50%		Upgrading storm water channel	Not yet approved
Lack of awareness	Greater Westoanaria	40%		Zivuseni program, cleaning campaign – Mr Brakel	Not yet approved

Substandard building practices	Greater Westonaria			Not yet available	Not yet approved
Insufficient storm water drainage systems in urban areas as result of created urban runoff	Greater Westonaria			Cleaning of channels, pressure flow control	Not yet approved
Flooding of rivers and streams				Not yet available	Not yet approved
Dam inundation				Not yet available	Not yet approved
Risk Category: Loss of Life caused by Accidents					
Risk Description	**Risk Area**	**% Risk Value**	**Prevention Mitigation Cost**	**Project completed / approved**	**Budget approved**
Lack of law enforcement		50%		Employment of Law Enforcement Officers	Not yet approved
Lack of road maintenance		50%		Law Enforcement Road Signs are vandalised. Local Police Forums to monitor	Not yet approved
Lack of road safety culture			Provincial Responsibility		
High level of dependence on public transport		70%		Roadworthy public Transport Plan Vehicles / Law Enforcement	Not yet approved

MERAFONG LOCAL MUNICIPALITY – RISK & VULNERABILITY ASSESSMENT (MERAFONG)

4.1.1 Objective

To conduct disaster risk assessments that are consistent with the national guidelines and the national standard for assessing priority risks and that risk assessments are progressively integrated into developmental planning.

4.1.2 Disaster risk

Disaster risk refers to the probability that there will be a harmful impact of some kind due to the interaction between natural or other *hazards* and conditions of *vulnerability*. This implies that both hazards and vulnerabilities have to be thoroughly assessed in order to compile a risk profile.

4.1.3 Disaster risk assessment

Risk assessment is the first step in planning an effective risk reduction program. It examines the likelihood and outcomes of expected hazard events, including the vulnerability conditions that increase the chances of loss.

All municipal departments in the MRCLM must carry out disaster risk assessments for priority risks relevant to their functional area and where possible, these assessments should be undertaken interdepartmentally to avoid duplication of efforts and to ensure uniformity of findings.

Disaster risk assessment planning requires identification of key stakeholders, as well as consultation with them about the design and/or implementation of the assessment and the interpretation of the findings.

Departments and other municipal entities in the MRCLM must execute systematic risk assessments in the following instances:

- Prior to the implementation of any municipal disaster risk reduction, preparedness or recovery program;
- As an integral component of the planning phase for large-scale housing, infrastructure or commercial/industrial developments of significance in the municipality;
- As an integral component of the planning phase for significant initiatives that affect the natural environment in the municipality;

- When social, economic, infrastructural, environmental, climatic or other indicators suggest changing patterns of risk that increase the likelihood of significant disaster impacts in the municipality; and
- All proposed risk assessments and related studies must be reviewed and approved by the MRCLM DM prior to implementation to ensure consistency in approach.

4.1.4 Situations requiring risk assessments

Risk assessments must be undertaken to:

- ensure that development initiatives maximize their vulnerability reduction outcomes; and
- anticipate and plan for known risks or disasters to prevent losses and limit endangering impacts.

4.1.5 Maximising vulnerability reduction outcomes

With respect to the implementation of the Act, a risk assessment must be undertaken when one or more of the vulnerability reduction criteria (reflected in the table below) are considered priorities in any project or programme initiated by the MRCLM.

KEY VULNERABILITY CRITERIA	EXAMPLES OF WHERE RISK ASSESSMENTS MUST BE DONE
Increased sustainability of a development project or programme to support vulnerable households and communities.	As part of the planning for an infrastructural development, for example, assessing the likelihood of extreme weather, flooding, subsidence and other threats damaging the structure, so that these can be factored into the construction specifications.
Reduction of potential harmful consequences associated with industrial, commercial or other developments	As part of environmental impact assessments for large-scale developments, including industrial, commercial and other enterprises that may increase disaster risk.
Increased understanding of a rapidly changing risk for improved risk management planning	In a flood-prone area that experiences considerable population growth and is facing increased land erosion.
Increased robustness of development initiatives in poor communities and areas	In an informal settlement characterised by recurrent ‘small ’and ‘medium-size’ disaster losses that undermine assets and livelihoods.
Management of high-risk periods and conditions to ensure service and/or business continuity	Electricity transmission lines and rail infrastructure, as well as health and emergency services, to ensure these essential services do not ‘fail ’under expected high-risk conditions.
Provision of appropriate support for at-risk activities, services, areas, communities and households following an ‘alert ’.	Following a drought warning or cholera alert in rural areas, to identify communities and households most at risk and to focus or target preparedness and response actions.

Table 1: Criteria for risk assessment

4.1.6 Undertaking assessments for specific known risks or disasters

A disaster risk assessment is required at local level to guide risk reduction efforts for specific known risks or disaster events and processes that:

- are of recurrent high and medium magnitude and may require the support and/or intervention of the MRCLM DM;
- occur infrequently or seasonally (for example, veld fires and flooding), have the potential to cause severe loss, and require levels of specialist support not available at local municipality level; and/or
- affect neighbouring districts and have consequences for the MRCLM (for example, unplanned cross-border movements and events that require humanitarian or other relief assistance).

2.1.7 The methodology for conducting a disaster risk assessment for the Merafong City Local Municipality

The design and methodology adopted for conducting a disaster risk assessment for the MRCLM must be consistent with the national guidelines and standard.

The disaster risk assessment must determine the level of risk in the MRCLM by:

- identifying potential hazards and/or threats;
- assessing the conditions of vulnerability that increase the chance of loss for particular elements-at-risk (that is, environmental, human, infrastructural, agricultural, economic and other elements that are exposed to a hazard, and are at risk of loss);
- assessing impact and coping capacity;
- determining the level of risk for different situations and conditions;
- setting priorities for action after prioritising the hazards according to their risk factor; and
- continuously monitoring capabilities, risk maps and risk scenarios.

There are many different methods for carrying out risk assessments. In essence the disaster risk assessment for the MRCLM was based on the following methodology, in future assessments it may however be necessary to deviate, amend or adapt the methodology depending on:

- the type of hazard being assessed;
- the characteristics of the area, infrastructure, service or business concerned;

- the urgency of the assessment; and
- the availability of relevant hazard and vulnerability information.

4.1.7.1 Key research questions

The research aim to establish:

- which hazards are the most prevalent in the MRCLM area;
- the frequency with which a significant event or disaster is likely to occur;
- which areas, communities or households are most at risk;
- which hazards (of certain intensities) are likely to have the most profound impact on the MRCLM;
- what is the probability of the identified hazards impacting on the MRCLM within a given time frame;
- what are the existing conditions of vulnerability and capacity (physical, social, economical and environmental) in the MRCLM area;
- which vulnerabilities could be exploited by the identified hazards (of different intensity);
- what capabilities or resources exist to manage the risk;
- what are the risk priorities of the MRCLM;
- how are vulnerabilities being addressed through the Integrated Development Plan projects and other developmental initiatives;
- what other developmental initiatives are necessary to reduce vulnerability and therefore risk in the MRCLM;
- is the risk becoming progressively greater;
- is the risk undermining development progress in the areas, communities and households it affects and if so, is the management of the risk a development priority; and
- in the areas, communities and households at risk are their any other significant risks.

4.1.7.2 Method of investigation

The research design included qualitative methods, in particular workshops. The most prevalent hazards in the MRCLM, areas at risk to these hazards as well as levels of vulnerability and coping capacity were deliberated on with disaster management staff members of the MRCLM and the WRDM.

In future assessments, a systematic approach must be adopted for the gathering of data which must involve a high level of community participation taking into account local and indigenous knowledge and historical records.

The primary elements of the process comprised of:

- Identification and description of the risk;
- Analysis of the risk; and
- Evaluation of the risk.

4.1.8 Community-based disaster risk assessment

In accordance with the intention of the Act to increase local capacity to minimise the risk and impact of disasters, disaster risk assessment efforts must actively include the participation of vulnerable communities and households, including physically isolated communities and female-headed and child-led households. The information collected using more technically sophisticated methods employed by risk scientists can be significantly enhanced by local and indigenous knowledge relating to disaster management. In addition, the active engagement of special needs groups, such as women, children and the elderly, improves the quality of the assessment findings and increases the likelihood of community ownership in any risk reduction interventions that may follow.

4.1.9 Consolidation and classification of disaster risk information

Hazard and vulnerability assessment findings must be consolidated according to uniform classifications. This facilitates integrated multi-sectoral planning across government departments and with other partners. It also supports risk management co-operation between administrative areas (for example, two or more municipalities) affected by the same risk. In this regard the MRCLM DM must ensure that the following internationally recognised classification of hazards provided by the UN's International Strategy for Disaster Reduction (ISDR) is used.

ORIGIN	PHENOMENA/EXAMPLES
Geological hazards	• Tsunamis (also called tidal waves) • Mass earth movements e.g. landslides, rockslides, rock-falls, liquefaction, submarine slides • Subsidence, surface collapse, geological fault activity
Hydrometeorological hazards	• Floods, debris and mudflows • Tropical cyclones, storm surges, thunder / hailstorms, rain and windstorms, and other severe

	storms • Drought • Desertification • Veldt fires • Heat waves • Sand or dust storms
Biological hazards	• Outbreaks of epidemic diseases • Plant or animal contagion • Extensive infestations
Environmental degradation	• Land degradation; • Deforestation; • Desertification; • Veldt fires; • Loss of biodiversity; • Land, water and air pollution; • Climate change; • Sea level rise; and • Ozone depletion.

Vulnerability must be assessed as social, economic, political, environmental or physical (infrastructural). As vulnerability factors are often the major drivers of disaster risk, rather than external hazard processes, it is critical to identify these during a risk assessment. This provides important insights for developing vulnerability reduction interventions that lower the levels of disaster risk.

4.1.10Key performance indicators

- All municipal organs of state, other municipal entities and other disaster management role players within the MRCLM are aware of the need and obligation to conduct disaster risk assessments;
- The MRCLM DM receives a copy of all relevant assessments;
- All IDP projects which relate to disaster risk are submitted to the MRCLM DM for approval; and
- There is documented evidence of progressive integration of risk assessment into development planning of the departments, organs of state and other role players in IDPs and annual reports submitted to the MRCLM DM.

4.2 Monitoring, updating and disseminating risk information

4.2.1 Objectives

To establish an effective risk monitoring system for priority risks.

4.2.2 Monitoring disaster risks

Just like other risks, disaster risks are not static. They change seasonally and over time. To recognise such changes, and to strategically adjust programmes accordingly, all departments must have monitoring systems in place that are relevant to their specific functional responsibilities. These systems form the basis for sounding timely warnings of, or alerts for, impending threats. They are also essential for monitoring the effectiveness of ongoing risk reduction efforts.

Risk monitoring systems for the MRCLM must involve:

- hazard tracking;
- vulnerability monitoring; and
- disaster event tracking.

4.2.2.1 Hazard tracking

Hazard tracking systems monitor the physical phenomena that can trigger disaster events. They include systems that provide seasonal and early warning information on approaching adverse weather conditions.

4.2.2.2 Vulnerability monitoring

Vulnerability monitoring systems are systems that track the ability of communities, households, critical services and natural environments to resist and withstand external threats. Censuses, regular poverty surveys, nutritional surveys and information collected from health clinics provide important insights into changing social vulnerability patterns in at-risk communities (for example, an increase in the number of child-headed households or elderly adults with dependants). As this information is often routinely collected by government services, special surveys or parallel monitoring initiatives are not usually required to gather it.

These quantitative data must be supported by qualitative information that tracks local capabilities to absorb recurrent shocks and stresses, as well as local capacities to resist and recover from external threats.

4.2.2.3 Disaster event tracking

Disaster event tracking systems monitor changing patterns in disaster risk. Increasing or decreasing frequencies of unclassified disaster incidents are sensitive indicators of changing risk patterns in at-risk areas. For instance, a rising incidence pattern of small and medium-size informal settlement fires may represent an early warning of accumulating risks, which may result in a more serious and destructive fire event. It also signals a call for urgent measures to avert the impending disaster.

Information on small and medium 'undeclared 'events can be found in many different sources, including local newspapers, fire and disaster management reports, and records of Social Services and local NGO's such as the South African Red Cross Society.

4.2.3 Updating the comprehensive disaster risk assessment for the Merafong City Local Municipality

Disaster risk is dynamic. It is driven by a combination of hazard and vulnerability processes, including changing patterns of land-use, infrastructure development /maintenance, urban growth and settlement densification. Similarly, household size and composition, health status and level of livelihood security affect household potential for loss.

Some risks, particularly those triggered by climate processes, must be reviewed seasonally prior to the rainy season or hot summer months. Other risks, such as riverine flood risk, require extensive flood hydrology investigations, and may be undertaken once during a 20-year period. Municipal organs of state and other municipal entities within the MRCLM must seek technical advice from recognised risk specialists to determine the need for updating a comprehensive assessment for a specific risk.

4.2.4 Responsibility for monitoring and updating risk information

The MRCLM DM must ensure that all municipal organs of state, other municipal entities within the MRCLM and other specialist role players with responsibilities for reducing and managing disaster risks have clear mechanisms in place for:

- accessing and updating relevant hazard and vulnerability information on risks specific to their functional areas; and
- making this information available to the MRCLM DM.

In addition the MRCLM DM must:

- establish clear mechanisms for accessing, consolidating and updating relevant hazard, vulnerability and disaster occurrence information from specialist

government and non-governmental partners responsible for monitoring specific risks, including fire, coastal threats, drought and epidemics;

- develop and implement clear mechanisms for disseminating risk assessment and monitoring information for ongoing planning, as well as for managing conditions of heightened risk;
- establish clear procedures for accessing, interpreting and disseminating timely weather information, particularly when this is associated with potentially endangering rapid-onset storm or cyclone processes, hot dry temperatures, strong winds, heavy rainfalls or snow, ice or fog conditions; and
- ensure that the disaster risk information systems are managed by skilled individuals with both information technology capabilities and disaster risk analytic skills.

4.2.5 Key performance indicators

- The MRCLM DM has established and documented clear mechanisms for accessing, consolidating and updating relevant hazard, vulnerability and disaster occurrence information from partners responsible for monitoring specific risks, including fire, drought and epidemics;
- The MRCLM DM has established and documented clear mechanisms for disseminating Hazard Risk and Vulnerability (HRV) assessment and monitoring information for ongoing planning, as well as for managing conditions of heightened risk; and
- The MRCLM DM has established and documented clear procedures for accessing, interpreting and disseminating timely weather information, particularly when this is associated with potentially endangering rapid-onset storm or cyclone processes, hot dry temperatures, strong winds, heavy rainfalls or snow, ice, hail or fog conditions.

CHAPTER 10

PERFORMANCE MANAGEMENT SYSTEM

The quarterly performance of the Department Public Safety is based on (a) the 5 Year Strategic Plan of the WRDM and (b) the Service Delivery & Budget Implementation Plan of the department. The SDBIP of the department is a summary of key performance indicators relevant to its performance.

SDBIP: Public Safety											
IDP Priority: Service Delivery											
Program/Projects: Disaster Management											
Sub Activities	Unit of measure	Responsible	Annual target	Qtr ending 30 Sept		Qtr Ending 31 Dec		Qtr Ending 31 March		Qtr ending 30 June	
				Proj	Act	Proj	Act	Proj	Act	Proj	Act
Revise & develop the District Disaster Management Plan for inclusion in IDP based on risk & vulnerability assessment	Complete revised reactive disaster management plan for each of 4 local municipalities	Executive Manager: Public Safety						100%			
	Ensure functioning of MMMTT's by having a minimum of 1 meeting per quarter per local municipality		Minimum of 3 meetings per quarter	Minimum of 3 meetings per quarter		Minimum of 3 meetings per quarter		Minimum of 3 meetings per quarter			
	Compete revision of 3 municipal risk & vulnerability assessment and drafting of 3 municipal risk reduction programs/ strategies		3 completed revised risk & vulnerability assessment			50%		100%			
	Compile composite risk profile for the district and submit to the Section 80 Committee and MM's Forum		Submission of completed composite risk profile to Section 80 Committee & MM;s forum			100%					
	Submit quarterly progress/ activity reports		4 quarterly reports	1 quarterly report		1 quarterly report		1 quarterly report		1 quarterly report	
Strengthen capacity of Fire protection associations	Complete establishment of FPAs for all areas within the district & secure registration	Executive Manager: Public Safety	9 FPAs established and registered	8 FPAs registered		9 FPAs registered		9 FPAs registered		Umbrella body (WRDM) registered	
	Train volunteers within FPAs		240 volunteers to be trained	60 Volunteers trained		60 Volunteers trained		60 Volunteers trained		60 Volunteers trained	
Improve public Awareness and capacity	Provide ongoing preparedness awareness and			30 preparedness engagements per quarter		30 preparedness engagements per quarter		30 preparedness engagements per quarter		30 preparedness engagements per quarter	

(PIER)	capacity										
SDBIP: Public Safety											
IDP Priority: Service Delivery											
Program/Projects: Emergency Operations Centre											
Sub Activities	Unit of measure	Responsible	Annual target	Qtr ending 30 Sept		Qtr Ending 31 Dec		Qtr Ending 31 March		Qtr ending 30 June	
				Proj	Act	Proj	Act	Proj	Act	Proj	Act
Effective and efficient multi-sectoral coordination and joint command & control as shared service in the district	Incoming distress calls to be attended to within 10 – 15 seconds	Executive Manager: Public Safety	95% in-time attendance	95% in-time attendance		95% in-time attendance		95% in-time attendance %		95% in-time attendance	
	Average transaction time of 1 minute		80% transaction time or less than 1 minute	80% transaction time or less than 1 minute		80% transaction time or less than 1 minute		80% transaction time or less than 1 minute		80% transaction time or less than 1 minute	
	Calls not answered the first time to be restricted to less than 5% of incoming calls		Calls not answered the first time to be restricted to less than 5% of incoming calls	Calls not answered the first time to be restricted to less than 5% of incoming calls		Calls not answered the first time to be restricted to less than 5% of incoming calls		Calls not answered the first time to be restricted to less than 5% of incoming calls		Calls not answered the first time to be restricted to less than 5% of incoming calls	
	Ensure maximum system up-time		98% systems up-time	98% systems up-time		98% systems up-time		98% systems up-time		98% systems up-time	

SDBIP: Public Safety										
IDP Priority: Service Delivery										
Program/Projects: Emergency Services										
Sub Activities	Unit of measure	Responsible	Annual target	Qtr ending 30 Sept		Qtr Ending 31 Dec		Qtr Ending 31 March		Qtr ending 30 June	
				Proj	Act	Proj	Act	Proj	Act	Proj	Act
Maintain emergency medical service standards	Respond to 80% of Priority 1 calls within 15 minutes	Executive Manager: Public Safety	Respond to 80% of P1 calls within 15 minutes	80%		80%		80%		80%	
	Maintain quality care by providing refresher training to 60% of all operational staff members		Provide refresher training to 60% of operational staff members			30%				30%	
	Improve public image of emergency medical care by conducting regular in loco inspections		Conduct 36 in loco inspections per annum	Minimum of 9 in loco inspections		Minimum of 9 in loco inspections		Minimum of 9 in loco inspections		Minimum of 9 in loco inspections	
	Ensure proficient secondary medical care being provided to trauma patients by regular meeting with hospitals (Netcare Krugersdorp, Robinson, Leratong & Dr Yusuf Dadoo)		Minimum of 1 meeting per hospital per quarter	Minimum of 4 meetings per quarter		Minimum of 4 meetings per quarter		Minimum of 4 meetings per quarter		Minimum of 4 meetings per quarter	
Maintain fire & rescue service standard	Respond to 80% of structure fires within 15 minutes	Executive Manager: Public Safety	Respond to 80% of structure fires within 15 minutes	80%		80%		80%		80%	
	Contain fire damage to 10% of risk value		Fire damage contained to 10% or less of risk value	10% of risk value		10% of risk value		10% of risk value		10% of risk value	
	Respond to 80% of rescue calls within 15 minutes		Respond to 80% of rescue calls within 15 minutes	80%		80%		80		80%	
	Strengthen and maintain proficiency levels by providing refresher training to 60% of all operational staff		Provide refresher training to 60% of operational staff members					30%		30%	
Provide effective Fire Risk management	Conducting of regular fire risk management inspections		Conducting of regular fire risk management inspections as reflected in Quarter reports	Inspection reports included into quarterly reports		Inspection reports included into quarterly reports		Inspection reports included into quarterly reports		Inspection reports included into quarterly reports	

SDBIP: Public Safety										
IDP Priority: Service Delivery										
Program/Projects: Community Safety										
Sub Activities	Unit of measure	Responsible	Annual target	Qtr ending 30 Sept		Qtr Ending 31 Dec		Qtr Ending 31 March		Qtr ending 30 June	
				Proj	Act	Proj	Act	Proj	Act	Proj	Act
Implement district safety plan	Formulation and implementation of local municipal safety plans	Executive Manager: Public Safety	3 adopted local municipal safety plans	2 adopted local safety plans		1 adopted local safety plan					
	Effective functioning of CSF EXCO		Minimum of 4 CSF EXCO meetings	1 CSF EXCO meeting per quarter		1 CSF EXCO meeting per quarter		1 CSF EXCO meeting per quarter		1 CSF EXCO meeting per quarter	
	Submission of quarterly progress & activity reports to Section 80 Committee		4 Quarterly reports submitted to Section 80 Committee	1 report		1 report		1 report		1 report	
	Effective functioning of DLECC and promotion of shared services		Minimum of 1 DLECC meeting	1 meeting per quarter		1 meeting per quarter		1 meeting per quarter		1 meeting per quarter	
	Effective functioning of CPFs in the district		Attend CPF meetings and report on functioning to Section 80 Committee & Dept. of Community Safety	Quarterly reports to Section 80		Quarterly reports to Section 80		Quarterly reports to Section 80		Quarterly reports to Section 80	
	Conduct annual road safety audit & capacity assessment		Completed road safety audit					100%			

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