OR TAMBO
DISTRICT MUNICIPALITY

DISASTER MANAGEMENT PLAN

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It should, accordingly, not be assumed that all possible and applicable findings, information and/or measures are included in this report.

ACRONYMS

Acronym	Explanation
CBO	Community Based Organisation
COG	Department of Cooperative Governance
COSCPs	Coastal Oil Spill Contingency Plans
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DM	District Municipality
DMA	District Management Area
DRMC	Disaster Risk Management Centre
DMP	Disaster Management Plan
DOC	Disaster Operations Centre
DRA	Disaster Risk Assessment
DWA	Department of Water Affairs
ECP	Eastern Cape Province
ECPDMC	Eastern Cape Provincial Disaster Management Centre
E.g.	Example
Etc.	Etcetera
EMP	Environmental Management Plan
EWS	Early Warning System
FCP	Forward Command Post
IDP	Integrated Development Plan
JOC	Joint Operations Centre
LA	Local Authority
LM	Local Municipality
MDGs	Millennium Development Goals
MFMA	Municipal Finance Management Act
MMC	Member of the Mayoral Committee
MSA	Municipal Systems Act
NDMC	National Disaster Management Centre
NDMF	Policy Framework for Disaster Management in South Africa
NGO	Non-Governmental Organisation
ORTDM	O.R. Tambo District Municipality
PDMC	Provincial Disaster Management Centre
Prov	Province
PSC	Project Steering Committee
SADC	South Africa Development Community
SANDF	South African National Defence Force
SANDMC	South African National Disaster Management Centre
SANDMF	South African National Disaster Management Framework
SANS	South African National Standard
SAPS	South African Police Service
SAWS	South African Weather Service
SDF	Spatial Development Framework
SOPs	Standard Operating Procedures

TERMINOLOGY

The following terminology[1] is utilised in this document:

Term	Definition
Capacity	The combination of all strengths, attributes and resources available within a community, society or organisation that can be used to achieve agreed goals.
Contingency Planning	A management process that analyses specific potential events or emerging situations that may threaten society or the environment and establishes arrangements to enable timely, effective and appropriate responses to such events and situations.
Development planning	An integrated, multi-sectoral process through which governmental institutions streamline social, economic and spatial growth.
Disaster	A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.
Disaster Risk	The potential disaster losses, in lives, health, status, livelihoods, assets and services, which could occur to a particular community or society over some specified future time period.
Disaster Management	The systematic process of using administrative directives, organisations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster. This term is an extension of the more general term 'Risk Management' to address the specific issue of disaster risks. Disaster Risk Management aims to avoid, lessen or transfer the adverse effects of hazards through activities and measures for prevention, mitigation and preparedness.
Disaster Risk Reduction	The conceptual framework of elements considered with the possibilities to minimise vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.
Disaster Risk Reduction Plan	A document prepared by an authority, sector, organisation or enterprise that sets out goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives.
Early Warning Systems	The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss by reducing or mitigating disaster risk. It incorporates a system of data collection and analysis that monitors people's well-being (including security), in order to provide timely notice when an emergency threatens, and thus to elicit an appropriate response. An Early Warning System is the integration of four main elements: Risk Knowledge; Monitoring and Predicting; Disseminating Information; and Response. Failure of any part of the system will imply failure of the whole system.
Hazard	A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydro meteorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterised by its location, intensity, frequency and probability
Impact	The terms Primary Impact and Secondary Impact are used to describe the different causes and scales of potential impacts from a hazard event:

[1] **Department: Provincial and Local Government.** 2007. *Disaster Management Act 57 of 2002*. Pietermaritzburg: Interpak Books.

	Primary Impacts are also called direct impacts. Secondary Impacts are often referred to as indirect or induced impacts. This does not imply that Secondary Impacts are of secondary importance ~ in many cases the effects on biodiversity and the environment from secondary impacts are much more significant than those of primary impacts
Mitigation	The lessening or limitation of the adverse impacts of hazards and related disasters.
Preparedness	The knowledge and capacities developed by governments, professional response and recovery organisations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions. These activities and measures include the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.
Prevention	The outright avoidance of adverse impacts of hazards and related disasters.
Recovery	The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.
Residual Risk	The risk that remains in unmanaged form, even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained.
Resilience	The capacity of a system, community or society potentially exposed to hazards to adapt by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organising itself to increase this capacity for learning from past disasters for better future protection and to improve disaster risk reduction measures.
Response	The provision of emergency services and public assistance during or immediately after a disaster in order to: save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected. These measures can be of immediate, short-term or protracted duration.
Risk	The combination of the probability of an event and its negative consequences.
Risk Assessment	A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environments on which they depend.
Risk Management	The systematic approach and practice of managing uncertainty to minimise potential harm and loss.
Vulnerability	The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. Conditions of vulnerability and susceptibility to the impact of hazards are determined by physical, social, economic and environmental factors or processes

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1 Executive Summary

The O.R. Tambo District Municipality (ORTDM), in terms of the Disaster Management Act, 2002 (Act No. 57 of 2002), is required to compile a municipal Disaster Management plan. This document fulfils the legal requirement as set out in the Disaster Management Act and the Policy Framework for Disaster Management in South Africa and confirms the arrangements for managing disaster risk and for preparing for- and responding to disasters within the ORTDM.

The development of the ORTDM Disaster Management Plan has culminated into six main chapters which are arranged as follows:

Chapter 1 deals with the introduction and provides a background to the project.

Chapter 2 describes the legal requirements that inform the Disaster Risk Management responsibilities of various role-players and stakeholders and provides insight into current compliance with the relevant legislation, primarily the Disaster Management Act. The structure of the Disaster Management Plan is also explained and linked to the Key Performance Areas and Enablers of the Policy Framework for Disaster Management in South Africa, also known as the National Disaster Management Framework (NDMF).

Chapter 3 addresses requirements for the establishment of integrated institutional capacity for Disaster Risk Management within the O.R. Tambo District. The plan outlines the institutional capacity required for effective Disaster Management which includes the establishment of a District Disaster Risk Management Advisory Forum, Technical Committees and a Disaster Risk Management Centre which should incorporate a 24-hour emergency control and communications facility.

In Chapter 4 the risk profile of the District is provided based on the risk assessment conducted between October and December 2013 in all five local municipalities of ORTDM, supplemented by the ORTDM DRA conducted by SRK Consulting. The high risks identified within the District include: human disease, hydro-meteorological hazards such as severe storms, drought and flooding, fire hazards, civil unrest (crime), road transportation hazards and infrastructure/service delivery failure.

Chapter 5 deals with Disaster Risk Reduction Planning to reduce those risks identified in the previous chapter. Disaster Risk Reduction project proposals have been formulated for priority risks and a risk reduction process is described in the beginning of the chapter. These proposals will remain guidelines which will need to be adapted to the specific prevailing circumstances when they are put into use.

In Chapter 6 response and recovery issues are highlighted. Preparedness plans for priority risks are introduced and the preparedness capacity of the District is described which leads to the identification of certain gaps and recommendations. Subsequently, an Any-Hazard Response procedure is presented that will form the basis of response to all major incidents and disasters. Additional hazard-specific contingency plans are listed after which the declaration of a state of disaster and disaster classification is discussed. The chapter concludes with the identification of additional gaps and recommendations. The remaining chapters contain arrangements for the review and maintenance of the plan, a summary of the plan, as well as several annexures including contact details and additional descriptions of corporate responsibilities for Disaster Risk Management.

In summary, it can be said that several sections of the plan contain implementation actions that are required to ensure the effective implementation of this Plan. The most important of these are summarized below:

- This plan will be approved by Council and implemented as a working guideline for Disaster Risk Management;
- A 24-hour Communication Control Centre (Disaster Operations Centre) will be established to monitor emergency and essential services' communications and early warning information systems and identify developing emergencies and disasters so that appropriate response can be activated during major incidents and disasters;

- The municipality will institute the compulsory consideration of Disaster Risk Management in the planning and execution stages of all IDP projects. This will ensure the integration of Disaster Management into the IDP, and will ensure that all plans and projects are focused on contributing to Disaster Risk Reduction and Disaster Preparedness – thus reducing the impact of disasters on lives, property, community activities, the economy and the environment in the ORTDM;
- The O.R. Tambo Municipality will maintain a Disaster Management Advisory structure, whether this is a separate formally constituted Advisory Forum as discussed in the National Framework, or another suitable body that fulfills the role of Advisory Forum;
- It is advisable that the O.R. Tambo Municipal Council adopts a formal policy for the declaration of a local state of disaster. Such a policy will replace this section of the plan which provides a general description of issues surrounding the declaration of a state of disaster;
- The municipality will regularly review and update its Plan, as required by Section 48 of the Disaster Management Act, No. 57 of 2002. The Disaster Risk Management Advisory Forum shall be responsible for the review of the municipal Disaster Management Plan on an annual basis.

2 Introduction

Emergencies and disasters respect no boundaries and can destroy life and property suddenly and without warning. The South African government has recognised the need to prepare for and to reduce the risk of disasters and has made provision for such measures through the three spheres of government in partnership with the private sector and civil society.

The ORTDM is not immune to emergencies and disasters and annually suffers the impact of various human-induced and natural hazards that have the potential to kill, injure, destroy and disrupt. The District is committed to ensuring the safety of its inhabitants and the sustainability of its communities, economy and environment and therefore intends to effectively manage disaster risk within the District in close collaboration with all relevant stakeholders and especially the local municipalities within the District.

The ORTDM is required as per the Disaster Management Act, 2002 (Act No. 57 of 2002), to compile municipal Disaster Management Plans. This document fulfils this legal requirement and confirms the arrangements for managing disaster risk and for preparing for- and responding to disasters within the ORTDM.

The intended outcomes of this Plan are:

- The integration of Disaster Risk Management into the strategic and operational planning and project implementation of all line functions and role players within ORTDM;
- The creation and maintenance of resilient communities within the District; and
- An integrated, fast and efficient response to emergencies and disasters by all role-players.

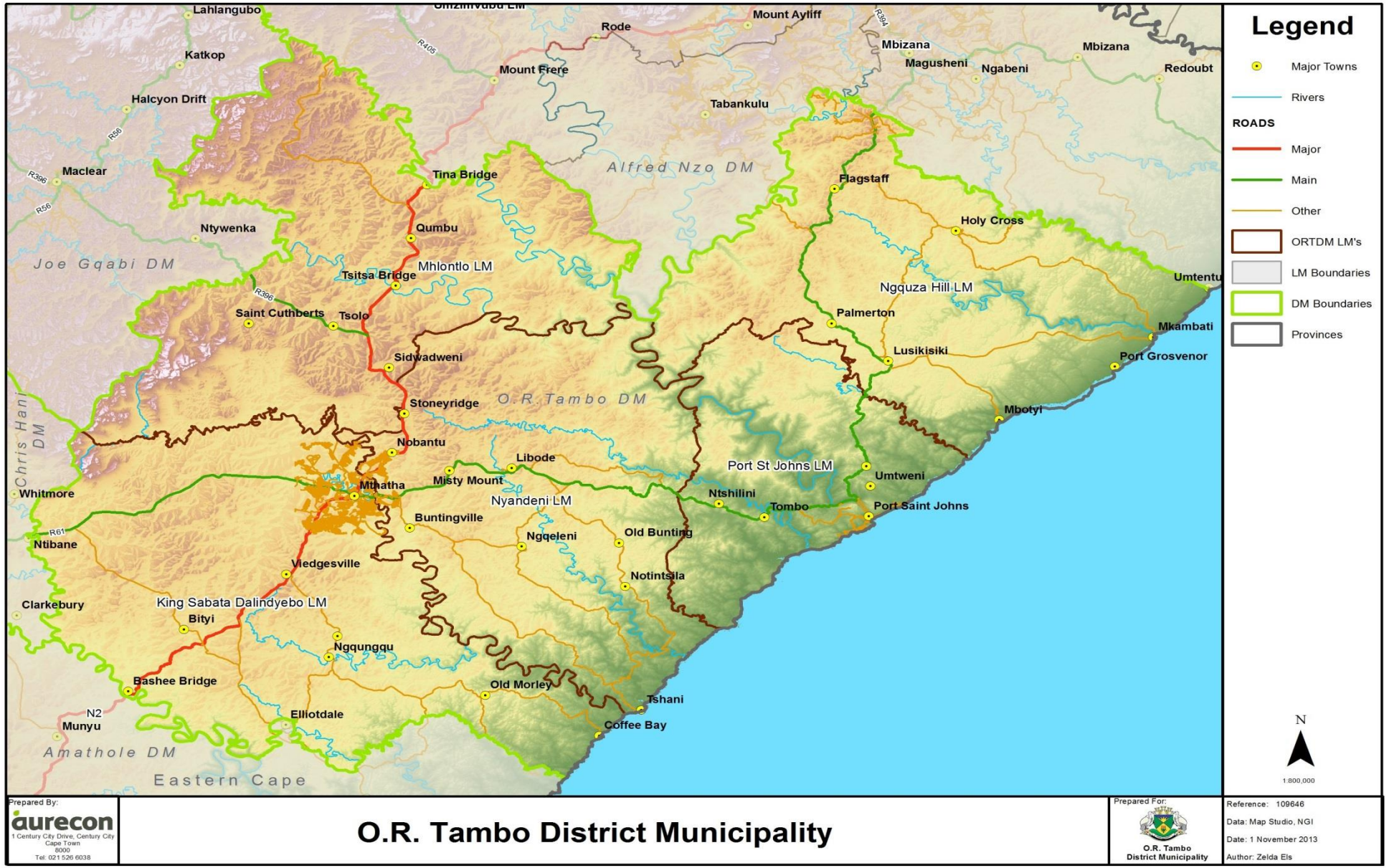
The overall objective of this document is not only to define the essential elements and procedures for preventing and mitigating major incidents or disasters, but also to ensure rapid and effective response and aspect specific contingency planning in case of a major incident or disaster that will:

- Save lives;
- Reduce risk exposure;
- Reduce suffering;
- Protect property;
- Protect the environment;
- Reduce economic and social losses; and
- Provide for the safety and health of all responders.

In this chapter the study area is described, after which the compilation of the Disaster Management Plan is presented with specific attention given to the relationship between the Plan and the Key Performance Areas of the Policy Framework for Disaster Risk Management (National Disaster Management Framework) in South Africa.

2.1 General Area Description

The O.R. Tambo District is situated in the Eastern Cape, along the eastern side of the province. ORTDM is one of the seven districts of Eastern Cape Province of South Africa and Mthatha is the main centre of the District. The ORTDM is sub-divided into five local municipalities: the Ingquza Hill LM; the King Sabata Dalindyebo LM; the Mhlontlo LM; the Nyandeni LM; and the Port St. Johns LM.



Map 1: Locality map of ORTDM

The District is vulnerable to the impact of natural and human-induced disasters and the population of the area has historically suffered loss of life and injury, property destruction or damage, the interruption of socio-economic activity and damage to the environment due to disasters.

In order to minimise disaster impacts, decrease disaster risk, and reduce hazards and vulnerability and to increase capacity and resilience, it is necessary to compile and implement a comprehensive Disaster Management Plan. Disaster Risk Management is a continuous and integrated multi-sectoral and multidisciplinary process of planning and implementation of measures aimed at preventing or reducing the risk of disasters; mitigating the severity or consequences of disasters; ensuring emergency preparedness; enabling a rapid and effective response to disasters and facilitating post-disaster recovery and rehabilitation.

Figure 1 illustrates how the various work streams within Disaster Risk Management increase and decrease in intensity and resource requirements over time as crises approach and are dealt with. The figure further demonstrates that Disaster Risk Management involves the simultaneous management of several disaster risks in various stages of the life cycle of disaster risks.

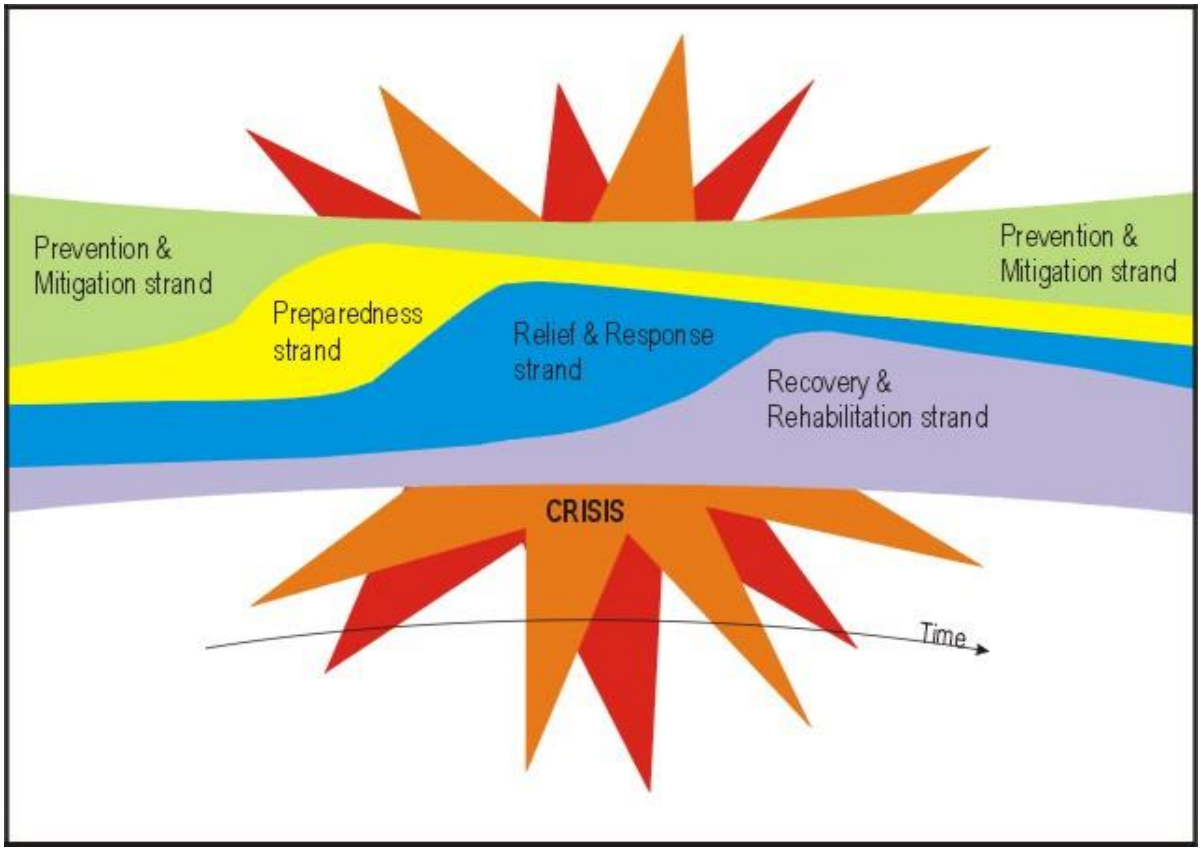


Figure 1: The expand / contract model of Disaster Management

The South African government has responded to the negative consequences of disasters by developing legislation (The Disaster Management Act, 2002 – Act No. 57 of 2002) and national policy (The Policy Framework for Disaster Management in South Africa, 2005) to deal with the management of disaster risk and disaster impact.

The Disaster Management Act, hereafter termed the Act, provides for an integrated and co-ordinated Disaster Management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post-disaster recovery. The Act prescribes the establishment of national, provincial and municipal Disaster Risk Management Centres. Most importantly in the context of this document, the Act also requires the compilation of Disaster Management Plans in all spheres of government. The ORTDM is primarily

responsible for the implementation of the Act within its area of jurisdiction, with a specific focus on ensuring effective and focused disaster risk reduction planning.

2.2 Disaster Management Plan (DMP) Description

2.2.1 Objectives of the DMP

The Policy Framework for Disaster Risk Management in South Africa indicates that the main objectives of Disaster Management in any particular jurisdiction within South Africa, such as the ORTDM, are to:

- Establish integrated institutional capacity within the District to enable the effective implementation of Disaster Management policy and legislation;
- Establish a uniform approach to assessing and monitoring disaster risks that will inform Disaster Risk Management planning and disaster risk reduction undertaken by the District and other role-players;
- Develop and implement integrated Disaster Management Plans and risk reduction programmes in accordance with approved frameworks; and
- Ensure effective and appropriate disaster response and recovery.

The objectives of the DMP are aligned to the National Policy Framework and are thus to focus on:

- The development of Institutional Capacity for Disaster Risk Management through the establishment of a District Disaster Risk Management Advisory Forum and related management structures and processes;
- The completion of a Disaster Risk Assessment and related reports and guidelines;
- The development of Risk Reduction Planning (Strategy) and related products; and
- The development of Operational Response and Recovery Plans and related products.

2.2.2 Scope of the DMP

This DMP falls within the paradigm of the South African (National), Eastern Cape (Provincial) and ORTDM Disaster Management Frameworks as well as the strategy frameworks of the ORTDM and the five Local Municipalities within the District. The DMP applies to the whole of the ORTDM and will influence the interaction of all spheres of government and sectors of society within the District with regards to disaster risk and disaster impact.

The ORTDM DMP is a guideline for the practical implementation of all aspects of Disaster Risk Management within the O.R. Tambo District and will serve as management decision-making tool that assist with the identification of disaster risks and the functional and organisational integration of Disaster Risk Reduction as well as disaster response actions and projects.

The ORTDM DMP therefore provides Disaster Risk Management stakeholders with clear guidance on activities they need to undertake to meet the objectives and targets of the National, Provincial and O.R. Tambo District Disaster Management Policy Framework (ORTDM DMPF) and to reduce disaster risk and increase disaster resilience within the District.

The Policy Framework for Disaster Risk Management in South Africa, also known as the National Disaster Management Framework (NDMF) was published in 2005. It is the legal instrument specified by the Act to address needs for consistency across multiple interest groups by providing a coherent, transparent and inclusive policy on Disaster Risk Management appropriate for the Republic as a whole. The NDMF is organised into four Key Performance Areas (KPA's) and three Enablers as illustrated in Figure 2.

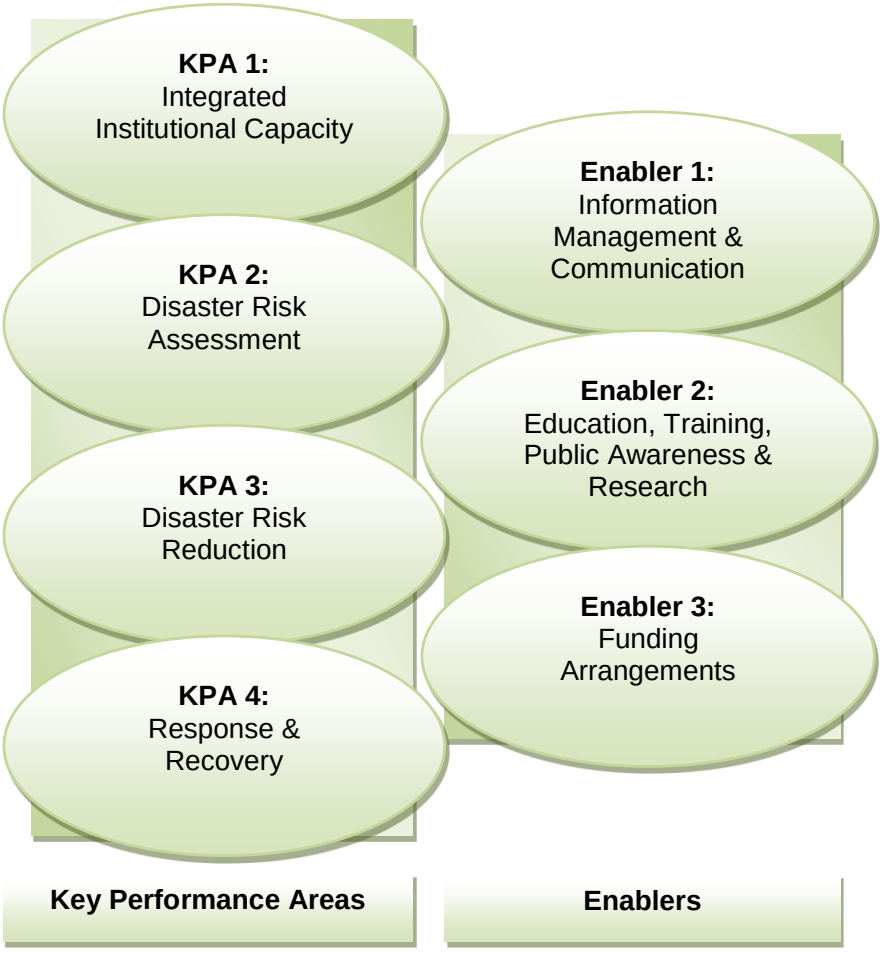


Figure 2 KPA's and Enablers of the National Disaster Management Framework

The four KPA's and the three Enablers are:

- KPA 1: Integrated Institutional Capacity for Disaster Management;
- KPA 2: Disaster Risk Assessment;
- KPA 3: Disaster Risk Reduction;
- KPA 4: Response and Recovery;
- Enabler 1: Information Management and Communication;
- Enabler 2: Education, Training, Public Awareness and Research; and
- Enabler 3: Funding Arrangements for Disaster Management.

In the table on the overleaf the KPA's and Enablers are illustrated with the main objective for each of these KPA's and Enablers indicated in the right-hand column.

Table 1: NDMF KPA's, Enablers and Objectives

NDMF KPA's and Enablers	National Framework objectives translated to District-level objectives
KPA 1: Integrated Institutional Capacity for Disaster Management	Establish integrated institutional capacity for Disaster Management within the O.R. Tambo District to enable the effective implementation of Disaster Management policy and legislation.
KPA 2: Disaster Risk Assessment	Establish a uniform approach to assessing and monitoring disaster risks that will inform Disaster Risk Management planning and disaster risk reduction undertaken by organs of state and other role players.
KPA 3: Disaster Risk Reduction	Ensure all Disaster Management stakeholders develop and implement integrated Disaster Management plans and risk reduction programmes in accordance with approved National, Provincial (Eastern Cape) and District (O.R. Tambo) frameworks.
KPA 4: Response and Recovery	Ensure effective and appropriate disaster response and recovery by: • Implementing a uniform approach to the dissemination of early warnings; • Averting or reducing the potential impact in respect of personal injury, health, loss of life, property, infrastructure, environments and government services; • Implementing immediate integrated and appropriate response and relief measures when significant events or disasters occur or are threatening to occur; • Implementing all rehabilitation and reconstruction strategies following a disaster in an integrated and developmental manner.
Enabler 1: Information Management and Communication	Development of a comprehensive information management and communication system. Establish integrated communication links with all Disaster Management role players.
Enabler 2: Education, Training, Public Awareness and Research	Promote a culture of risk avoidance among Disaster Risk Management stakeholders within the O.R. Tambo District by capacitating all role players through integrated education, training and public awareness supported by scientific research.
Enabler 3: Funding Arrangements for Disaster Management	Establish mechanisms for the funding of Disaster Risk Management in the O.R. Tambo District.

Both the Eastern Cape Provincial Disaster Risk Management Framework and the O.R. Tambo District Disaster Management Frameworks are structured around the KPA's and Enablers as set out in the Policy Framework for Disaster Risk Management in South Africa.

2.2.3 A brief description of each KPA and Enabler

In this section a short description of each of the KPAs and Enablers of the Policy Framework for Disaster Risk Management in South Africa is provided to enable the reader to contextualise the use of the KPA's and Enablers within the Municipal Disaster Management Plan of the O.R. Tambo District.

Each of these KPA's and Enablers are further elaborated upon in the Disaster Management Frameworks of the Eastern Cape Province and O.R. Tambo District.

2.2.4 KPA 1: Integrated Institutional Capacity for Disaster Management

Key Performance Area 1 of the Policy Framework for Disaster Risk Management in South Africa (NDMF) establishes the requirements for effective institutional arrangements in the national sphere to ensure the integrated and coordinated implementation of Disaster Risk Management policy and legislation and the application of the principle of co-operative governance. Key Performance Area 1 also places appropriate emphasis on arrangements that will ensure the involvement of all stakeholders in Disaster Risk Management in order to strengthen the capabilities of national, provincial and municipal organs of state. Arrangements that will facilitate co-operation with countries in the region and the international community for the purpose of Disaster Management are also discussed.

2.2.5 KPA 2: Disaster Risk Assessment

Disaster risk specifically refers to the likelihood of harm or loss due to the action of hazards or other external threats on vulnerable structures, services, areas, communities and households within an area. Key Performance Area 2 addresses the need for conducting ongoing disaster risk assessments and monitoring to inform Disaster Risk Management planning and priority setting, guide disaster risk reduction efforts and monitor the effectiveness of such efforts. It also outlines the requirements for implementing disaster risk assessment and monitoring by organs of state within all spheres of government.

2.2.6 KPA 3: Disaster Risk Reduction

The successful implementation of the Act critically depends on the preparation and alignment of Disaster Management frameworks and plans for all spheres of government. The legal requirements for the preparation of Disaster Risk Management frameworks and Plans by national, provincial and municipal organs of state are specified in sections 25, 38 and 52 of the Act. This Key Performance Area addresses the requirements for Disaster Risk Management planning within all spheres of government. It gives particular attention to the planning for and integration of the core risk reduction principles of prevention and mitigation into ongoing programmes and initiatives.

2.2.7 KPA 4: Response and Recovery

The Act requires an integrated and coordinated policy that focuses on preparedness for disasters, rapid and effective response to disasters and post-disaster recovery and rehabilitation. When a significant event or disaster occurs or is threatening to occur, it is imperative that there should be no confusion as to roles, responsibilities, funding arrangements and the procedures to be followed. This section addresses key requirements that will ensure that planning for disaster response and recovery as well as rehabilitation and reconstruction achieves these objectives.

2.2.8 Enabler 1: Information Management and Communication

Disaster Risk Management is a collaborative process that involves all spheres of government, non-governmental organisations, the private sector, a wide range of capacity-building partners and communities. Integrated Disaster Risk Management depends on access to reliable hazard and disaster risk information as well as effective communication systems to enable the receipt, dissemination and exchange of information. It therefore requires capabilities to manage risks on an ongoing basis, and to effectively anticipate, prepare for, respond to and monitor a range of natural and other hazards. It further requires systems and processes that will enable all role players to make timely and appropriate decisions during emergencies. These systems and processes must also inform Disaster Risk Management and development planning processes by all stakeholders.

2.2.9 Enabler 2: Education, Training, Public Awareness and Research

Sections 15 and 20(2) of the Disaster Management Act specify the promotion of education and training, the encouragement of a broad-based culture of risk avoidance, and the promotion of research into all aspects of Disaster Risk Management. This Key Performance Area addresses the development of education and training for Disaster Risk Management and associated professions as well as the inclusion of Disaster Risk

Management and risk-avoidance programmes in school curricula. It also outlines mechanisms for awareness creation and the development of a national disaster risk research agenda.

2.2.10 Enabler 3: Funding Arrangements for Disaster Management

The provision of funding for Disaster Risk Management is likely to constitute the single most important factor contributing to the successful implementation of the Act by national, provincial and municipal spheres of government. The Act, with the exception of Chapter 6 on funding of post-disaster recovery and rehabilitation, does not provide clear guidelines for the provision of funding for Disaster Risk Management. In order to give effect to the requirements of the Act, four Key Performance Areas and three Enablers have been identified in the NDMF to guide the implementation of the Act. Accordingly, funding from a range of sources for the different aspects of Disaster Risk Management outlined in the Key Performance Areas and Enablers will be required. Enabler 3 builds on the recommendations made by the Financial and Fiscal Commission on funding arrangements in its Submission on the Division of Revenue 2003/04, and describes the Disaster Risk Management funding arrangements for organs of state in the national, provincial and local spheres of government. From the perspective of the ORTDM, it is important that all the Enablers and Key Performance Areas are adequately addressed in the framework and the Disaster Management plan of the District.

In this plan, the Key Performance Areas are reflected in specific dedicated chapters, while the Enablers are interwoven into all chapters of the plan. Figure 3 illustrates the relationship between the chapters of the plan and the KPAs and Enablers of the National Framework.

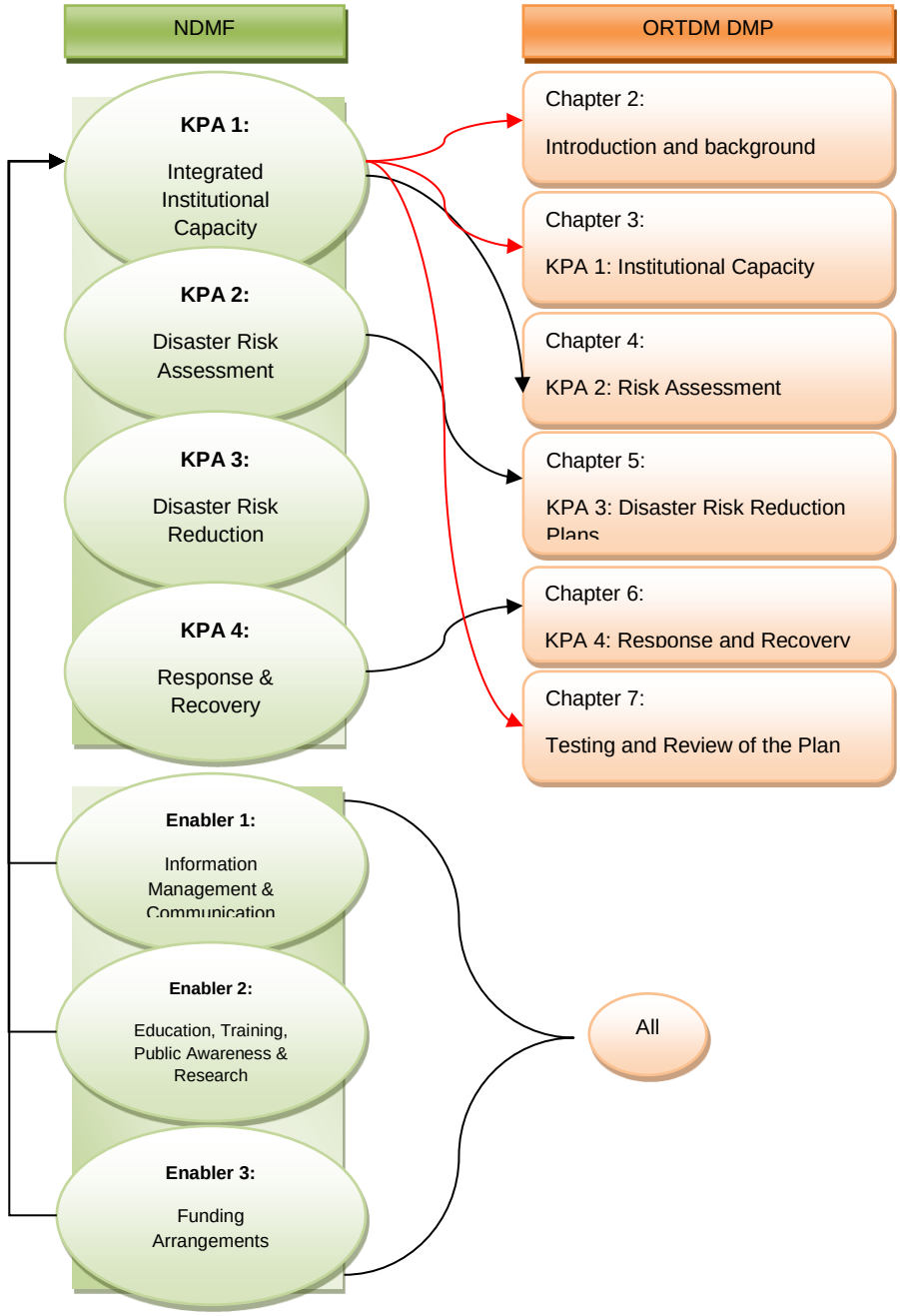


Figure 3: The Interrelationship between the NDMF and the ORTDM DMP

2.2.11 ORTDM DMP approach and methodology

The methodology used during the compilation of the ORTDM DMP is aligned with existing methodologies and practice utilised within the Eastern Cape Province and is aligned with the Policy Framework for Disaster Risk Management in South Africa.

The overall approach combines participatory-consultative aspects with expert opinion based on research and experience. The data used in the compilation of the DMP was gathered from stakeholder consultation as well as a desktop study which summarised existing data provided by ORTDM officials and other supporting documents retrieved from credible internet sources.

2.2.12 Stakeholder Consultation

The approach for managing the assembly of the ORTDM DMP entailed a close collaboration and liaison with the top management of ORTDM Disaster Management, the ORTDM Disaster Management Project Manager, and the Disaster Risk Management representatives from the five local municipalities within the District. The Project Steering Committee met as and when required to discuss the DMP progress and any administration.

The Project Steering Committee (PSC) for the project consisted of:

- O.R. Tambo DM – Director Community Development Services;
- O.R. Tambo Disaster Risk Management Centre (Project Manager); and
- Service provider – Project Leaders.

The relevance and quality of the ORTDM DMP is reliant on inputs from a wide variety of stakeholders and a series of stakeholder consultation workshops were held. Between October and January 2015 workshops conducted at district and local municipal level to inform the Disaster Management Plans.

2.2.13 Collection of data and literature review

Existing information and data was collected in hardcopy where possible, as well as in electronic format from ORTDM officials as well as from credible internet sources for review. The existing and relevant Disaster Risk Management legislation and policy frameworks, together with the O.R. Tambo DM IDP and other documents, studies, policies, frameworks and strategies formed a point of departure. Available information was supplemented with the service provider's own research and information database as well as leads and references provided by the Client and the PSC.

In the next section the legal requirements related to Disaster Risk Management within the ORTDM will be defined and the current compliance with these legal requirements will be discussed.

2.3 Legal requirements applicable to the O.R. Tambo District Municipality

South Africa is prone to a variety of natural and human-induced hazards, which occasionally lead to loss of property and lives. In the past decade, these hazard occurrences have become more frequent and severe. The Constitution of the Republic of South Africa (Act No. 108 of 1996) gives everyone the right to a safe environment. Section 24 states that everyone has the right to an environment that is not harmful to their health or well-being.

The National Government recognised a need to establish an institutional framework that allows for risk prevention and rapid action during an occurrence and has taken certain steps towards this end, such as:

- **White Paper on Disaster Management**: The White Paper introduced a new paradigm in the management of disasters, by placing an emphasis on risk reduction and preparedness;
- **Disaster Management Act (the Act)**: The White Paper led to the promulgation of the Disaster Management Act, Act No. 57 of 2002, which is the regulatory framework for Disaster Management in South Africa. The Department of Cooperative Governance (COG), through the National Disaster Management Centre (NDMC), administers the Act.
- **National Disaster Management Framework (NDMF)**: The NDMC has prepared a Policy Framework for Disaster Management in South Africa, which aims to guide the development and implementation of Disaster Risk Management in the country.
- **National Disaster Management Centre Guidelines**: The NDMC developed guidelines for the establishment of Disaster Risk Management Centres (DRMCs).
- **Provincial Disaster Management Generic Plans**: The PDMC appointed a service provider to compile generic Disaster Management Plans that will assist districts and local municipalities with the compilation of their Plans using standardised action lists.

2.3.1 The Disaster Management Act (the Act)

The Disaster Management Act, Act No. 57 of 2002 (the Act), requires that, inter alia, the three spheres of government prepare ***Disaster Management Plans*** (Sections 39 and 53 of the Act).

Section 39 of the Act addresses the disaster management planning requirements for Provinces, namely:

"*(1) Each province must-*

(a) prepare a disaster management plan for the province as a whole:

(b) co-ordinate and align the implementation of its plan with those of other organs of state and institutional role-players; and

(c) regularly review and update its plan.

(2) A disaster management plan for a province must-

(a) form an integral part of development planning in the province;

(b) anticipate the types of disaster that are likely to occur in the province and their possible effects;

(c) guide the development of measures that reduce the vulnerability of disaster-prone areas, communities and households;

(d) seek to develop a system of incentives that will promote disaster management in the province;

(e) identify the areas or communities at risk;

(f) take into account indigenous knowledge relating to disaster management:

(g) promote disaster management research;

h) identify and address weaknesses in capacity to deal with possible disasters:

(i) provide for appropriate prevention and mitigation strategies;

(j) facilitate maximum emergency preparedness; and

(k) 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

(ii) prompt disaster response and relief;

(iii) the procurement of essential goods and services:

(iv) the establishment of strategic communication links;

(v) the dissemination of information; and

(vi) other matters that may be prescribed.

(3) Municipal organs of state in the province, to the extent required by the province, may be requested to co-operate with the province in preparing a disaster management plan for the province.

(4) A province must submit a copy of its disaster management plan and of any amendment to the plan to the National Centre and each municipal disaster management centre in the province."

Section 53 of the Act addresses the disaster management planning requirements for Municipal Entities, namely:

"(1) Each municipality must, within the applicable municipal disaster management framework-

(a) prepare a disaster management plan for its area according to the circumstances prevailing in the area;
(b) co-ordinate and align the implementation of its plan with those of other organs of state and institutional role-players;

(c) regularly review and update its plan; and

(d) through appropriate mechanisms, processes and procedures established in terms of Chapter 4 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000), consult the local community on the preparation or amendment of its plan.

(2) A disaster management plan for a municipal area must-

(a) form an integral part of the municipality's integrated development plan;

(c) anticipate the types of disaster that are likely to occur in the municipal area and their possible effects;
(d) place emphasis on measures that reduce the vulnerability of disaster-prone areas, communities and households;
(e) seek to develop a system of incentives that will promote disaster management in the municipality;

(e) identify the areas, communities or households at risk;

(f) take into account indigenous knowledge relating to disaster management;

(g) promote disaster management research;

(h) identify and address weaknesses in capacity to deal with possible disasters;

(i) provide for appropriate prevention and mitigation strategies:

(j) facilitate maximum emergency preparedness; and

(k) 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 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 and the local municipalities within the area of the district municipality must prepare their disaster management plans after consulting each other.

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

to the National Centre, the disaster management centre of the relevant province, and, if it is a district

municipality or a local municipality, to every municipal disaster management centre within the area of

the district municipality concerned."

The current understanding of the Act as it relates to *Disaster Management Plans* is that Municipalities must plan for the following:

- **Disaster Risk Reduction (Disaster Mitigation) Planning**: *Disaster Risk Reduction Plans* should reduce the risks to which vulnerable communities are exposed to acceptable levels (*described in Sections 39 (2) and 53 (2)(a); (b); (c); (e); (f); (h) and (i) of the Act*). In preparing their Risk Reduction

Plans, Municipalities should apply their minds and produce cost-effective and innovative risk reduction solutions. The majority of these plans will be linked to the ***Integrated Development Plan*** (IDP) as projects and programmes;

- **Disaster Preparedness (Response & Relief) Planning**: *Disaster Preparedness Plans* (*described in Sections 39 (2) and 53 (2)(b); (e); (f); (h) (j) and (k) of the Act*), should address response and relief actions to be implemented should a disaster hit a community that is not particularly vulnerable to risks and/or find it acceptable to live with such risks; and
- **Disaster Impact Assessment and Recovery (Recovery, Rehabilitation & Reconstruction) Planning**: *Disaster Impact Assessment and Recovery Planning* should focus on assessing the impact of a disaster; identifying appropriate reconstruction and rehabilitation measures; and monitoring the effectiveness of the reconstruction and rehabilitation measures.

According to section 53 of the Act, the ORTDM is legally obliged to

- Prepare a Disaster Management Plan for its area according to the circumstances prevailing in the District;
- To co-ordinate and align the implementation of its Plan with those of other organs of state and institutional role players; and
- To regularly review and update its Plan, and include consultation with its local municipalities as well as local communities in the preparation or amendment process.

Section 53(2) (a) of the Act specifies that the Disaster Management Plan for a municipality must form an integral part of the municipality's Integrated Development Plan (IDP). Section 26(g) of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000) lists "applicable Disaster Management Plans" as core components of an IDP. The linkage between the Disaster Management Plan and the IDP will be explored in later sections of this chapter (from Section 0).

According to Section 53(4) of the Act, the O.R. Tambo District Municipality must submit a copy of its Disaster Management Plan (DMP), and of any amendment to the plan, to the Disaster Management Centre of the Eastern Cape Province and the National Disaster Management Centre.

Additional legislative requirements that will inform the way in which the ORTDM approaches the management of disaster risks within its jurisdiction includes the Municipal Structures Act of 1998 (Act No. 117 of 1998). According to Section 84(1)(j) of this act, the ORTDM is responsible for the provision of fire fighting services serving the area of the District Municipality as a whole.

This section has focused on the implications of the Act for the ORTDM, but the Act also provides for the responsibility of other stakeholders to attend to Disaster Risk Management. The Disaster Risk Management planning responsibilities of national departments and public enterprises operating within the jurisdiction of the ORTDM will be described in the next section.

2.3.2 Requirements for national departments and public enterprises to compile plans

The ORTDM working in isolation of other organs of state and the private sector would not be able to significantly reduce the variety of disaster risks which confront the inhabitants of the District. Disaster Risk Management is truly everybody's business and collaboration and co-operation would be required to reduce disaster risk. The success of the ORTDM DMP depends on effective planning by several other stakeholders as illustrated in the figure below.

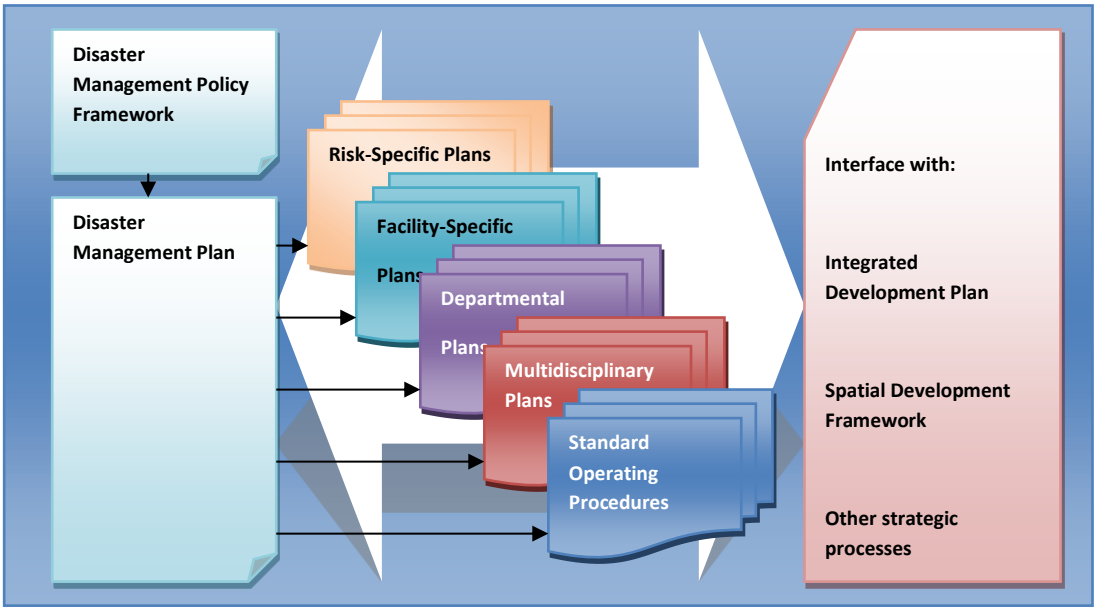


Figure 4: The relationship between plans

National government departments and public enterprises operating within the boundaries of the ORTDM can make considerable contributions to disaster risk reduction within the district through the compilation of their own Disaster Management Plan. This sub-section describes the legal requirement for national departments and public enterprises conduct Disaster Risk Management planning.

Part 2, Section 25 of the Disaster Management Act governs the preparation of Disaster Management Plans by national organs of state:

(1) Each national organ of state indicated in the Policy Framework for Disaster Management in South Africa must prepare a disaster management plan setting out (i) the way in which the concept and principles of disaster management are to be applied in its functional area;(ii) its role and responsibilities in terms of the Policy Framework for Disaster Risk Management in South Africa; (iii) its role and responsibilities regarding emergency response and post disaster recovery and rehabilitation; (v) its capacity to fulfil its role and responsibilities; (vi) particulars of its disaster management strategies: and(vi) contingency strategies and emergency procedures in the event of a disaster, including measures to finance these strategies; co-ordinate and align the implementation of its plan with those of other organs of state and institutional role-players; and regularly review and update its plan.

(2) The disaster management plan of a national organ of state referred to in subsection (1) must form an integral part of its planning.

(3) (a) A national organ of state must submit a copy of its disaster management plan and of any amendment to the plan to the National Centre. (b) If a national organ of state fails to submit a copy of its disaster management plan or of any amendment to the plan in terms of paragraph (a), the National Centre must report the failure to the Minister, who must take such steps as may be necessary to secure compliance with that paragraph, including reporting the failure to Parliament.'

Section 1 of the Act describes a national organ of state as a national department or national public entity defined in section 1 of the Public Finance Management Act, 1999 (Act 1 of 1999). A national department is described in the same section as *'(a) a department listed in schedule 1 of the Public Service Act, 1994 (Proclamation No 103 of 1994), but excluding a provincial administration; or (b) an organisational component listed in Schedule 3 of that Act*[2]*.'*

According to Section 1 of the Public Finance Management Act, 1999 (Act 1 of 1999), a national public entity means *'(a) a national government business enterprise or (b) a board, commission, company, corporation, fund*

[2] The schedules are available at http://www.acts.co.za/public_service_act_1994/index.htm.

or other entity (other than a national government business enterprise) which is (i) established in terms of national legislation; (ii) fully or substantially funded either from the National Revenue Fund, or by way of a tax. Levy or other money imposed in terms of national legislation; and (iii) accountable to Parliament.'

In the same section a national government business enterprise is defined as an entity which *'(a) is a juristic person under the ownership control of the national executive; (b) has been assigned financial and operational authority to carry on a business activity; (c) as its principal business, provides goods or services in accordance with ordinary business principles; and (d) is financed fully or substantially from sources other than (i) the National Revenue Fund; or (ii) by way of a tax, levy or other statutory money.'*

All national departments and public enterprises operating within the ORTDM thus have a responsibility to have Disaster Management Plans in place and can be engaged with in this regard. Disaster Risk Management planning does not stop with government and organs of state. The private sector is also encouraged to develop Disaster Management Plans and is legally required to at least ensure occupational health and safety and to have emergency planning in place.

2.3.3 Requirements for commerce and industry to compile plans

Disaster Risk Management requires multi-sectoral co-operation and it is critical that business also contributes to the reduction of disaster risk in communities. District and local municipalities must therefore maintain strong relationships with business, especially where commerce and industry can provide resources that can contribute to disaster risk reduction. Commerce and industry can contribute directly to Disaster Risk Management through memorandums of understanding or direct assistance, but could also choose to use corporate social investment vehicles for this purpose.

It is in the interest of any business to ensure that it is reducing its exposure to disaster risk and that it is able to respond quickly and effectively to any incident that may affect its ability to conduct business and generate income. There is a strong link between the resilience of commerce and industry within a specific area and the ability of communities to bounce back from adversity. Communities rely on commerce and industry for livelihoods and for the commercial provision of daily necessities. It is therefore in the interest of ORTDM Disaster Risk Management to support emergency and Disaster Management planning with commerce and industry.

The desire of commerce and industry to stay in business and maintain profit levels is enough motivation for this sector to assess their risks and devise plans to avoid, reduce or respond to risks which could affect their ability to continue with business. In addition good practice and corporate social responsibility also dictate that commerce and industry assess and manage risk, which includes disaster risk. The King II and III Reports[3] focus on risk management in companies and place an emphasis on the triple-bottom line of financial, social and environmental aspects. The King reports underline the importance of risk management and business continuity planning and provides a basis for interaction between the ORTDM and commerce and industry within the area on issues of risk and joint efforts to reduce risk or to respond to disasters.

More formally, the Occupational Health and Safety (OHS) Act (No. 85 of 1993) and the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977) with their respective regulations and codes of practice and associated standards require compliance to many safety-related aspects. With particular reference to the mining sector which is well-represented within the District, the Mine Health and Safety Act, 1996 (Act No. 29 of 1996) also warrants mentioning. Compliance with these acts and their regulations, codes and standards will protect the interests of the private sector.

Of particular importance within the OHS Act are sections 7 (Health and Safety Policy); 8 (General Duties); 9 (People not in employment who may be directly affected); 17 and 18 (Health and safety representatives); 19 and 20 (Committees) and the Major Hazard Installation Regulations proclaimed under this Act.

[3] King II and III available online from: www.iodsa.co.za

The prescriptions of the National Building Regulations (updated in 2008) and SANS 10400:1990 – Code of practice for the application of the National Building Regulations provides for safe buildings that will reduce vulnerability, increase resilience and therefore decrease disaster risk.

Further legislation that requires commerce and industry as well as government to actively pursue disaster risk reduction includes the National Environmental Management Act (NEMA), the Mineral Resources Act, and the National Veld and Forest Fires Act that regulate the establishment of Fire Protection Associations (FPAs).

In summary it can be said that there is a clear need and legal foundation for all organs of state and the private sector to assess their disaster risk, to address this risk through mitigation actions, and to be prepared to respond to major incidents and disasters affecting them.

2.3.4 ORTDM current compliance with the Disaster Management Act

According to the Disaster Management Act (No 57 of 2002), the ORTDM is required to have the following established:

- A Disaster Management Framework (Section 42 of the Act);
- A Disaster Management Plan (Section 53 of the Act);
- A Disaster Management Centre (Section 43 of the Act);
- And to have an appointed Head of the Disaster Management Centre (Section 45).

The five Local Municipalities are legally only required to have a Disaster Management Plan. A Disaster Management Advisory forum is not required at District or Local level but is recommended best practice (Section 51 of the Act).

Table 2 describes the current status quo of compliance of the ORTDM and the Local Municipalities within the District with the requirements of the Disaster Management Act. The information in the table is based on personal interviews with Disaster Risk Management staff or role-players in each Local Municipality. Although most Local Municipalities have some form of Disaster Management Plan, none of these have been approved by the relevant Councils. Council approval is a necessity if the plan is to inform the IDP process of the Local Municipalities. The Requirements of the Disaster Management Act are listed in the top row of the table. The priority of each requirement is then indicated, and this priority emanates from whether the requirement in the Act is a “must” or a “may”, with other words compulsory or optional. For example, a Framework is compulsory for a District Municipality but optional for a Local Municipality. The status for each requirement is also indicated. The status is dependent on the priority of the requirement and indicates non-compliance, progress or compliance with requirements, be these requirements compulsory or optional. Although Local Municipalities are not legislatively required to have specific Disaster Risk Management coordinating structures, it is unlikely that a local municipality would be able to effectively conduct a participative Disaster Management planning process in the absence of some or other Disaster Management coordinating structure within the municipality. It is recommended that each Local Municipality should at least have an internal Disaster Risk Management coordinating body such as an Inter-Departmental Disaster Risk Management Committee. The additional establishment of an advisory forum is strongly recommended to co-ordinate Disaster Management policy within the municipality and enable stakeholder involvement in Disaster Management matters.

Disaster Risk Management has become one of the key components of an IDP’s credibility. Section 26(g) of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000) lists ‘applicable Disaster Management Plans’ as core components of an IDP. The next section focuses on the relationship between Disaster Management and the IDP.

Table 2: Status of compliance with Disaster Management Act within O.R. Tambo District

District / Local Municipalities	Disaster Management Framework (Section 42)		Disaster Management Plan (Section 53)		Disaster Risk Management Advisory Forum (Section 51)		Disaster Risk Management Centre (Section 43)		Head of the Disaster Risk Management Centre (Section 45)	
	Priority	Status	Priority	Status	Priority	Status	Priority	Status	Priority	Status
O.R. Tambo District Municipality	Must	Yes	Must	No	May	Yes	Must	Yes	Must	Yes
Ingquza Hill Local Municipality	May	No	Must	No	May	Yes	May	No	May	No
King Sabata Dalindyebo Local Municipality	May	No	Must	No	May	Yes	May	No	May	No
Mhlontlo Local Municipality	May	No	Must	No	May	Yes	May	No	May	No
Nyandeni Local Municipality	May	No	Must	No	May	Yes	May	No	May	No
Port St. Johns Local Municipality	May	No	Must	No	May	Yes	May	No	May	No

Key:

Priority	
Must	Legal requirement
May	Best practice, not legal requirement

Status	
	Non-compliance with best practice
	Progressing to compliance with best practice
	Compliance with best practice
	Non-compliance with legal requirement
	Progressing to compliance with legal requirement
	Complying with legal requirement

2.4 Linkage with the Integrated Development Plan of the O.R. Tambo District Municipality

The Systems Act defines the Integrated Development Plan to be the single, inclusive and strategic plan *'for the development of the municipality…'.* The Disaster Management Plan has become one of the criteria for determining a credible IDP document. Thus, Disaster Management is being elevated from the periphery of planning into the core of determining the allocation of resources.

To ensure success the Disaster Management planning process involves:

- In the first phase of the Disaster Management planning process, as in the IDP process, communities and stakeholders are given the chance to indicate/highlight the problems they experience and to determine their priorities (community based risk assessment), with inputs from Disaster Management. The outputs of this phase are a list of the intolerably high risks, the high risks and the tolerable risks for each of the wards / clusters in the municipality.
- The intolerably high risks and the high risks are addressed in Phase 2 of the process. In this phase, the Advisory Forum, in conjunction with the technical task teams, will have to make recommendations on the most appropriate way(s) to address the intolerably high risks and the high risks, as well as, to ensure that project proposals are designed, which can be implemented.
- The tolerable risks are then addressed. The Advisory Forum, in conjunction with the technical task teams, must identify and recommend the minimum preparedness and contingency planning requirements to be in a position to address the tolerable risks.
- The Municipality, especially the IDP Manager and the Head of Disaster Management, has to make sure that the disaster risk reduction project proposals are in line with the objectives and the agreed strategies of the IDP of the Council.

2.4.1 Linkage with the Spatial Development Framework of the O.R. Tambo District

A Spatial Development Framework (SDF) is a prerequisite in terms of the Local Government Municipal Systems Act, 2000 (Act No. 32 of 2000) and a core component of an IDP and *'must include the provision of basic guidelines for a land-use management system for the municipality'.* An SDF is established by the Municipality for implementation within the District by all role-players.

An SDF should be environmentally informed and sustainability-based, incorporating pro-poor policies rather than only being a spatial indication of IDP proposals. The collectives of the social, political, economic and environmental elements that underpin present-day society are regarded as fundamental informants to an SDF in order for spatial planning to complement economic growth and development. A District SDF is an intervention at a critical planning level to facilitate progressive connectivity between activities in lower and higher order planning domains. Furthermore it is to be a proposal of spatial guidelines to take effect within the municipal area in order to direct future spatial interventions as a result of growth, development and policy and to reduce developmental disparities.

The IDP of the ORTDM would be the key informant of the formulation process of the SDF. The IDP must accommodate the visionary statement of the Council that needs to direct all activities of all role-players that perform activities within the municipal area. Figure 5 illustrates the context of the Regional SDF in relation to other regional processes and subsequent products, but also with regard to the cyclical nature of the development agenda.

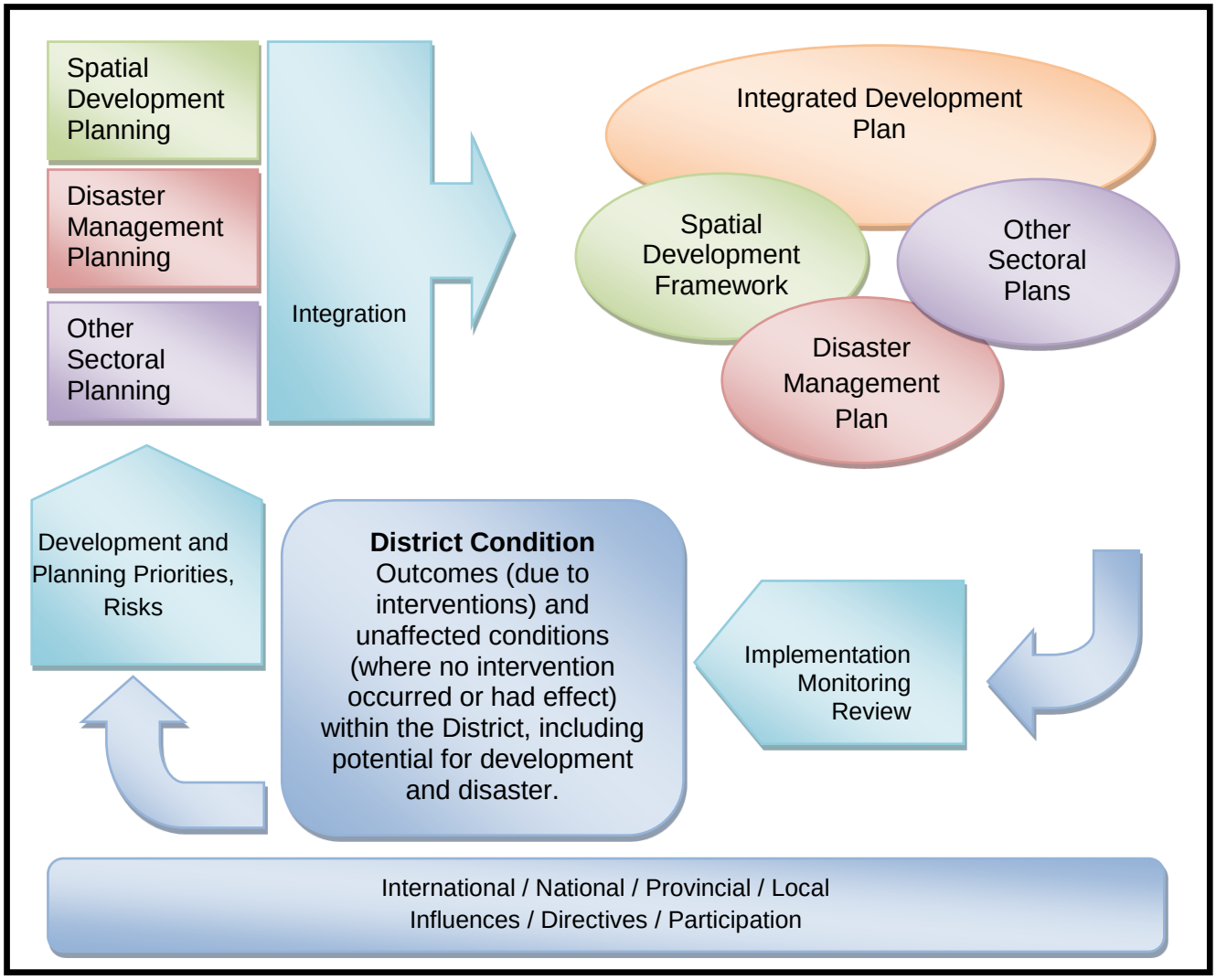


Figure 5: The Relationship between the SDF, IDP and Disaster Management Plan

2.4.2 The relationship between disasters and development

This section expands upon the relationship between disasters and development to illustrate why Disaster Management projects should be included within the development planning of a District Municipality, and why the planning and prioritisation of IDP projects in general should take disaster risk and the possible influence of the project on disaster risk into consideration.

It can be said that disasters and development have both a negative and positive relationship, and this relationship needs to be recognised and managed to achieve sustainable development. In a negative sense, disasters can destroy development and uncontrolled, improper development can cause disasters. In a positive sense, disaster can create an opportunity for improved, more resilient development, and proper development can reduce the risk of disasters occurring. Badly planned development in a floodplain increases disaster risk by making the new community vulnerable to flooding and thus disaster. The development of well-planned and effective flood defence measures can decrease the vulnerability of the community and thus contribute to disaster risk reduction. If a disaster actually occurs and major flooding impacts on the community, the development can be damaged or destroyed. If the lessons learnt from the flooding event are however incorporated in developing a new community outside the flood plain or if flood risk reduction is incorporated into the planning of a new community in the same setting, but this time from the outset, Disaster Risk Reduction can also be achieved.

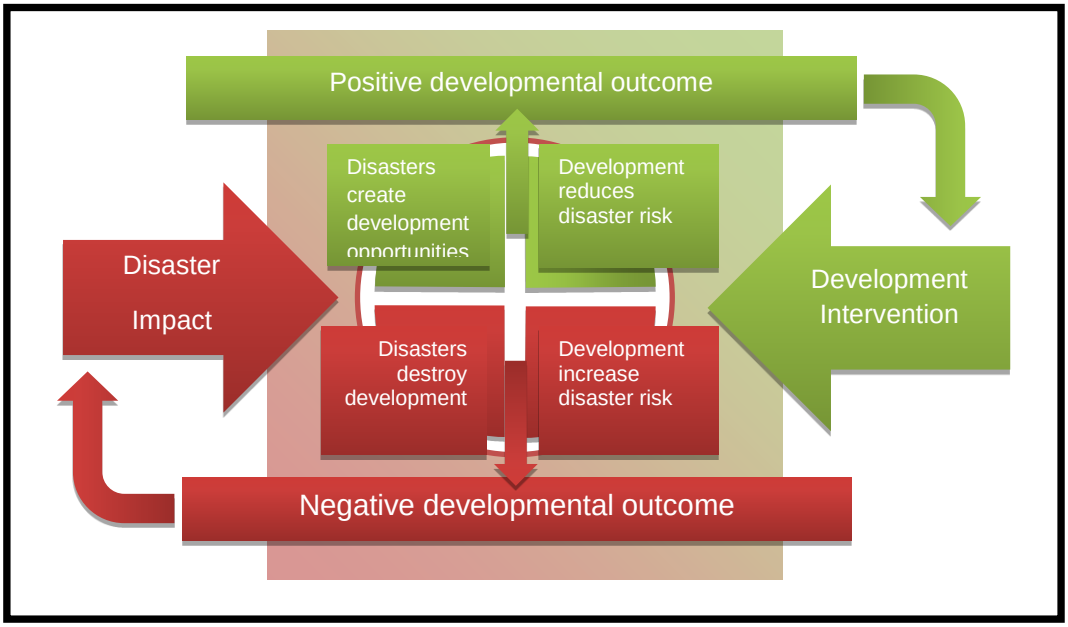


Figure 6: The relationship between disasters and development

In recognition of the possible negative or positive relationship between disasters and development, both the Municipal Systems Act and the Disaster Management Act requires the inclusion of a municipal Disaster Management Plan in the IDP of municipalities.

2.4.3 Integrating development and Disaster Management planning

Based on the previous discussions of the relationship between Disaster Management, the SDF and the IDP, it is clear that the process for developing a Disaster Management Plan should be integrated with the IDP process. Such a process is shown below. Figure 7 illustrates the planning process for the development of municipal Disaster Management Plans as well as the integration of such plans into the integrated development plan of a municipality. It is recommended that long-term planning for future IDP cycles should include the Disaster Management planning steps indicated below.

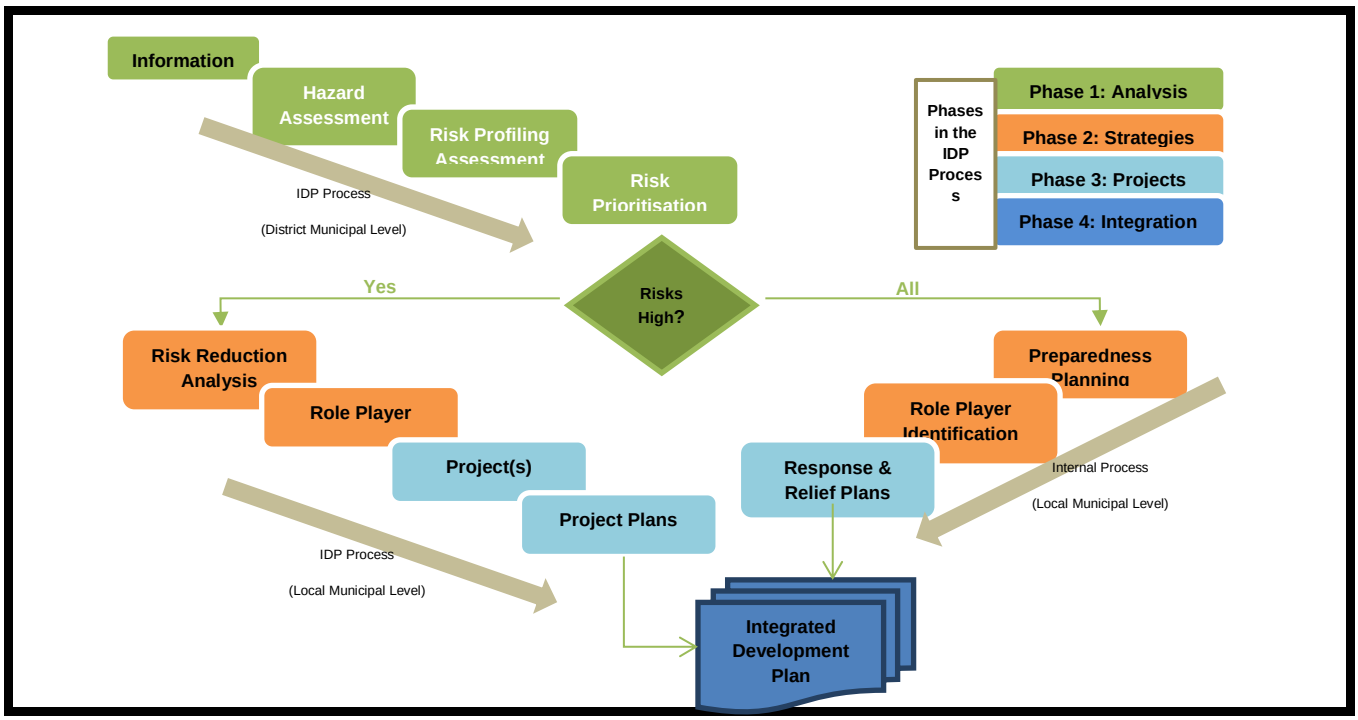


Figure 7: Planning Process for developing a DMP

The Municipal Systems Act and the Disaster Management Act requires the inclusion of the Disaster Management Plan of the O.R. Tambo District Municipality into the Integrated Development Plan (IDP) of the Municipality.

2.5 Structure of the ORTDM Disaster Management Plan (DMP)

The Municipal DMP of the ORTDM is based on the legal requirements described above and consists of the components as indicated in Figure 8. This structure is based on the requirements of the Section 53(2) of the Act, Section 3.1.1.2 of the NDMF, and the proposed outlay of a Disaster Management Plan from the O.R. Tambo District Disaster Management Framework.

Several peripheral documents will support the DMP, the most important being the Risk Assessment Report. It is important to note that this Plan is prepared at a strategic level for inclusion within the IDP process and can therefore not contain too detailed operational planning. Lower level and more specific plans are seen as supporting documents external to the Plan.

In order to comply with the Policy Framework for Disaster Management in South Africa (NDMF), the ORTDM DMP is structured around the four KPA's of the NDMF which is also reflected in the provincial and ORTDM Disaster Management Frameworks.

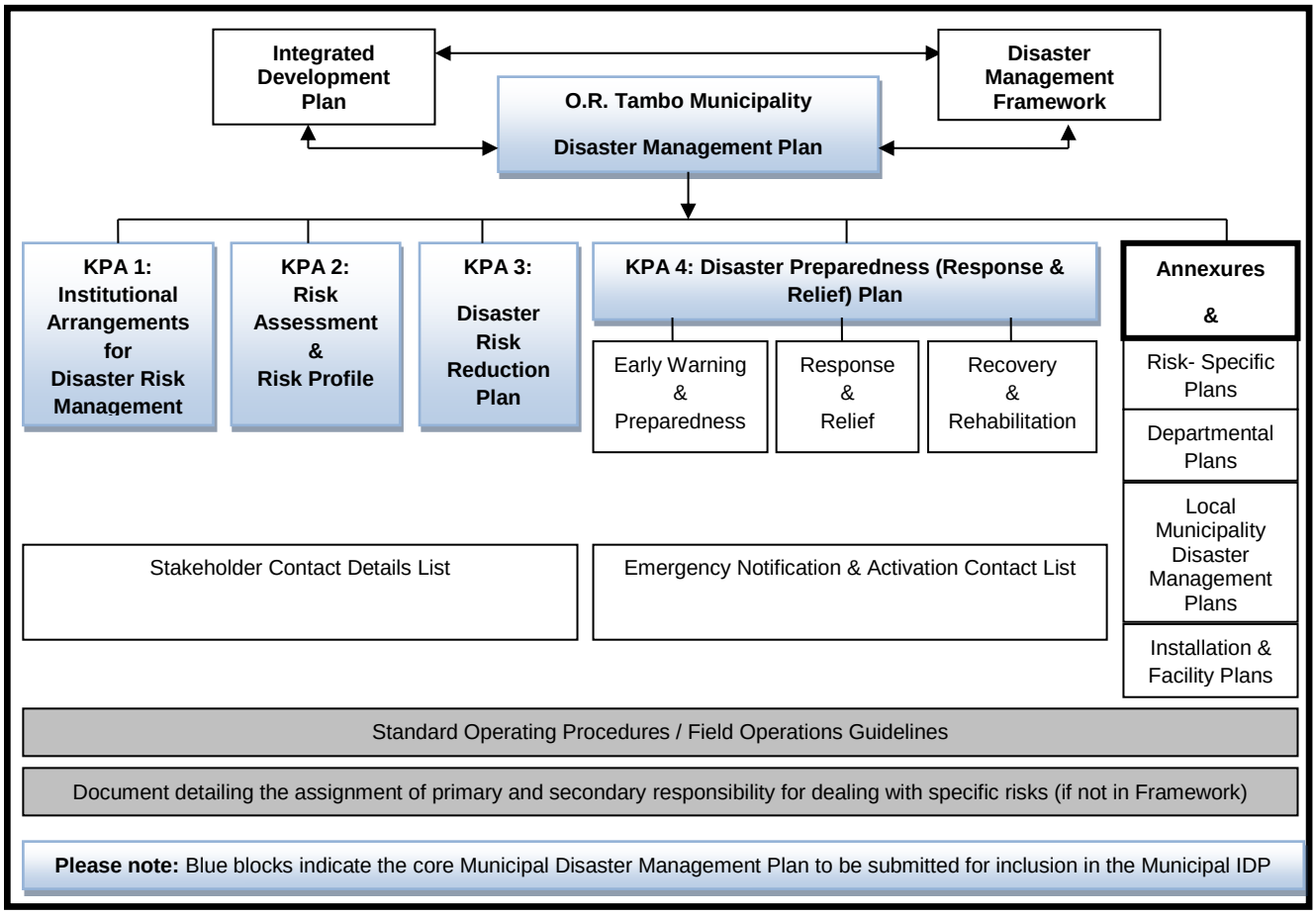


Figure 8: Structure of the O.R. Tambo Municipal Disaster Management Plan

The four key components of the plan are:

- KPA 1: Institutional arrangements for Disaster Management (Institutional Capacity)
- KPA 2: Risk Assessment and Risk Profile
- KPA 3: Disaster Risk Reduction
- KPA 4: Disaster Preparedness (Response & Relief) Plan

Each of these key components will be discussed in more detail in Section 3.

3 KPA 1: Institutional Capacity

This section describes the planning for institutional capacity for Disaster Management within the ORTDM in accordance with KPA 1 of the NDMF.

3.1 Current Institutional Arrangements within ORTDM

The placement of the Disaster Management function currently falls under Community Services. The placement of the function has an influence on its cross-sectoral coordination capacity and should be considered carefully.

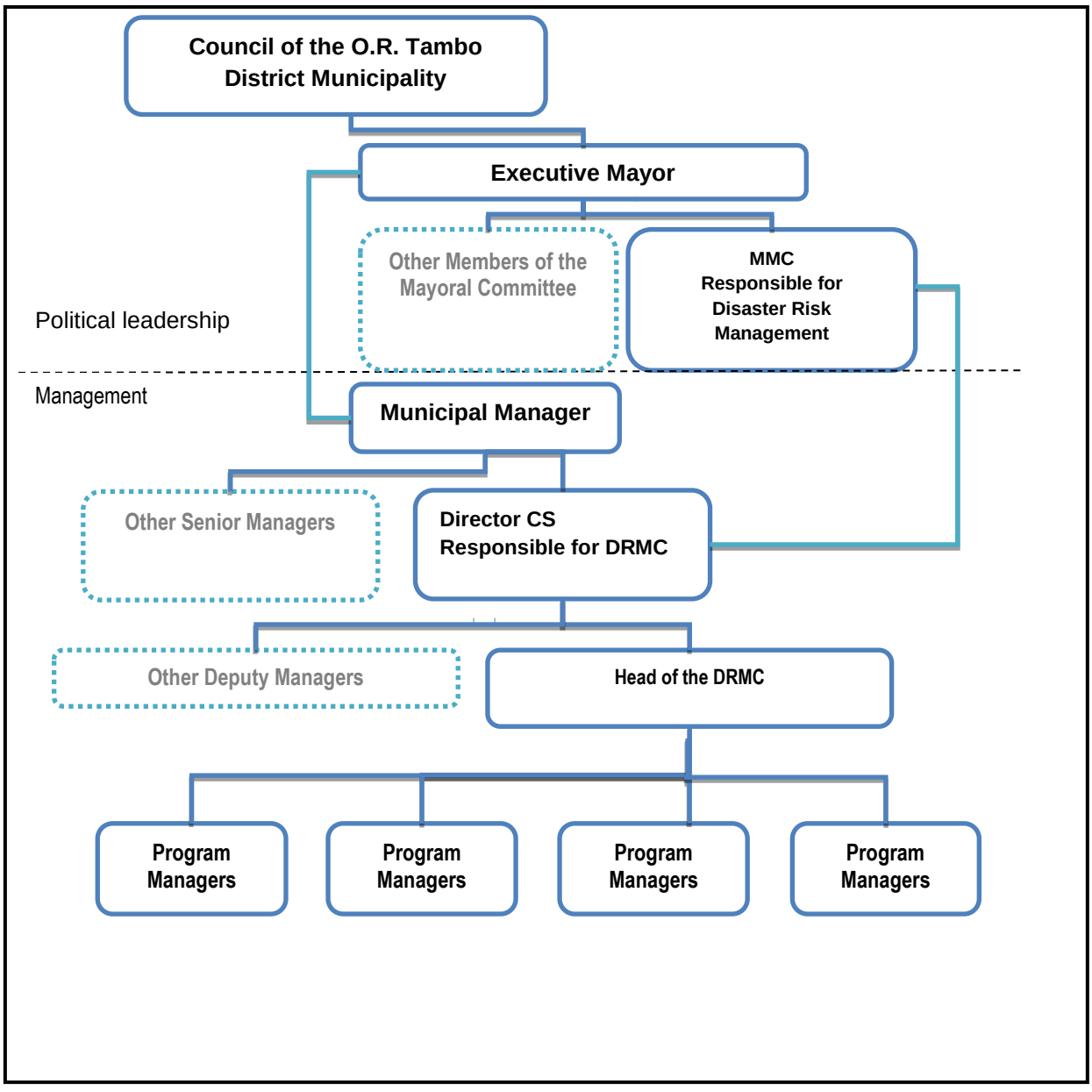


Figure 9. The current placement of Disaster Risk Management within ORT DM

Table 3: ORTDM Disaster Management and Fire & Rescue Services Resources

Fire & Rescue Services:			
Resource Type	**Vehicle Make**	**No. of vehicles**	**Location**
Disaster Management:			
Resource Type	**Vehicle Make**	**No. of vehicles**	**Location**
Bakkie	Toyota D4D D/Cab 4X4	4	PSJ LM Ingquza Hill LM Nyandeni LM Mhlontlo LM
Bakkie	Toyota D4D E/Cab	1	HQ
Hatchback	VW Polo	1	H/Q

(This table to be reviewed on a regular basis)

Experience has shown that disasters do not respond well to individual effort, therefore it is important to have an inclusive approach to Disaster Management, where all role-players and stakeholders work together with Disaster Risk Management officials to reduce disaster risk. The need to spread the responsibility for Disaster Management wider than the a few incumbents within the ORTDM is a necessity, and is based on the idea that there is a shared responsibility for Disaster Risk Management.

3.2 Shared responsibility for Disaster Risk Management

The responsibility for reducing disaster risk, preparing for disasters, and responding to disasters is shared among all departments and employees of the ORTDM, Local Municipalities within the O.R. Tambo District Municipality, all departments and employees of the ORTDM, all provincial and national organs of state operating within the ORTDM, all sectors of society within the ORTDM and, perhaps most importantly, all the residents of ORTDM.

3.2.1 Key outcomes of the Disaster Management Plan

The DMP of the ORTDM seeks to achieve the following key outcomes:

- Integration of Disaster Risk Management into the strategic and operational planning and project implementation of all line functions and role-players within the municipality;
- Informing planning and allocation of resources by municipalities to enable the reduction of community vulnerability;
- Resilient communities; and
- An integrated, fast and efficient response to emergencies and disasters by all role-players.

3.2.2 Focal points for Disaster Risk Management

Although the municipal department within the ORTDM assigned with the Disaster Management function should direct and facilitate the Disaster Risk Management process, it cannot perform the whole spectrum of Disaster Risk Management activities on its own. Disaster Risk Management is everybody's business.

Each municipal department within the District Municipality and in each Local Municipality within the ORTDM must assign a person or section within the department / Local Municipality to be the focal point for Disaster Risk Management activities in that department / Local Municipality. The same applies to Parastatals, government entities, national and provincial departments operating within the area of the municipality. The Disaster Risk Management activities to be performed within departments and in local municipalities include participation in disaster risk reduction as well as preparedness and response.

Action: The Disaster Risk Management Centre of the ORTDM will circulate forms on an annual basis requesting role-players to indicate their focal points for Disaster Management. The forms shall provide space for indicating the department, position and full contact details (also after hours) of the focal point and at least one alternate contact person.

3.2.3 Departments with primary responsibility for specific hazards and disaster risks

Where a municipal department has primary responsibility for a specific hazard, the department's role in Disaster Risk Management for that specific hazard will be more than mere participation: it will have to lead risk reduction as well as preparedness activities due to its expertise in the field. Section 3.4 describes the responsibilities of specific departments within the District in terms of Disaster Risk Management. ORTDM Disaster Risk Management Centre can support such a department with advice, information, facilitation and coordination.

Action: ORTDM Disaster Risk Management Centre will maintain a list of hazards that may affect the municipality with associated primary role-players indicated for risk reduction as well as preparedness for each specific hazard. (See next section for the process of assigning such responsibility.)

The plans for disaster risk reduction and preparedness compiled by these primary role-players should be attached to this plan or should be referenced as supporting documentation as indicated in Figure 8: Structure of the O.R. Tambo Municipal Disaster Management Pla. These documents must be easily accessible to all relevant role-players.

3.2.4 Assignment of responsibility to deal with specific disaster risks

Municipal departments that are responsible for specific services in normal conditions will remain responsible for such services during disasters. The declaration of a state of disaster and the tighter co-ordination instituted during disasters does not absolve any agency of its assigned responsibilities.

Legislation assigns responsibility for most disaster risks to specific departments or functions. There are however grey areas related to some disaster risks, for example there may be some debate around who should be the lead agent for a hazardous materials incident that involves crime / terrorism and injured persons. In order to ensure clear roles and responsibilities and enhance integrated Disaster Risk Management efforts, such grey areas must be addressed and clearly assigned responsibilities must be confirmed.

Action: The risk profile of the ORTDM will be considered by the ORTDM Disaster Risk Management Advisory Forum and primary and supporting role-players will be identified for each identified risk. Such allocation of primary and supporting roles will be done in consultation with all relevant role-players, will be informed by existing legal frameworks, and assignment will be done on a consensus basis.

The above assignment of responsibilities will be revisited and confirmed on an annual basis, and will be recorded and distributed in the format indicated in **Table 4** below.

Table 4: Assignment of primary and supporting role-players for disaster risks

Description of disaster risks identified in the risk profile of the O.R. Tambo District Municipality (Complete one table per risk)	Primary role-player in **risk reduction** to be indicated here	Supporting role-players
	Primary role-player in **preparedness** to be indicated here.	Supporting role-players
	Primary role-player in **response and relief** to be indicated here.	Supporting role-players
	Primary role-player in **recovery & rehabilitation** to be indicated here.	Supporting role-players

The document assigning responsibilities can become an annexure of the Municipal Disaster Management Plan of the municipality, if such assigning of responsibilities has not been dealt with in the Municipal Disaster Management Framework.

The assignment of responsibility for specific hazards or disaster risks will be informed, but not determined, by the assignment of responsibility for risks within the National Disaster Management Advisory Forum. The conditions prevailing within the District will be the determining factor. The number and responsibilities of task teams under the Advisory Forum will be determined by the priority disaster risks identified within the District. This is discussed under the Advisory Forum later in this document.

3.3 Disaster Management Structure for the O.R. Tambo Municipality

In this section a Disaster Risk Management structure for ORTDM is proposed. The corporate structure for Disaster Management will extend beyond only the department directly responsible for Disaster Management to other internal and even external stakeholders that can contribute to the reduction of disaster risk. This section is therefore not solely concerned with the organogram of the ORTDM Disaster Risk Management Centre. Other relationships and key stakeholders must also be described.

While facilities are in existence for a Disaster Risk Management Centre, the organisational structure for a Disaster Risk Management Centre able to perform Disaster Management duties as envisaged within the Disaster Management Act and Disaster Management Framework is not yet in existence. A municipal Disaster Risk Management Centre has been established, but in not full compliance with legislation. The centre currently operates from the DM's premises.

The Disaster Management structure for the O.R. Tambo Municipality must deal with both pro-active and reactive Disaster Management issues and encompasses more than the department which is responsible for the function. From the next sub-section the proposed structure for the ORTDM Disaster Risk Management Centre will be described. The structure can include the elements described but may be collapsed into a smaller number of elements if less complexity is required.

3.3.1 O.R. Tambo Disaster Risk Management

"O.R. Tambo Disaster Risk Management Centre" refers to the department within the municipality assigned with the Disaster Risk Management function. This organisational component should be formally established as the O.R. Tambo Disaster Risk Management Centre to comply with the Disaster Management Act. The Disaster Risk Management Centre of the ORTDM must aim to prevent or reduce the risk of disasters, mitigate the severity or consequences of disasters, prepare for emergencies, respond rapidly and effectively to disasters and to implement post-disaster recovery and rehabilitation within the municipality by monitoring,

integrating, co-ordinating and directing the Disaster Management activities of all role players. A fully established and functioning Municipal Disaster Risk Management Centre is a key element of this Plan.

Action: The O.R. Tambo Municipality must establish and maintain a fully staffed and resourced Disaster Risk Management Centre.

Figure illustrates the recommended organisational design for a Disaster Risk Management Centre which uses a combination of functional specialisation and area-based management. This structure is based on best practice and the recommendations contained within the Policy Framework for Disaster Management in South Africa (NDMF), taking into consideration existing capacity and that capacity may have to be built in phases over time. Recommendations regarding the placement of the Disaster Risk Management function that are contained in the National Disaster Management Framework.

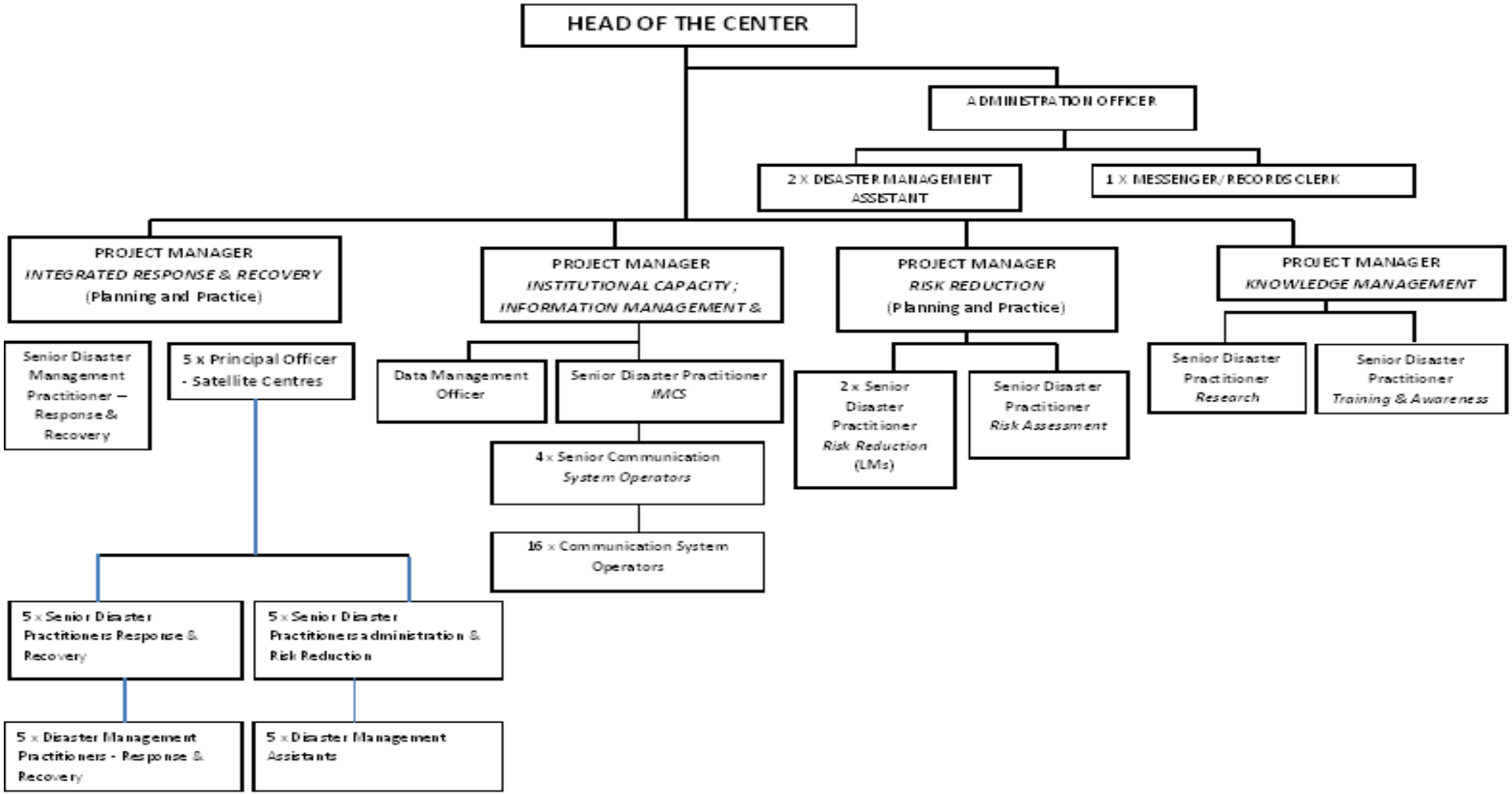


Figure 11: Proposed organisational structure for the DRMC

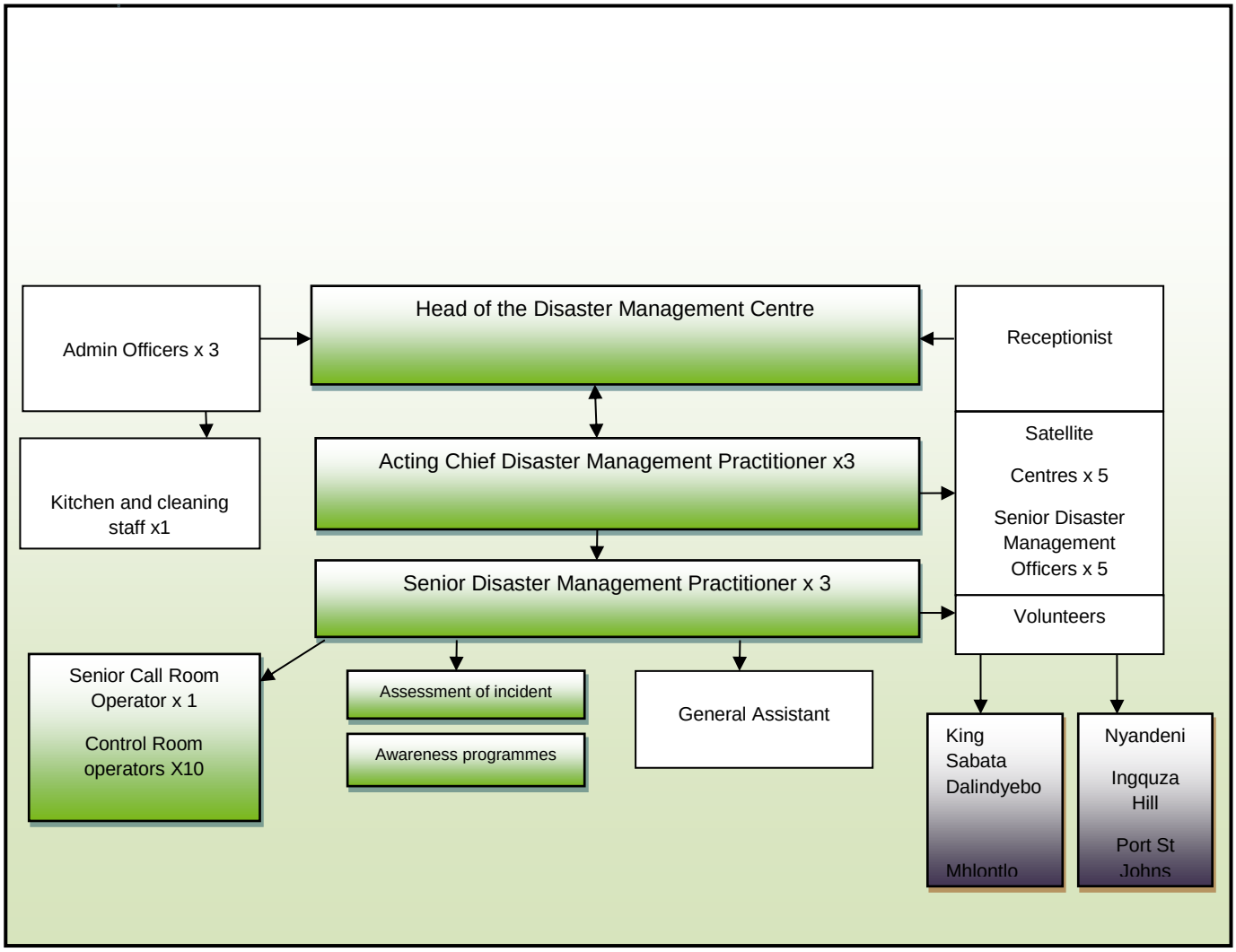


Figure 12: Current DRMC Staff

Solid outlined elements refer to the categories of functions to be performed and not individual posts. Depending on resources, each category of functions can be expanded into several post descriptions or rolled up into fewer separate positions. Solid lines refer to lines of authority and reporting within the District. Elements with dashed outlines refer to co-ordination, consultation and policy-making structures while dashed connecting lines refer to lines of consultation and collaboration.

3.3.2 O.R. Tambo District Disaster Risk Management Advisory Forum

The O.R. Tambo District municipality may establish a District Disaster Risk Management Advisory Forum as described in Section 51 of the Disaster Management Act, No. 57 of 2002. It is advantageous for a District Municipality to establish such a forum to co-ordinate strategic issues related to Disaster Risk Management such as risk assessments and to approve and/or review the Disaster Management Plan for the Municipality before it is submitted to Council. The frequency of meetings of such a body is two to four times per year or as required. Once established, such a forum can play an important role in setting policy and priorities for Disaster Management within the District, and reviewing risk assessments and plans from time to time. The Terms of Reference of the Forum is its founding statement and will determine its functioning. Alternative existing co-ordination structures may also be used to perform the functions of an Advisory Forum, thereby reducing administration and costs. Where other existing coordination structures are available to perform the envisaged functions of an Advisory Forum, it would be prudent to reduce costs and administration and use existing structures instead of creating a new dedicated structure.

Action: The ORTDM will establish a District Disaster Risk Management Advisory Forum and act upon its decision in this regard.

Terms of Reference for the DRMAF are contained within the ORTDM Disaster Risk Management Guidelines.

3.3.3 Interdepartmental Committee on Disaster Risk Management

Internal co-ordination will occur at managerial level where instructions and identified projects from the Advisory Forum can be implemented and tracked. Municipal top-management meetings can serve as a co-ordination forum for Disaster Management issues within the Municipality. Although a dedicated structure can be created for this purpose, this role will be performed by the top-management team of the Municipality to reduce the complexity of the Disaster Risk Management structure. Ad-hoc external representation may form part of the deliberations upon invitation.

Action: The ORTDM will establish a interdepartmental Committee for Disaster Risk Management co-ordination, or will assign this responsibility to the top-management team (of officials) of the Municipality.

3.3.4 Focal points for Disaster Management within municipal departments

Refer to section 3.2 above.

3.3.5 Departmental planning groups

This element relates to planning groups that can be established within departments within the Municipality to deal with internal Disaster Risk Management issues such as the compilation of departmental or local municipal Disaster Management plans and contingency plans for facilities and services of the department or Local Municipality. The Disaster Risk Management focal points of such departments or Local Municipalities will be involved in these planning groups. In a less complex design these groups can be integrated with others to become technical task teams.

Action: Focal points will be empowered and supported by their departments / organisations to establish, manage, and participate in departmental and/or Local Municipal planning groups.

3.3.6 Risk reduction project teams

These are multi-disciplinary project team convened to address and reduce a specific disaster risk. The teams are convened by the primary role-player for the risk and supported by Disaster Risk Management Centre. In a less complex design these teams can be integrated with others to become technical task teams.

Action: The primary role-players for specific hazards or disaster risks, in collaboration with the O.R. Tambo Disaster Risk Management Centre, will establish and manage risk reduction project teams as required or when requested by the Disaster Risk Management Advisory Forum. (Existing structures should be used as far as possible to prevent duplication and reduce the meeting burden on role-players.)

3.3.7 Preparedness planning groups

A multi-disciplinary planning group convened to ensure a high level of preparedness for a specific disaster risk. Convened by the primary role-player for the risk and supported by the Disaster Risk Management Centre. In a less complex design these groups can be integrated with others to become technical task teams.

Action: The primary role-players for specific hazards or disaster risks, in collaboration with O.R. Tambo Disaster Risk Management Centre, will establish and manage preparedness planning groups as required or when requested by the Disaster Risk Management Advisory Forum. (Existing structures should be used as far as possible to prevent duplication and reduce the meeting burden on role-players.)

3.3.8 Joint response & relief management teams

Mostly flowing from a preparedness planning group, this is a team that is mobilised to deal with the immediate response & relief required during or immediately after major incidents and disasters. Such teams will normally convene in the Disaster Operations Centre (see description below). In a less complex design these teams can be integrated with others to become technical task teams.

Action: The preparedness planning group for each hazard will detail how the activation of a joint response and relief management team for that specific hazard will be managed, and who will form part of the team.

3.3.9 Recovery & rehabilitation project teams

These are project teams managing recovery and rehabilitation after disasters, mostly on a project-management basis. Disaster recovery and rehabilitation must focus on risk elimination or mitigation. Departments who are responsible for the maintenance of specific infrastructure are also responsible for the repair or replacement of such infrastructure after disasters. In a less complex design these teams can be integrated with others to become technical task teams.

Action: The preparedness planning group for each hazard will detail how the activation of recovery and rehabilitation project teams for that specific hazard will be managed, and who will form part of the teams.

3.3.10 Technical Task Teams

The Disaster Management Act, Sections 44 and 47, call for a co-ordinated approach for prevention and mitigation that encourages risk-avoidance behaviour by organs of state, the private sector, on-governmental organisations, communities, households and individuals in the municipal area. Thorough Disaster Risk Management planning, refer Sections 52 and 53 of the Disaster Management Act, and effective co-ordination is the key to saving lives and limiting damage to property, infrastructure and the environment. This is also necessary for the optimal utilization of available resources. The following four task teams will ensure hazard specific research, risk prevention and reduction, mitigation and preparedness measures:

- **Natural Hazards**: This task team will consider all potential geological and hydro meteorological hazards that can manifest in the O.R. Tambo District Municipality e.g. earthquake, floods, severe storms and drought;
- **Biological Hazards**: Strictly speaking biological hazards form part of the natural hazard grouping, but due to the expert scientific knowledge needed for human, fauna and flora disease identification and control this must be handled as a separate task team. Examples include typhoid fever, rabies, TB and influenza strains;
- **Environmental Degradation**: This task team will study and analyse processes induced by human behaviour and activities (sometimes combined with natural hazards), that damage the natural resource base or adversely alter natural processes or ecosystems. Such processes, if not altered, will negatively impact on sustainable livelihoods and the continued use of natural resources and examples include water, air and soil pollution;
- **Technological Hazards**: This task team will evaluate the danger originating from technological or industrial accidents, dangerous procedures or certain human activities, which may cause the loss of life or injury, property damage, social and economic degradation. Examples include dam failure, road / rail / aircraft accidents and hazardous materials spills.

Methodology: All identified hazards must be evaluated and prioritised according to the methodology contained in the risk assessment chapter in that each identified hazard will be assessed in term of its probability and severity of occurring, manageability and vulnerability.

Each task team must identify a lead agency and or department and the enabling agencies or departments that will assist with the assessment of the identified hazards. The task teams must ensure the identification of resources needed to address the potential threat of hazards. This refers to capacity (material resources) and capability (trained individuals) to ensure that risk reduction initiatives are put in place. The respective task teams must operationalise the plans and evaluate the success of implemented measures.

Written reports regarding activities must be submitted to the Head of the O.R. Tambo DRMC who in turn will submit it to the O.R. Tambo Disaster Risk Management Advisory Forum. In the case of large incidents or threatening or realised disasters the respective technical task teams will advise the ORTDM Disaster Risk Management Centre on appropriate actions and management requirements.

3.3.11 O.R. Tambo Disaster Management Communications Centre

This is the centre providing 24-hour emergency and essential services contact points to the public within the municipal area. The Centre is responsible for day-to-day emergency response by municipal departments and for the establishment of strategic communication links. The O.R. Tambo Disaster Management Communications Centre will liaise closely with the Emergency Control Centres / Groups of the Local Municipalities and other stakeholders within the ORTDM on an on-going basis. It would be possible to reduce costs and increase inter-service collaboration by combining the responsibilities and functions of district-wide emergency services, fire control centres and law enforcement control centres in one facility within the Disaster Risk Management Central Communications Centre.

Action: O.R. Tambo Disaster Risk Management Centre supported by the district municipality will establish and maintain a fully staffed and resourced Disaster Management Central Communications Centre and if required collaborate with other agencies to maintain 24-hour per day, 7 days per week public emergency call-taking capacity.

3.3.12 O.R. Tambo Disaster Operations Centre (DOC) / Joint Operations Centre (JOC)

The ORTDM DOC is a facility equipped to serve as command and co-ordination centre during disasters, where the joint response & relief management team will convene. Alternative facilities should be identified as back-up to the primary DOC. The term JOC for Joint Operations Centre can also be used for this facility.

Action: O.R. Tambo Disaster Risk Management Centre will identify, establish and maintain a fully staffed and resourced Disaster Operations Centre for activation as required and will identify fall-back or alternative facilities for the same purpose. Figure 10 illustrates how the components described above would interact with each other. It is important to note that this is a proposed organisational structure, but rather a proposal in terms of lines of communication and collaboration.

As a first phase the system and radio communications were rolled out at the District Disaster Risk Management Centre and were then in the second phase further rolled out to the local municipalities. The following municipal role players were included in the project scope: Water, Fire, Disaster Management and Traffic. The solution includes a Computer Aided Dispatch, Web GIS, Mobile data capture, automated emails/sms, radio solution, CCTV, biometric access and voice recording. We integrate Oracle, SQL, MySQL and MS Access to provide the client with a holistic view. The client gains access to the system through a citrix (remote desktop) platform, or sharepoint. The system also sends triggered and automated email reports and sms.

Some of the other technologies that were implemented as part of the solution includes:

- Java application for mobile devices where the user can capture any data in the field, take photos and get a GPS location;
- ArcGIS online mapping functionality. We prepare the maps and add their data for them to view, share and edit through their link in our IIMP;
- Qlikview data mining and business intelligence to assist our clients in analysis their data and monitoring performance through visually appealing dashboards;
- Ya-Click Satellite communication for failover data and voice communication; and
- Motorola Radio solution to communicate with EMS (Ambulance Services), SAPS, Fire, Disaster Management, Water Services, Environmental Services to facilitate a comprehensive coordination role as required by legislation.

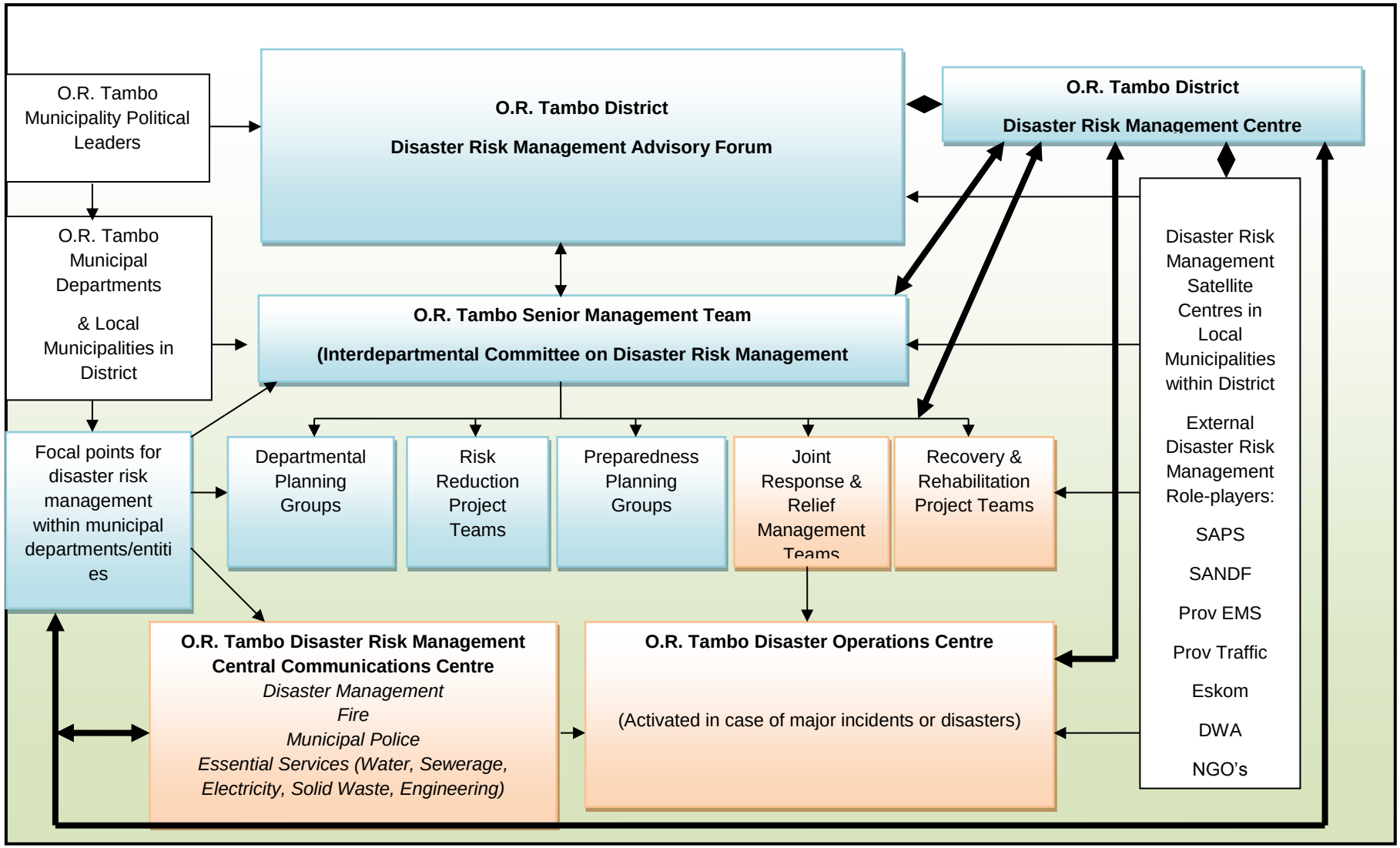


Figure 10: The Proposed District Disaster Management Coordination and Collaboration

3.4 Institutional Responsibilities

The main ORTDM stakeholders have specific responsibilities with regards to disaster prevention/risk elimination projects and disaster response scenarios. The primary objective of each municipal stakeholder must be to contribute, from their specific areas of expertise, to the prevention of the occurrence of emergencies or disasters that threaten life, property, the environment or economic activity in the ORTDM in keeping with Chapter 5 and Section 52 of the Disaster Management Act.

3.4.1 Executive Mayor

The Executive Mayor is ultimately in charge of the emergency / (threatening) disaster. The Executive Mayor or Acting Executive Mayor, as Head of Council, is also responsible for:

- Declaring a state of disaster to exist;
- Notify the MEC of Local Government of the declaration of a local state of disaster and the termination of the declaration of a state of disaster;
- With the assistance of Municipal staff, ensure that the Municipal Councillors are advised of the declaration and termination of declaration of the state of disaster and are kept informed of the (potential) impact of the event(s); and
- Ensuring that the public, the media and neighbouring municipal officials are also advised of both the declaration and termination of a state of disaster.

3.4.2 The Municipal Manager

To ensure disaster prevention, risk reduction and disaster preparedness, the Municipal Manager must ensure that the Disaster Risk Management function is executed in an effective and efficient manner in the area of the ORTDM.

Before, during and after emergencies or disasters it will be the responsibility of the Municipal Manager to personally, or through Disaster Risk Management Centre:

- Report, liaise and consult with the Executive Mayor and external provincial and national government departments on emergency impact and response to the Mayor;
- Report on event impact and response to the Councillor(s) for the affected area(s);
- Report on event impact and response to the remaining Councillors;
- Notify next of kin when a District employee is injured, missing or killed;
- Authorize extraordinary expenditures in consultation with the Executive Mayor; and
- Identify persons/organizations to receive recognition for contributions to emergency response.

3.4.3 Head of the Disaster Risk Management Centre

The Head of the Disaster Risk Management Centre is responsible for all powers and duties as situated in section 45(2) and section 44(3) of the DM act, including the compilation, maintenance and distribution of the District Disaster Management Plan and it's supporting risk-specific and incident management plans. The Head is also responsible for the performance of the Centre with regards to its Disaster Risk Management functions and to implement and co-ordinate the Disaster Management Act. In addition, the Head need to ensure that Disaster Risk Reduction institutional arrangements address all capability (skills) and capacity (resource) needs, which includes, but is not restricted to:

- A dedicated Disaster Management communication system;
- Community based risk assessment at regular intervals;
- Community based aspect specific skills enhancement;
- High risk hazard research through the advisory forum technical task teams;
- Access to emergency supplies;
- Exercise response and contingency plans; and
- Ensure "memoranda of understanding" and "mutual aid agreements" with neighbouring local government and private entities.

Additional management responsibilities are described in Annexure C. Management responsibilities include information management, which is an important aspect of institutional capacity.

In the next section information management will be discussed.

3.5 Information Management

The ORTDM currently uses off-the-shelf business tools for electronic communication and information management. Such standard tools can be used successfully if the right information is captured at the right time and place and shared with the right people. There is however always room for improvement and would be appropriate for the district to invest in information management infrastructure that supplements its current information technology infrastructure and enables the rapid sharing of critical information during emergencies, and the comprehensive collection of risk information to inform risk reduction efforts.

3.5.1 Essential Elements

Three essential elements of a complete information infrastructure are:

- Knowledge infrastructure. Encompasses the systems of measurement, methods of data visualization and exploitation, information analysis, event forecasting, knowledge modelling and data and information management;
- Interconnectivity infrastructure. Encompasses the modes of communication employed to retrieve and distribute data and to disseminate the information products, knowledge and understanding developed within the knowledge infrastructure;
- Integration infrastructure. Encompasses the process needed to ensure that the "mechanical" parts of the system are synchronized and that the "human" parts of the system are cooperating. The integration infrastructure is key to an effective overall information infrastructure as it addresses:
  - The tracking of system performance to user requirements;
  - The definition of standards and protocols necessary to ensure system interfaces are understood;
  - The methods, processes, and procedures to ensure quality and reliability of the knowledge base; and
  - The training needed to ensure users can effectively use the system.

3.5.2 Information Cycle

Information management is a systematic cycle:

- Needs identification. The first steps in establishing any information management system are to:
  - Monitor the external environment to identify problems as they evolve and to be responsive to issues that are identified from outside the system.
  - Define the problems to be addressed.
  - Identify the information requirements that flow from them.
  - Identify who is to benefit from the information.
- Collection. The collection plan (data gathering) should focus on the essential elements of information that have been identified, with collection priorities flowing from the profiles of need. In the process of data gathering it is important to employ all the data capture resources available (quantitative and qualitative). As part of the collection process the gathered information must be supplied to those who need it. Another important aspect is to involve the end users of the information in the construction and development of the collection process too not only ensure that their needs are satisfied, but to also maximise acceptance of the process by the users as well as the establishment of solid baseline. Important management functions include planning, organizing, controlling and influencing the collection process.
- Processing. During this stage answers to the various questions are developed by converting data into information. This calls for a system that facilitates the collation, analysis, evaluation and interpretation of the data collected.
- It is crucial to ensure that information processing for Disaster Risk Management is not totally dependent on technology or the skill and experience of one person. Information processing is not the sole responsibility of the disaster manager. Specialists could process data, but the end results need to be

made available in a format that is easily understood and applicable. Therefore the aim is to supply the decision maker with information that can clarify particular problems and to make informed choices. As much as possible processing could and should be done during the pre-disaster risk reduction phase so as to ensure effective and timely hazard specific mitigation, prevention and preparedness. The most important attributes of information processing are:

- Timeliness – the delivery of data and information in time to drive decision-making;
- Consistency – delivery of data and information in a consistent and uniform manner;
- Understandability – delivery of data and information in a manner that is appropriate and understandable in the target community;
- Accuracy- precision in measurement and observation; and
- Flexibility, adaptability to multiple situations.

- Dissemination. The final process in the cycle is the timely distribution of information to those who need it to make decisions. The inherent ability of modern distribution systems to present processed information in a variety of formats greatly assists the dissemination of information and also contributes to better understanding. It is of no use to only know end user information needs, as these needs have to be satisfied and could, *inter alia*, be addressed via:
  - Simple text descriptions – easily understood and uncomplicated verified facts;
  - Levels of warning – brief explanation of the hazard, its progression, cautionary advice and status;
  - Simple diagrams – locality maps, north point, scale, full key that is faxable or printable, preferably in black and white;
  - Imagery – photographs, aerial photographs, and satellite imagery;
  - Interpreted imagery as maps – reflecting pertinent items such as flood lines, lava flows and access/egress routes;
  - Contact details – e-mail addresses, telephone/fax numbers of persons, services and installations;
  - Registering for automatic updates – via telephone, e-mail and/or fax – in order to obtain latest developments;
  - Meteorological data – updating on changing weather conditions;
  - Hazard onset speed/rates – predictions on hazard movement/impact such as flood fronts and fire fronts in order to extrapolate events;
  - Web links, addresses/phone/fax indicating "further information" which should include explanations as to value and information type; and
  - Information on other technology – web sites that refer to radio bulletins and vice versa.
- Documents (downloadable, printable copy-able) publications covering warning notices, access maps and daily bulletins for display/distribution and personal accreditation/identity cards.

3.5.3 Functions

The information management system must be able to support all of the following functions:

- Hazard, vulnerability and risk analysis;
- Quantitative and qualitative research coordination;
- Data administration;
- Baseline data identification;
- Effective communication and secure data sharing;
- Monitor preparedness, mitigation and preventative planning and implementation;
- Volunteer administration;
- Operate an early warning network;
- Early warning evaluation;
- Event mapping;
- Emergency response and specific tasking (activation);
- Resource deployment and monitoring;
- Monitor and evaluate:
  - Response;
  - Rehabilitation;
  - Reconstruction;
- Executive Briefings;

- Control documentation – Standard Operating Procedures (SOPs), protocols, reports, framework for strategic decision taking, job descriptions, checklists etc.; and
- Identification of gaps in information.

In addition to the above the Municipal Disaster Risk Management Satellite Centres within the District must communicate all its findings to the District Disaster Risk Management Centre to ensure an up to date regional indicative risk profile of the disaster threat.

3.5.4 Information and Geographical Information System

As a proactive measure to prepare for event response, a geographical information management system must be utilized to enter crucial data into prior to a disaster to provide a base map for change detection, probable damage assessment, and the presentation of scientific verifiable impacts.

GIS can, for risk assessment purposes, be applied as follows:

- Hazard mapping. A very common use of GIS in risk assessment is the preparation of hazard maps e.g. for cities, regions or an entire country and large tracts of space. Hazard maps serve as risk zone identifiers, are easy to understand and are of great help to planners and developers, since they serve as a quick identifier of risk prone areas;
- Threat maps. The purpose of threat maps is to quickly communicate the risks to people and can be overlapped with population and land use maps to arrive at meaningful conclusions. These maps could be supplied to the media for effective warning communication;
- Government planning for Disaster Risk Management. It is well known that regional planners require sophisticated risk assessment tools and GIS can not only reflect spatial and non-spatial data, but can also contain built in risk assessment programmes that allow planners and Disaster Risk Management functionaries to simulate disaster scenarios and graphically view the potential damages and affected areas as well as plan rescue operations;

3.5.5 Community Information Needs

The Head of the Disaster Risk Management Centre must make sure that community information needs will:

- Increase their capacity to prepare, prevent and mitigate for and respond and recover from a disaster in their specific environment;
- Address social, cognitive and organizational needs in the pre- and post-disaster phases as well as response needs;
- Support the changing roles of individuals and organizations, as there is a need to adapt to shifting needs during disasters without compromising established disaster management guidelines.

The Disaster Risk Management Centre must provide information to communities in a form that will allow them to make their own decisions. Emergency managers need the knowledge, skills and attitudes to enable them to work with communities rather than just for them. This statement implies a partnership between the disaster manager and the different communities in the area of responsibility.

3.6 Gaps and recommendations

Various required actions were identified throughout this chapter that will address gaps in the current institutional capacity for Disaster Management within the ORTDM. These identified actions are summarised as recommendations in the table below for easy reference:

Table 5: Recommendations for Institutional Capacity in the ORTDM

Action	Description
1	An annually revised database of the responsible persons in the sector departments is maintained by ORTDM Disaster Risk Management Centre.
2	ORTDM Disaster Risk Management Centre will maintain a list of hazards that may affect the ORTDM with associated primary role-players indicated for risk reduction as well as preparedness for each specific hazard.
3	The disaster risk profile of the ORTDM will be considered by the ORTDM Disaster Risk Management Advisory Forum and primary and supporting role-players will be identified for each identified risk. Such allocation of primary and supporting roles will be done in consultation with all relevant role-players, will be informed by existing legal frameworks, and assignment will be done on a consensus basis.
4	The ORTDM will establish and maintain a fully staffed and resourced Disaster Risk Management Centre.
5	The ORTDM will establish a Municipal Disaster Risk Management Advisory Forum and act upon its decision in this regard.
6	The ORTDM will establish a interdepartmental Committee on Disaster Risk Management, or will assign this responsibility to the top management team (of officials) of the ORTDM
7	Focal points will be empowered and supported by their departments / organisations to establish, manage, and participate in departmental planning groups
8	The primary role-players for specific hazards or disaster risks, in collaboration with the ORTDM Disaster Risk Management, will establish and manage risk-reduction project teams as required or when requested by the Disaster Risk Management Advisory Forum. (Existing structures should be used as far as possible to prevent duplication and reduce the meeting burden on role-players.)
9	The primary role-players for specific hazards or disaster risks, in collaboration with ORTDM Disaster Risk Management Centre, will establish and manage preparedness planning groups as required or when requested by the Disaster Risk Management Advisory Forum. (Existing structures should be used as far as possible to prevent duplication and reduce the meeting burden on role-players.)
10	The preparedness planning group for each hazard will detail how the activation of a joint response and relief management team for that specific hazard will be managed, and who will form part of the team.
11	The preparedness planning group for each hazard will detail how the activation of recovery and rehabilitation project teams for that specific hazard will be managed, and who will form part of the teams.
12	The ORTDM will consider the establishment of Task Teams responsible for clusters of hazards and implement its decision in this regard.
13	ORTDM Disaster Risk Management Centre will establish and maintain a fully staffed and resourced Disaster Management Central Communications Centre and if required collaborate with other agencies to maintain 24-hour per day, 7 days per week public emergency call-taking capacity.
14	ORTDM Disaster Risk Management Centre will establish and maintain a fully staffed and resourced Disaster Operations Centre for activation as required and will identify fall-back or alternative facilities

	for the same purpose.
15	The ORTDM must identify skill shortages among employees within the Disaster Risk Management field and specific skill sets that are in demand. Accordingly they should recruit adequately trained staff and/or provide improved training and capacity development to current staff.
16	ORTDM Disaster Risk Management Centre will consult with the relevant role-players until clarity exists regarding roles and responsibilities for Disaster Risk Management within the ORTDM. Updates regarding institutional responsibilities should be made regularly (at least once a year) to ensure validity and currency.
17	ORTDM Disaster Risk Management Centre will consider the implementation of an information management system to support the full Disaster Management business process.

Implementing the recommendations listed in the table above will establish robust institutional capacity for Disaster Risk Management within the District that will be able to confidently reduce disaster risks threatening the communities of the ORTDM. In the next chapter the disaster risk profile of the ORTDM will be discussed.

4 KPA 2: Risk Assessment

Disaster Risk Assessment is the first step in planning an effective disaster risk reduction programme. A Disaster Risk Assessment examines the likelihood and outcomes of expected disaster events. This includes investigating the related hazards and conditions of vulnerability that increase the chance of loss. The Risk Assessment done for the purpose of this Disaster Management Plan included a literature review, the identification and consulting of sources of historic information, and workshops and focus groups with subject specialists and Disaster Risk Management stakeholders within each of the Local Municipalities within the District.

4.1 Risk Profile of the O.R. Tambo District Municipality

Various disaster risks have been identified and assessed during 2009 and 2013, as set out in detail in the various Risk Assessment Reports[4]. The guidelines accompanying this document describe the Risk Assessment methodology.

The first step in developing a risk profile is hazard identification. A hazard is a potentially damaging physical event, phenomenon or human activity, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards are typically categorised into Natural, Technological and Environmental hazards.

Natural hazards are natural processes or phenomena occurring in the biosphere that may constitute a damaging event. Natural Hazards are typically classified into:

- *Geological Hazards*: Natural earth processes or phenomena in the biosphere, which include geological, neo-tectonic, geo-physical, geo-morphological, geo-technical and hydro-geological nature.
- *Hydro Meteorological Hazards*: Natural processes or phenomena of atmospheric, hydrological or oceanographic nature.
- *Biological Hazards*: Processes of organic origin or those conveyed by biological vectors, including exposure to pathogenic micro-organisms, toxins and bioactive substances.

Technological hazards constitute danger originating from technological or industrial accidents, dangerous procedures or certain human activities, which may cause the loss of life or injury, property damage, social and economic degradation.

Environmental hazards are processes induced by human behaviour and activities (sometimes combined with natural hazards), that damage the natural resource base or adversely alter natural processes or ecosystems.

The identification of typical hazards in the ORTDM was based on an extensive Disaster Risk Assessment compiled for ORTDM by SRK consulting. This was supplemented by desktop research and workshop consultations to arrive at the list of hazards indicated in **Table 6**.

[4] *Disaster Risk Assessment Report.* 2011. Final Report prepared for the OR Tambo District Municipality. November 2011.

Table 6: Identified hazards in O.R. Tambo District Municipality

NATURAL HAZARDS	
Hydro Meteorological Hazards	
Flood	Severe Storms:
Drought	Strong Winds/Tornado
	Lightning
	Hail And Cold Snap
Biological Hazards	
Animal Diseases:	Human Diseases:
African Swine Fever	Tuberculosis
Foot And Mouth	Cholera
	HIV/Aids
Veldfires	
Geological Hazards	
Landslides, Rock Fall And Mudflow	
Sinkholes	
TECHNOLOGICAL HAZARDS	
Road Accidents	Structural Failure (Mud Hut Failure, Bridges)
Maritime Accidents – Oil Spills	
HAZMAT by Road/Rail	
Fire: Structural	
Critical Infrastructure Disruption	
Key Service Disruption	
ENVIRONMENTAL HAZARDS	
Overgrazing	Land degradation
Soil erosion	Ground/surface water pollution
Loss of biodiversity	
Coastal Erosion	

The table above illustrate the types of hazards that pose disaster risk within the ORTDM and their possible effects. The communities at risk can be derived from the risk lists, and are also shown in the Risk Assessment that was conducted for the area.

More detailed risk descriptions, inclusive of hazards, vulnerability and capacity descriptions are available in the respective detailed Risk Assessment documents[5].

4.1.1 Relative Risk Priorities

To ensure that all the parameters (Hazard Score; Vulnerability Score; Coping Capacity Score) required for calculating risk were equally weighted, all their respective scores were reclassified and rated from 1 to 3.

Calculate Relative Risk Priorities: The following simple mathematical model was used to calculate the relative priorities of the risks to which the communities in each region are exposed:

Relative Risk Priority Score = Hazard rating X Vulnerability rating /Coping Capacity Score

- ***Extremely High Risks*** *(Relative Risk Priority ≥ 7)*: Should the relative risk priority of a particular hazard event impacting on a community be higher than or equal to 7, that community faces a potentially ***destructive*** risk with a high probability of occurrence, for which they are ***unprepared***. This combination equates to an **extremely high risk** and is a disaster in the making. For these **extremely high risks** you must prepare **urgent risk reduction interventions.**
- ***High Risks*** *(4.5 ≤ Relative Risk Priority < 7)*: If the relative risk priority of a particular hazard event impacting on a community is between 4.5 and 7, the risks to which these communities are exposed are potentially destructive, but the community is modestly prepared for the hazard event occurrence. This combination equates to a **high risk** and you must prepare a combination of **risk reduction interventions** and **preparedness plans** for these risks.
- ***Tolerable Risks*** *(2 ≤Relative Risk Priority < 4.5)*: Relative risk priorities of a particular hazard event impacting on a community between 2 and lower than 4.5 translate into an acceptable risk for a largely prepared community. This combination equates to a **tolerable risk** and you must prepare **preparedness plans** for these risks
- ***Low Risks*** *(Relative Risk Priority < 2)*: Relative risk priorities of a particular hazard event impacting on a community lower than 2 translate into a very small risk for a largely prepared community. This combination equates to a **low risk** and **any hazard preparedness plans** are sufficient for these risks.

[5] Disaster Risk Assessment Report. Final Report for the OR Tambo District Municipality. 2011.

Hazard	Jurisdiction / Local Municipality	Affected Area	Hazard Indices			Vulnerability Indices					Managability / Capacity to Cope indices									Relative Risk Rating	Relative Risk Priority
		Options: Whole area affected, various distributed pockets affected within area, several points affected within area, single pocket / point affected within area.	**Score:** **3**=Likely **2**=Normal **1**=Unlikely	**Score:** **3**=Extreme **2**=Moderate **1**=Insignificant	Hazard Rating	**Vulnerability Score:** **1**=Not Vulnerable **2**=Vulnerable **3**=Extremely Vulnerable				Vulnerability Rating	**Managability / Capacity to Cope Score:** **1**=Poor **2**=Modest **3**=Good								Managability Rating		
			Probability	Severity		Societal	Economic	Environmental	Critical Facilities		Awareness	Legislative Framework	Early Warning Systems	Government Response	Government Resources	Existing Risk Reduction Measures	Public Participation Measures	Municipal Management Capability			
Floods	ORTDM	Whole area	3	3	9	3	3	2	3	11	1	1	1	2	1	1	1	2	10	9.900	high
Drought	ORTDM		2	3	6	3	3	2	1	9	2	1	2	1	1	1	2	1	11	4.909	tolerable
Strong Winds/Tornado	ORTDM		3	2	6	3	2	2	2	9	2	1	1	1	1	1	2	1	10	5.400	tolerable
Lightning	ORTDM		3	1	3	2	2	2	2	8	2	1	1	1	1	1	2	1	10	2.400	low
Hail and Cold Snap	ORTDM		2	2	4	3	2	2	1	8	2	1	1	1	1	2	2	2	12	2.667	low
Veldfires	ORTDM		3	3	9	3	2	3	2	10	2	2	1	2	1	2	1	2	13	6.923	tolerable
Human Disease	ORTDM		3	3	9	2	2	1	2	7	3	2	2	2	2	2	2	1	16	3.938	tolerable
Animal Disease	ORTDM		2	2	4	3	2	2	2	9	2	1	1	2	2	2	2	1	13	2.769	low
Landslides, Rockfalls and Mudflows	ORTDM		3	1	3	2	1	2	1	6	2	1	1	2	2	2	2	1	13	1.385	low
Sinkholes	ORTDM		2	1	2	2	1	1	1	5	2	1	1	1	2	1	1	1	10	1.000	low
Road Accident	ORTDM		3	3	9	2	2	1	1	6	2	2	1	2	2	1	1	1	12	4.500	tolerable
Fire (Structural)	ORTDM		3	3	9	3	2	2	1	8	2	2	1	2	1	2	1	1	12	6.000	tolerable
HAZMAT Spill	ORTDM		2	2	4	3	1	2	2	8	1	2	1	1	2	2	1	1	11	2.909	low
Critical Infrastructure Disruption / Key Service Disruption	ORTDM		3	3	9	2	1	2	2	7	2	2	1	1	1	1	2	1	11	5.727	tolerable
Structural Failure (Mud dwellings, bridges)	ORTDM		3	1	3	3	1	1	2	7	1	2	1	2	1	1	2	1	11	1.909	low
Shipping Incident (Oil Spill)	ORTDM		1	3	3	3	2	3	1	9	1	2	1	2	1	2	1	1	11	2.455	low
Soil Erosion	ORTDM		3	3	9	2	1	3	1	7	2	1	1	2	2	2	2	1	13	4.846	tolerable

Overgrazing	ORTDM		3	3	9	2	2	3	1	8	2	1	1	1	2	2	2	1	12	6.000	tolerable
Loss of Biodiversity	ORTDM		2	2	4	2	1	3	1	7	2	2	1	1	2	2	2	1	13	2.154	low
Coastal Erosion	ORTDM		3	1	3	3	1	2	2	8	2	1	1	2	2	1	1	1	11	2.182	low
Land Degradation	ORTDM		3	3	9	3	3	3	1	10	2	2	1	2	1	2	1	1	12	7.500	high
Ground/Surface Water Pollution	ORTDM		3	2	6	2	2	3	2	9	2	2	1	2	1	2	2	2	14	3.857	tolerable

Table 7: Risk Prioritisation for the O.R. Tambo District Municipality

4.1.2 Risk Summary

In this section the results of the risk assessment conducted within the ORTDM are summarised.

The table below provides a district-wide view of which hazards were found to be most prevalent within the district, influencing the majority of local municipalities.

Hazard classification and identified hazards in the ORTDM

HAZARD CATEGORY	**HAZARDS IDENTIFIED IN ORTDM**
NATURAL HAZARDS These are natural processes or phenomena occurring in the biosphere that may constitute a damaging event. Natural Hazards are typically classified into:	
***Hydro-Meteorological** Hazards*: Natural processes or phenomena of atmospheric, hydrological or oceanographic nature	Floods Drought Severe storms: Lightning Strong wind/tornado Hail and/or Cold Snap
Geological Hazards: Geological hazards include internal earth processes, such as earthquakes and related geophysical processes such as mass movements, landslides, rockslides, surface collapses, debris or mud flows.	Landslides, rock fall, mudflow Sinkholes
Biological Hazards: Processes of organic origin or those conveyed by biological vectors, including exposure to pathogenic micro-organisms, toxins and bioactive substances	Veld fire Human diseases *(Cholera, HIV/Aids, Tuberculosis)* Animal diseases *(African swine fever, Foot and Mouth)*
TECHNOLOGICAL HAZARDS: Technological hazards are defined as danger originating from technological or industrial accidents, dangerous procedures or certain human activities, which may cause the loss of life or injury, property damage, social and economic degradation.	Transport accidents Railway accidents HAZMAT by road/rail Service delivery failure or disruption Critical infrastructure disruption Structural collapse/failure Structural fire Shipping incident – Oil Spill
ENVIRONMENTAL HAZARDS: These are processes induced by human behaviour and activities (sometimes combined with natural hazards), that damage the natural resource base or adversely alter natural processes or ecosystems[6].	Loss of biodiversity Soil erosion Coastal Erosion Overgrazing Air pollution Land degradation Surface water pollution Groundwater pollution

Table 8: ORTDM Common Hazards

[6] **United Nations International Strategy for Disaster Reduction.** 2002. *Living with Risk: A Global Review of Disaster Reduction Initiatives.*

Risk rating

For the majority of the hazards rated as high risks the local role-players allocated a “3” for severity which is extreme. This means that the majority of these hazards will affect most of the affected area with multiple deaths and injuries and that it can potentially have a national impact with significant environmental damage. The probability of the majority of these hazards was rated as likely: “3”, meaning that it will happen more than once a year. In addition the vulnerability of the environment for the majority of these hazards was rated as “3” implying that critical habitats and species will be affected as there is limited environmental protection in place. The capacity of the local communities of municipalities to cope with these hazards was rated at “1” meaning that there are limited resources available to manage a disaster and deal with its aftermath.

Table 9 ORTDM Risk Prioritisation

Hazard	Relative Risk Priority
Floods	high
Land Degradation	high
Veldfires	tolerable
Fire (Structural)	tolerable
Overgrazing	tolerable
Critical Infrastructure Disruption/Key Service Disruption	tolerable
Strong Winds/Tornado	tolerable
Drought	tolerable
Soil Erosion	tolerable
Road Accident	tolerable
Human Disease	tolerable
Ground/Surface Water Pollution	tolerable
HAZMAT Spill	low
Animal Disease	low
Hail and Cold Snap	low
Shipping Incident (Oil Spill)	low
Lightning	
Coastal Erosion	low
Loss of Biodiversity	low
Structural Failure (Mud dwellings, bridges)	low
Landslides, Rockfalls and Mudflows	low

4.1.3 Key findings

Table 10 Top hazards for each local municipality

TOP PRIORITY HAZARDS IDENTIFIED IN EACH LOCAL MUNICIPALITY				
Ingquza Hill LM	**Port St Johns LM**	**Nyandeni LM**	**Mhlontlo LM**	**King Sabata Dalindyebo LM**
1. Human Disease - HIV/Aids and TB 2. Veld Fires 3. Infrastructure/Service Delivery Disruption 4. Severe Storms	1. Severe Storms 2. Drought 3. Infrastructure/Service Delivery Disruption 4. Human Disease 5. Veld Fires	1. Veld Fires 2. Human Disease – HIV/Aids and TB 3. Severe Storms 4. Road Transportation Hazards	1. Veld Fires 2. Severe Storms 3. Human Disease – HIV/Aids	1. Floods 2. Infrastructure/Service Delivery Disruption 3. Human Disease – HIV/Aids and TB 4. Severe Storms

The list below illustrates the types of disasters that pose the highest risks within the area of the O.R. Tambo Municipality and their possible effects.

The hazards identified as posing the most significant risk across the ORTDM include**:**

- Hydro-meteorological
- Fire Hazards
- Land Degradation
- Road Transportation Hazard
- Infrastructure Failure/Service Delivery Failure

Summaries of the risks

From the aggregated risk registers for the ORTDM it is evident that hydro-meteorological, fire hazards, land degradation, road transportation hazard, and infrastructure failure/service delivery failure are the high risk priorities.

Hydro-meteorological

Hydro-meteorological hazards is a wide variety of meteorological, hydrological and climate phenomena that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. The main hydro-meteorological hazards considered a high risk for ORTDM are severe storms, flooding and drought. Severe storms are atmospheric disturbances usually characterised by strong winds, with rain, flash flooding, hail, thunder and lightning, in various combinations. Severe storms are localised events, usually affecting smaller areas than tropical cyclones and floods, so their devastating impact is often under-estimated.

Climate change, dependency on subsistence farming along with ORTDM current vulnerability profile, has emphasised the need for decisive action with regards to the management of hydro-meteorological risks in the ORTDM.

Fire Hazards

Fire hazards posing a high risk in the ORTDM refers to both veld and settlement fires. Veld fires can have a significant impact on rural communities, due to their reliance on subsistence farming. Increased urbanisation and the growth of informal settlements have also increased the risk of informal settlement fires in the ORTDM.

Land Degradation
Land degradation poses a significant risk in the ORTDM. It is defined as a decline in the overall quality of soil, water or vegetation conditions due to human activities and is often the catalyst of desertification of an area.

Road transportation
Accidents which occurred or originated on a way or street open to public traffic; which resulted in one or more persons being killed or injured and in which at least one moving vehicle was involved.

Infrastructure failure/service delivery failure
Failure can be caused by inadequate design, inadequate planning, poor maintenance or phenomena such as flooding, fire, etc. Infrastructure and service delivery failure can increase disaster risk. It is important to emphasise the design, construction and maintenance of infrastructure in order to avoid service disruption.

Delivering public services is a top priority to make progress towards the Millennium Development Goals (MDGs) and to strengthen civic engagement. The involvement of communities in political and municipal processes continues to be a big challenge in South Africa. Lack of municipal response to community problems fuels community frustrations. The need remains for municipalities to prioritise community concerns and creating functional communication channels.

4.2 The dynamic nature of disaster risk

Although the utmost care was taken to ensure that all hazards were identified and risks assessed, it must be noted that some unforeseen risks, new to the area, may have been omitted. Risks change over time, as does the vulnerability of the community. It is also important to note that climate change was not included as part of this assessment. It is expected that climate change will increase the severity and frequency of extreme weather events, such as drought and severe storms. It is recommended that this phenomenon be closely monitored during the next few years and assessed as part of future disaster risk studies.

4.3 Risk communication

The identification of risks and the description of such risks within official reports are of little help to the residents of the district if the information is not communicated to the relevant communities at risk so that they can be aware and prepared. Risk communication is an important part of disaster risk reduction and forms part of the information management and communication Enabler from the Policy Framework for Disaster Management in South Africa (NDMF).

Risk communication is indicated as the responsibility of the Disaster Risk Management Centre in the NDMF and will be a Key Performance Area of the institutional capacity created for Disaster Risk Management within the District. Lead departments for specific hazards will still remain responsible for risk communication within their specific fields of expertise. Risk communication may include public awareness and preparedness campaigns, more detailed and applied education and training, or drills and exercises. Marketing and public relations can be implemented towards improving public awareness. The results of this risk assessment forms a knowledge base from which risk communication materials can be produced.

Action: Risk communication responsibility will be assigned to a specific position within the Disaster Risk Management Centre.

4.4 Ongoing risk assessment capacity

The DRMC commissioned and activated an Information Management and Communications system software installed by Aurecons Consulting. The system also includes the Mobenzi application which aims to assist with the capturing risk and vulnerability assessments, as well GPS locations. Mobenzi provides technology and professional services to organisations involved in research, data collection, logistics and community service delivery. The Mobenzi software will be made available by Aurecon Ethekweni and will run on android cell phones and tablets.

4.5 Gaps and recommendations

The goal of this Disaster Management Plan is to reduce disaster risk. The risks identified within this chapter and in the more detailed Risk Assessment report will be addressed in the following chapters and will need to be addressed with the full attention of the institutional capacity defined in the previous chapter.

A key recommendation is that the risk profile of the ORTDM, as identified within this chapter must be maintained and regularly updated with additional Risk Assessments. The risk profile of the District must also be actively communicated to communities at risk to enable them to reduce their own vulnerability.

5 KPA 3: Disaster Risk Reduction

Disaster Risk Reduction involves focused activities to reduce vulnerability, increase capacity and resilience, and avoid or reduce hazards that may affect specific elements at risk.

Disaster Risk Reduction Plans providing for prevention and mitigation strategies have been compiled based on best practice and capacity within the district.

5.1 Risk reduction process

The success of Risk Reduction efforts will rely heavily on the results of a thorough Disaster Risk Assessment (hazard and vulnerability assessment). The completion of a detailed Risk Assessments is a prerequisite for this process. Community-based risk mapping and Risk Assessments can also provide valuable information to base risk reduction planning on. Using the Risk Assessment, the first step in risk reduction will be to identify priority risks.

For each priority risk, the following process should be followed:

- Analyse the risk, through consultation if required;
- Determine stakeholders who can influence the risk (hazard / vulnerability / capacity);
- Convene stakeholders meeting;
- Determine primary and secondary responsibility on a consensus basis (this might already be in place – see Institutional Capacity chapter);
- Develop risk reduction strategy options in a participative manner;
- Evaluate the developed risk reduction strategy options;
- Decide on most viable risk reduction strategies and describe these in detailed project proposals;
- Submit project proposals to ORTDRMAF;
- Upon project approval from the ORTDRMAF, perform project initiation (if the project is within the mandate of the District it can be submitted to the IDP office at this stage for inclusion in the IDP process);
- Convene a project team:
    - Appoint a project manager (from discipline with primary responsibility for the hazard, vulnerability or capacity);
    - Appoint an internal project facilitator / manager within the ORTDRMC;
    - Confirm project team (Stakeholders);
    - Confirm project sponsor;
    - Confirm project champion;
- Perform project scoping:
    - Develop work breakdown structure;
    - Determine milestones and objectives;
    - Confirm critical path;
    - Establish monitoring & evaluation mechanism;
    - Determine budget required;
- Project implementation:
    - Implement, monitor & evaluate;
    - Project review and change control;
    - Project close-out.

5.2 Risk reduction proposals for the O.R. Tambo Municipality

Risk reduction project proposals for priority risks are listed in the tables below. The O.R. Tambo District Disaster Management Guidelines expand on the definitions of the categories of risk reduction measures (left-hand-column) and how to take risk reduction project proposals from identification (as in the right-hand column) to detailed project plans. This process is summarised in the previous sub-section. It is important that these proposals are shared with the relevant planning and implementing agencies.

5.2.1 Disaster Risk Project Proposals: Fire - Structural and Veld

It is recommended that ORTDM compile an integrated fire management plan that will include risk reduction measures, social, economic and environmental issues as well as addressing the following risk reduction project proposals. For each item within the plan it is recommended that a section be included on how to involve the community, for example by establishing a labour intensive community project to construct fire belts.

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Ensure compliance with SANS 10090 Code on Community Protection Against Fire.
	2	Plan and provide for fire stations based on land use categories and fire risk assessment (SANS 10090)
	3	As part of the integrated fire management plan, plan and provide for buffer zone between residential and vegetation areas. • Determine protection measures such as width of and type of fire breaks based on the properties of adjacent fuel types. • Fire breaks can be planted grass, ploughed breaks, natural vegetation regularly cut with brush cutter, or “skoffel” breaks.
	4	Undertake an assessment (type, condition) of current municipal roads and undertake a response time analysis for fire and emergency vehicles according to standards (SANS 10090). Use result to inform placement of fire stations, type of vehicles required and road maintenance requirements
	5	Plan to prevent Illegal electricity connections in informal settlements
	6	Use the integrated fire management plan to inform the placement of new developments and the required protection measures that would be required. This would include bulk services, fire belts, building materials etc.
	7	Ensure that development of dwellings does not take place before adequate bulk services are provided. Approval of building plans.
	8	Encourage and facilitate integrated catchment management planning in terms of fire management for environmental, social and economic objectives. This might include implementing an pro-active block burning schedule to keep fuel loads down and maintain biodiversity; and providing sand and installing water taps or hydrants at central locations
Engineering & Construction Measures	9	Ensure compliance with fire regulations and by-laws
	10	Install fire alarms in buildings
	11	Plan and provide fire escape routes and doors
	12	Plan and provide fire breaks in high risk vegetation areas • Establish labour intensive community project to construct and maintain fire belts and other fire protection measures
	13	Establish labour intensive community project to construct and maintain fire belts and other fire protection measures
	14	Provide fire resistant building materials to informal settlements
	15	Plan and develop fire early warning systems
	16	Provide additional fire hydrants
	17	Ensure that the fire extinguishers are assessed on an annual basis

Risk Reduction Category		Risk Reduction Project Proposals
Economic Measures	18	Research and upgrading / improvement of firefighting equipment/ trucks/ hydrants
	19	Provide fire hydrants in informal settlements
	20	Install watch towers, fire breaks, fire extinguishers in forestry areas
	21	Improve the quality and provide appropriate of firefighting equipment at all levels
	22	Ensure that fire hydrant water supply is sufficient in higher lying areas. Build dams for water reticulation in strategic high risk areas
	23	Provide for capital projects in municipal budget
	24	Provide funds for upgrading of fire equipment
	25	Fines for illegal electrical connections
	26	Establish an community education program on constructing fire save buildings using fire- resistant materials. Municipality to provide materials as part of program.
	27	Authorities to develop a project to make fire extinguishers more affordable for every household, as well as a means of making the maintenance thereof less expensive
	28	Rural areas property rebates for areas under conservation
	29	Provide affordable and accessible insurance packages for emerging and small scale farming communities
	30	Action plans in place
	31	Reaction plan in place
	32	Purchase a small vehicle for veld fires
Management & Institutional Measures	33	Train fire marshals for commercial/industrial complexes
	34	Appoint / train appropriate staff
	35	Conduct fire and evacuation drills
	36	Ensure evacuation doors are unlocked
	37	Running of programmes for prevention of arson
	38	Maintenance program for fire extinguishing equipment
	39	Identify and procure appropriate equipment
	40	Structured and sustained fire-prevention inspections
	41	Cleaning of undergrowth around buildings

Risk Reduction Category		Risk Reduction Project Proposals
	42	Train and deploy firefighting volunteers at fire stations and road works
	43	Identifying high risk fire areas (hotspots) from Disaster Risk Assessment report
	44	Identify safer alternatives for cooking and lighting i.e. stoves, lamps etc.
	45	Ensure correct storage of combustible materials
	46	Develop and implement maintenance programs for of access routes in high risk fire areas
	47	Train and develop fire response teams and fire beaters
	48	Training at all levels to improve the implementation of incident command system as a standard operating procedure
	49	Develop a management policy for the sale of paraffin
	50	Establish and support Fire Protection Association
	51	Refrain from using recycling cardboard containers for recycling of paper
	52	Revisit policy for evicting shack dweller
	53	Decentralize funds/Allocate specific funds for fire risk reduction projects.
	54	Local Municipality and ESKOM should take active ownership of their responsibilities.
Societal Measures	55	Develop fire evacuation procedures for commercial/industrial complexes
	56	Declare non-smoking areas
	57	Prohibit fires in high risk areas
	58	Conduct fire hazard awareness programs
	59	Conduct community awareness programs in communities before the fire season starts. So annually before June.
	60	Implement community based programs for the proper care/maintenance of electrical equipment
	61	Include fire prevention education in school curriculum
	62	Include Disaster Management in school curriculum
	63	Establish Working on Fire Programmes - Implement fire education, fire risk awareness, recruitment of volunteer fire fighters, social responsibility, ownership system e.g. hydrants
	64	Establish disaster ward committees

5.2.2 Disaster Risk Project Proposals: Flooding

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Compile an integrated and spatially explicit flood management plan that will inform the IDP and SDF. Include appropriate risk reduction measures that will facilitate community involvement to create job opportunities.
	2	The enforcement of Environmental Impact Assessment with all development projects (EIA), combined with Disaster Risk Assessments
	3	Ensure compliance to all relevant environmental legislation before undertaking any construction projects.
	4	Plan for the Upgrading of existing infrastructure to cope with new developments i.e. by building bridges
	5	Identification and plotting of vacant high risk flood areas for future reference and avoid human settlements in such areas
	6	Avoid development and settling of communities along rivers and within the flood line
	7	Apply and update Zoning regulations regularly
	8	Identify alternate suitable venues/facilities for emergency services
	9	Apply Low intensity land use in 1:100 flood line areas i.e. alter hibernation areas of livestock if it is in the floodplain areas
	10	Study and understand the impact of climate change on development.
	11	Provide signage to indicate high flood risk areas. Include 24 hour emergency number.
	12	Manage municipal assets to reduce impacts of flooding - Flood related assets such as vehicles and storm water network.
	13	Applicable departments should collaborate to ensure the timeous removal of vegetation and other debris from river courses and dams before it can block culverts and other flow regulating structures.
	14	Investigate the establishment of labour intensive community projects to remove debris from rivers and dams, and if possible utilise for fire wood production, furniture, or chip material for composting or energy production.
	15	Immediate demolishment of illegal housing structures in floodplain areas so as to prevent a mushrooming event
	16	Build relevant sheds and shelter areas for livestock
Engineering & Construction Measures	17	Ensure compliance to all relevant environmental legislation before undertaking any construction projects.
	18	Plan and Build retention dams to reduce risk of flooding.
	19	Restore and maintain water catchment areas.
	20	Build retaining walls to protect buildings.
	21	Improve and upgrade storm water reticulation systems regularly.
	22	Develop and maintain Early Warning Systems
	23	Plan bigger capacity dams to regulate flow of water

Risk Reduction Category		Risk Reduction Project Proposals
	24	Identify and quantify current erosion challenges and based on this information implement appropriate erosion control measures. This might include re-planting appropriate indigenous riparian vegetation and applying vegetation mulch on eroded
	25	Plan and erect visible warning signs in low lying areas.
Economic Measures	26	Provide for disaster relief funds on local municipal level and district level.
	27	Adequate provision for the for maintenance of storm water systems.
	28	In collaboration with the insurance industry investigate increasing insurance rates for farming activities in flood prone areas.
	29	Diversify the agricultural industry
	30	Provide financial incentives to employ and retain engineers
	31	Provide financial incentives for farming communities and emerging farmers who strategize and mitigate risks
Management & Institutional Measures	32	Enforce relevant bylaws
	33	Plan for the support for affected communities
	34	Take climate change into account when developing plans and protocols
	35	Develop and maintain flood Emergency response teams
	36	Develop and supervise programmes for storm water system maintenance and removing debris from riparian areas.
	37	Ensure that SOP for disasters are developed and maintained
	38	Utilise the Dept of Agriculture's Project Implementation (PIMS) improve the efficiency of implementing flood protection infrastructure.
	39	Dept of Public Works, Disaster Management and Dept of Water Affairs should collaborate to remove debris and reeds from riverbeds.
	40	Facilitate Strategic planning of resources to cover all areas during emergencies
	41	Plan and ensure Strategic distribution of Disaster Management resources across area
	42	Ensure the provision of Emergency flood kits
	43	Mutual aid agreements to be established for relief and response
	44	More command centre vehicles
	45	Quality assessments of risk reduction projects
	46	Establish community projects to reduce flood risk and create job opportunities: remove debris from riparian zones, construct gabion structures and re-vegetation of riparian areas

Risk Reduction Category		Risk Reduction Project Proposals
Societal Measures	47	Develop Awareness training and workshops in high risk areas
	48	Develop and inform communities of response actions to early warning systems and evacuation drills
	49	Ensure Coordination and cooperation with NGO's
	50	Community awareness i.e. through preseason radio warnings
	51	Early warning systems: include indigenous knowledge for early warnings especially for emerging farmers. Educate these communities that the “fertile” soils are usually located in dangerous flood prone areas and potential erosion areas

5.2.3 Disaster Risk Project Proposals: Storms / Severe Weather (hail and cold snap)

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Enforcing of building codes to ensure buildings can withstand severe weather prevalent in area
	2	Considering weather conditions and storm / severe weather occurrence in development planning, zoning and land-use management
	3	Identification and plotting of vacant high risk areas for future reference to avoid human settlements in such areas
	4	Retro-fitting of vulnerable buildings to ensure resilience to storms and severe weather
	5	Implement storm attenuation measures such as windbreaks in high risk areas i.e. plant appropriate tree species that can withstand strong winds.
	6	Identify alternate suitable venues/facilities for emergency services
	7	Study and understand the impact of climate change on development
Engineering & Construction Measures	8	Conduct a feasibility study of the area before any construction commences
	9	Fencing off of wetlands to discourage construction and settlement
	10	Develop and maintain severe weather early warning systems
	11	Lightning conductors on roofs in high risk areas
	12	Implement robust construction methods according to building codes and known severe weather occurrence
	13	Provide robust community facilities that are less vulnerable to severe weather and can be used as temporary emergency shelter
	14	Ensure known severe weather occurrences are considered in all municipal infrastructure construction projects
	15	Proper maintenance, monitoring and evaluation of storm water systems and planning
Economic Measures	16	Pro-active maintenance of housing structures and relevant infrastructure such as storm shelters
	17	Suggest the implementation of an emergency fund at local municipal level for each LM in the ORTDM
	18	Establish co-operations of farming communities
	19	Adequate provision for the maintenance buildings to reduce vulnerability to severe weather
	20	Procure insurance on important infrastructure that can be damaged by severe weather
	21	Institute and enforce fines or other punitive measures for non-adherence to building codes
	22	Provide accessible and affordable insurance packages for high risk communities
Management & Institutional Measures	23	Plan for the support of affected communities
	24	Develop and maintain storm damage and search & rescue emergency response teams

Risk Reduction Category		Risk Reduction Project Proposals
	25	Develop and implement preventative maintenance programmes
	26	Integration of government department and municipalities to visit the Lusaka community in Middelburg
	27	Ensure that standard operating procedures for disasters are developed and maintained. This should be tailored for each LM
	28	Facilitate strategic planning of resources to cover all areas during emergencies
	29	Plan and ensure strategic distribution of Disaster Management resources across area
	30	Educate building inspectors and infrastructure maintenance teams on known severe weather threats
	31	Mutual aid agreements to be established for relief and response
	32	Ensure availability of mobile command vehicles and emergency housing
	33	Identifying hotspots / high risk areas – develop a map enabled database of severe weather events and damage / impact experienced
Societal Measures	34	Develop Awareness training and workshops in high risk areas before the rainy season
	35	Develop and inform communities of response actions to early warning systems
	36	Ensure Coordination and cooperation with NGO's such as ADRA
	37	Community awareness and involvement of the youth in risk reduction projects.
	38	Collect community-based information on past severe weather events and make publicly available for school and research projects
	39	Identify and utilize indigenous knowledge systems
	40	Focus on combatting climate change through adaptation measures

5.2.4 Disaster Risk Project Proposals: Road Accident

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Regulate the traffic through speed bumps, circles, traffic lights
	2	Provide sufficient fencing for grazing areas of livestock
	3	Provide enough signs for pedestrian and school crossings
Engineering & Construction Measures	4	Establish labour intensive road maintenance projects in collaboration with local communities
	5	In high accident zone areas build pedestrian crossings over roads or underneath
Economic Measures	6	Pro-active maintenance
	7	Institute and enforce fines or other punitive measures for non-adherence
Management & Institutional Measures	8	Ensure the availability and visibility of enough trained traffic personnel
	9	Plan for the support of affected communities
	10	Develop and maintain emergency response teams
	11	Develop and implement preventative maintenance programmes
	12	Ensure that standard operating procedures for road accidents are developed and maintained
	13	Plan and ensure strategic distribution of Disaster Management resources across area
	14	Educate community members on known high risk areas
	15	Ensure availability of mobile command vehicles
	16	Identifying hotspots / high risk areas – develop database of severe weather events and damage / impact experienced
	17	Identify high risk areas through the Disaster Risk Assessment report and create tailored programmes that focuses on pertinent areas
Societal Measures	18	Develop Awareness training and workshops in high risk accident areas
	19	Ensure Coordination and cooperation with all government departments (Traffic, EMS), SAPS and NGO's
	20	Community awareness

5.2.5 Disaster Risk Project Proposals: Drought

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Study and understand the impact of climate change on development
	2	Build water reticulation structures
	3	Invest in JoJo (plastic water tanks • Ensure that water tanks are BPA free. BPA stands for bisphenol A. BPA is an industrial chemical that has been used to make certain plastics and resins since the 1960s. BPA is found in polycarbonate plastics and epoxy resins. Some research has shown that BPA can seep into food or beverages from containers that are made with BPA. Exposure to BPA is a concern because of possible health effects of BPA on the brain, behaviour and prostate gland of foetuses, infants and children
	4	Camp rotation to prevent overgrazing (commonage)
	5	Fencing off of camps for grazing areas of livestock
	6	Diversifying farming methods i.e. farm with Nguni cows as they are drought resistant
	7	Plant drought resistant crops
	8	Remove alien plants – i.e. cutting down wattle trees
	9	Remove reeds from riverbeds
	10	Build proper storage and preservation facilities for agricultural produce
Engineering & Construction Measures	11	Regulate management of water structures
	12	Landscaping in backyards
	13	Ensure known drought occurrences are considered in all municipal infrastructure construction projects
	14	Build granaries and other storage areas for emergency animal feed
	15	Build water reticulation dams in drought ridden areas. As identified in the Disaster Risk Assessment report
Economic Measures	16	Pro-active surveillance
	17	Provide affordable and accessible insurance for emerging or small-scale farming communities
	18	Institute and enforce fines or other punitive measures for non-adherence to water saving measures
Management & Institutional Measures	19	Plan for the support of affected communities. To be included and addressed in Disaster Management Plan
	20	Develop and implement preventative maintenance programmes
	21	Ensure that standard operating procedures for droughts are developed and maintained

Risk Reduction Category		Risk Reduction Project Proposals
	22	Capacitate rural communities to identify areas where water losses and leakages can and do occur and provide an efficient reporting process
	23	Facilitate strategic planning of resources to cover all areas during emergencies
	24	Plan and ensure strategic distribution of Disaster Management resources across area
	25	Educate farming and rural communities on known symptoms of drought
	26	Mutual aid agreements to be established for relief and response
	27	Ensure availability of mobile command vehicles
	28	Incentives for farming communities actively participating in advisory forums
	29	Identifying hotspots / high risk areas – develop database of drought events and damage / impact experienced
Societal Measures	30	Develop Awareness training and workshops in high risk areas
	31	Develop and inform communities of response actions to early warning systems
	32	Ensure Coordination and cooperation with NGO's
	33	Community awareness
	34	Collect community-based information on past severe drought events and make publicly available for school and research projects
	35	Institute community garden project scheme
	36	Support national water week in collaboration with local municipalities
	37	Strengthening of education programmes

5.2.6 Disaster Risk Project Proposals: Erosion/ Overgrazing

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Compile an integrated rehabilitation programs involving communities and relevant national departments such as Rural Development and Agriculture. The program will involve Identification and mapping the distribution of erosion sites. Based on the type and size of erosion area implement appropriate control measures, such as planting of trees. In order for any rehabilitation programme to be effective and sustainable, it would have to repair the erosion damage that has already been done and alleviate the causes of the erosion.
	2	Establish labour intensive projects to implement erosion rehabilitation programs
	3	Identification and plotting of vacant high risk areas for future reference to avoid human settlements in such areas
	4	Establish what the number of livestock allowed per hectare is
	5	Practice crop rotation
	6	Follow the correct ploughing methods
	7	Practice commonages
	8	Erosion control areas must fenced to allow for the vegetation to re-establish itself and provide sufficient protection from erosion • Many rural communities do not have fenced camps for their livestock which results in livestock grazing everywhere. This uncontrolled management approach has negative ramifications regarding soil stability and gully erosion, which in turn increases the vulnerability of the areas demarcated for cultivation.
	9	Plant indigenous trees and plants • Establishment and maintenance of vegetative covers and plant residues will be central effective erosion control. In general, it is management and protection rather than the type of the vegetative cover which determines its effectiveness in erosion control. Any vegetation which is well-adapted to local conditions and which shows vigorous growth can be used.
	10	Study and understand the impact of climate change on development
Engineering & Construction Measures	11	Ensure known severe weather occurrences are considered in all municipal infrastructure construction projects
	12	Build gabion structures where needed • An important aspect of rehabilitation work, which is most often neglected, is the follow-up maintenance of rehabilitation efforts. After installation, the erosion control structures need constant attention (particularly after rainfall) to ensure that they are still effective and that they will continue to contribute to veld improvement.
Economic Measures	13	Pro-active maintenance
	14	Procure insurance on important infrastructure that can be damaged by erosion
	15	Institute and enforce fines or other punitive measures for non-adherence to building codes

Risk Reduction Category		Risk Reduction Project Proposals
	16	Establish agricultural co-operations
Management & Institutional Measures	17	Plan for the support of affected communities
	18	Develop and implement preventative maintenance programmes in collaboration with the Dept of Agriculture, local farming communities and disaster management
	19	Ensure that standard operating procedures for disasters are developed and maintained
	20	Facilitate strategic planning of resources to cover all areas during emergencies
	21	Plan and ensure strategic distribution of Disaster Management resources across area
	22	Educate building inspectors and infrastructure maintenance teams on known erosion threats
	23	Mutual aid agreements to be established for relief and response
	24	Identifying hotspots / high risk areas – develop database of erosion and damage / impact experienced
	25	Establish agricultural colleges
Societal Measures	26	Develop Awareness training and workshops in high risk areas
	27	Develop and inform communities of response actions to early warning systems
	28	Ensure Coordination and cooperation with NGO's
	29	Community awareness
	30	Collect community-based information on past severe weather events and make publicly available for school and research projects
	31	Appointment and introduction of rangers
	32	Maintain fencing of camps

5.2.7 Disaster Risk Project Proposals: Rock fall, landslides and mudflow

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Considering weather conditions and storm / severe weather occurrence
	2	Identification and plotting of vacant high risk areas for future reference to avoid human settlements in such areas
	3	Retro-fitting roads to ensure resilience to storms and severe weather i.e. build gabions, drill rock and place pins
	4	Study and understand the impact of climate change on development
	5	Close roads
Engineering & Construction Measures	6	Erect signage at high risk areas
	7	Implement robust construction methods according to building codes
	8	Plant natural vegetation
	9	Adequate town planning
	10	Maintenance of stormwater systems and drainage systems
Economic Measures	11	Pro-active maintenance
	12	Adequate provision for the maintenance buildings to reduce vulnerability
	13	Procure insurance on important infrastructure that can be damaged landslides, rock fall or mud flow
Management & Institutional Measures	14	Develop and maintain search & rescue emergency response teams
	15	Develop and implement preventative maintenance programs
	16	Ensure that standard operating procedures for disasters are developed and maintained
	17	Facilitate strategic planning of resources to cover all areas during emergencies
	18	Educate building inspectors and infrastructure maintenance teams on known threats
	19	Ensure availability of mobile command vehicles
	20	Identifying hotspots / high risk areas – develop database of rock fall, landslides and mud flow events and damage / impact experienced
Societal Measures	21	Develop Awareness training and workshops in high risk areas
	22	Ensure Coordination and cooperation with NGO's
	23	Community awareness

Risk Reduction Category		Risk Reduction Project Proposals
	24	Collect community-based information on past rock fall, landslides and mud flow events and make publicly available for school and research projects

5.2.8 Disaster Risk Project Proposals: Lightning

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Enforcing of building codes to ensure buildings can withstand severe weather prevalent in area
	2	Considering weather conditions lightning occurrence in development planning, zoning and land-use management
	3	Focus on indigenous knowledge systems that are being used
	4	Retro-fitting of vulnerable buildings to ensure resilience to storms and severe weather
	5	Implement storm attenuation measures
Engineering & Construction Measures	6	Develop and maintain severe weather early warning systems
	7	Lightning conductors on roofs in high risk areas
Economic Measures	8	Pro-active maintenance
	9	Institute and enforce fines or other punitive measures for non-adherence to building codes
	10	Appoint a service provider that can deliver accessible and affordable insurance packages. Especially focused on the farming communities as they suffer due to livestock loss.
Management & Institutional Measures	11	Plan for the support of affected communities
	12	Ensure that standard operating procedures for disasters are developed and maintained
	13	Facilitate strategic planning of resources to cover all areas during emergencies
	14	Plan and ensure strategic distribution of Disaster Management resources across area
	15	Educate building inspectors and infrastructure maintenance teams on known lightning threats
	16	Ensure availability of mobile command vehicles
	17	Identifying hotspots / high risk areas – develop database of lightning events and damage / impact experienced
	18	Implement a programme that will reward and strengthen support and collaboration attained during disaster forums
Societal Measures	19	Develop Awareness training and workshops in high risk areas
	20	Develop and inform communities of response actions to early warning systems
	21	Ensure Coordination and cooperation with NGO's
	22	Community awareness the responsibility of Disaster Risk Management Centre, disaster risk officials and volunteers in collaboration with the relevant government departments, ESKOM etc.
	23	Collect community-based information on past severe lightning events and make publicly available for school and research projects

5.2.9 Disaster Risk Project Proposals: Sewage and/or drainage failure

Risk Reduction Category	Risk Reduction Project Proposals
Engineering & Construction Measures	1. Build bigger diameter pipes under low-water bridges and ensure proper design
	2. Treat waste before discharging
Economic Measures	3. Budget for infrastructure and maintenance
Management & Institutional Measures	4. Keep rivers clean and cleared (flotsam can block pipes under bridges)
	5. Outsource cleaning or waste treatment services
Societal Measures	6. Education (understanding of sanitation and hygiene)

5.2.10 Disaster Risk Project Proposals: Water Pollution

Risk Reduction Category	Risk Reduction Project Proposals
Physical Planning Measures	1. Reduce density of pit latrines (requires reducing the density of informal settlements)
	2. Protect springs, rivers and other water sources
Engineering and Construction Measures	3. Ensure sufficient number of refuse bins available
	4. Provide water supply schemes
	5. Construct drinking troughs for livestock
	6. Line VIP pits
	7. Pit content removal or chemical treatment (Issue of affordability, chemicals may also affect ground water)
	8. Lining of graves
	9. Urinal diversion / bio digesters / anaerobic process. Left with fertilizer
	10. Construct water reservoirs
Management & Institutional Measures	11. Conduct a geo-hydrological study of the high risk areas
	12. Law enforcement and monitoring and investigation of illegal dumping
	13. Ground Water Pollution Management Plan – includes taking water samples and testing it
	14. Improve solid waste removal services
	15. Control and monitor agricultural pollution through the use of fertiliser
	16. Monitor and evaluate the treatment of water drinking sources on a regular basis
	17. Actively monitor the process of shale gas exploration
Societal Measures	18. Education (understanding of water pollution)
	19. Promote health and hygiene education
	20. Promote waste management and recycling
	21. Promote utilising organic fertiliser
	22. Promote awareness raising regarding the long-term negative impact of shale gas development on available surface water supplies and underground water supplies

5.2.11 Disaster Risk Project Proposals: Strong wind/ Tornado

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Enforcing of building codes to ensure buildings can withstand severe weather prevalent in area
	2	Considering weather conditions and strong wind occurrence in development planning, zoning and land-use management
	3	Identification and plotting of vacant high risk areas for future reference to avoid human settlements in such areas
	4	Retro-fitting of vulnerable buildings to ensure resilience to strong winds
	5	Implement attenuation measures such as windbreaks in high risk areas i.e. plant trees
	6	Identify alternate suitable venues/facilities for emergency services
	7	Study and understand the impact of climate change on development
	8	Do not shear animals during this season
Engineering & Construction Measures	9	Conduct a feasibility study of the area before any construction commences
	10	Develop and maintain severe weather early warning systems
	11	Implement robust construction methods according to building codes especially regarding the roofs of the housing structures i.e. makes use of roofs with gables. And propose and utilize alternative construction materials to the perishable pine trees that are currently being utilized
	12	Provide robust community facilities that are less vulnerable to severe weather and can be used as temporary emergency shelter
	13	Ensure known strong wind/tornado occurrences are considered in all municipal infrastructure construction projects
	14	Require financial incentives to employ and retain engineers
Economic Measures	15	Pro-active maintenance of dwellings and infrastructure
	16	Suggest the implementation of an emergency fund at local municipal level for each LM in the ORTDM
	17	Adequate provision for the maintenance buildings to reduce vulnerability to tornadoes
	18	Procure insurance on important infrastructure that can be damaged by tornadoes
	19	Institute and enforce fines or other punitive measures for non-adherence to building codes
	20	Provide accessible and affordable insurance packages for high risk communities
Management & Institutional Measures	21	Plan for the support of affected communities
	22	Develop and maintain search & rescue emergency response teams
	23	Ensure that standard operating procedures for disasters are developed and maintained. This should be tailored for each LM

Risk Reduction Category		Risk Reduction Project Proposals
	24	Facilitate strategic planning of resources to cover all areas during emergencies
	25	Plan and ensure strategic distribution of Disaster Management resources across area
	26	Educate building inspectors and infrastructure maintenance teams on known tornado threats
	27	Mutual aid agreements to be established for relief and response
	28	Ensure availability of mobile command vehicles and emergency housing
	29	Identifying hotspots / high risk areas – develop database of tornado events and damage / impact experienced
Societal Measures	30	Develop Awareness training and workshops in high risk areas
	31	Develop and inform communities of response actions to early warning systems
	32	Ensure Coordination and cooperation with NGO's such as ADRA
	33	Community awareness and involvement of the youth in risk reduction programmes
	34	Collect community-based information on past tornado events and make publicly available for school and research projects
	35	Identify and utilize indigenous knowledge systems. Cultural heritage of rondawels not be ignored

5.2.12 Disaster Risk Project Proposals: Heavy snowfall

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Enforcing of building codes to ensure buildings can withstand severe weather prevalent in area
	2	Identify alternate suitable venues/facilities for emergency services
	3	Study and understand the impact of climate change on development
	4	Do not shear animals during this season
Engineering & Construction Measures	5	Conduct a feasibility study of the area before any construction commences
	6	Develop and maintain severe weather early warning systems
	7	Provide robust community facilities that are less vulnerable to heavy snowfall and can be used as temporary emergency shelter
	8	Ensure known occurrences of Heavy snowfall are considered in all municipal infrastructure construction projects
	9	Erect signs to warn community of high risk area
Economic Measures	10	Pro-active infrastructure maintenance
	11	Suggest the implementation of an emergency fund at local municipal level for each LM in the CHDM.
	12	Institute and enforce fines or other punitive measures for non-adherence to building codes
	13	Provide accessible and affordable insurance packages for high risk communities
Management & Institutional Measures	14	Plan for the support of affected communities
	15	Develop and maintain search & rescue emergency response teams
	16	Develop and implement preventative maintenance programmes
	17	Ensure that standard operating procedures for disasters are developed and maintained. This should be tailored for each LM
	18	Facilitate strategic planning of resources to cover all areas during emergencies
	19	Plan and ensure strategic distribution of Disaster Management resources across area
	20	Educate building inspectors and infrastructure maintenance teams on known tornado threats
	21	Mutual aid agreements to be established for relief and response
	22	Ensure availability of mobile command vehicles and emergency housing
	23	Identifying hotspots / high risk areas – develop a spatially explicit database of heavy snowfall events and damage / impact experienced
Societal Measures	24	Develop awareness training and workshops in high risk areas

Risk Reduction Category		Risk Reduction Project Proposals
	25	Develop and inform communities of response actions to early warning systems
	26	Ensure Coordination and cooperation with NGO's such as ADRA
	27	Community awareness and involvement of the youth
	28	Collect community-based information on snowfall events and make publicly available for school and research projects
	29	Identify and utilize indigenous knowledge systems. Cultural heritage of rondawels not be ignored

5.2.13 Disaster Risk Project Proposals: Shipping Incidents – Oil Spill

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Develop integrated contingency plans
	2	Sea conditions influence the behavior of spilled oil and determine the effectiveness of response measure. Accordingly data about prevailing winds, sea states and temperature should be available to planners.
	3	Develop sensitivity maps to convey key information on commercial, ecological and recreational resources to inform the planning process. Focus on those who have special value or high vulnerability.
	4	Recovered oil, oily debris and contaminated beach material has to be properly disposed of. It may also need to be transported to, and handled through, temporary storage sites. Suitable equipment, vehicles, temporary storage sites and final disposal methods/locations need to be identified and their availability agreed with the local authorities at the contingency planning stage
	5	Identify and define clear roles and responsibilities for responding organisations and/or departments
	6	Pre-designed and approved disposal sites must be identified for the disposal of oily waste
	7	Consider oil spill contingencies in development planning, especially related to water intakes from sea and other shoreline development planning as well as planning for maritime transport facilities such as ports, jetties and slipways.
Engineering & Construction Measures	8	Stockpile shoreline cleanup equipment in depots strategically situated along the coast. Equipment should be sufficient to handle the impact on beaches of a small to moderate scale spill for the first 48 hours
	9	Develop storage capacity for recovered oil
	10	Identify/develop location to act as staging area for equipment loading and reception of recovered oil.
	11	Advocate for effective maritime safety management in terms of inspecting the physical integrity of vessels as well as safe navigation along the coast with the respective lead agencies
Economic Measures	12	Implement the “polluter pays” principle
	13	Establish an oil spill liability trust fund to ensure legal and monetary issues do not impede timely spill response
	14	Advocate for the development of a financial plan for oil spill risk reduction.
Management & Institutional Measures	15	Implement clear oil pollution reporting procedures
	16	Provisions and/or agreements should be made for the supply of technical support and equipment to parties requesting assistance to combat spills
	17	Technical cooperation should be active in the fields of training, planning, research and development
	18	An inventory should be made of all oil spill response equipment and supplies that would be available to the response organization in the case of an oil spill
	19	Improve institutional capacity with regards to the use of GIS technology to inform decision making
	20	Review and familiarize relevant stakeholders with legislative frameworks that may dictate response strategies.
	21	Form adequately trained incident management/response teams

Risk Reduction Category		Risk Reduction Project Proposals
	22	Identify and define clear roles and responsibilities for responding organisations and/or departments
	23	Develop procedures for the rapid implementation of an aerial surveillance plan.
	24	Develop oiled / threatened / disrupted wildlife response plan
	25	Identify appropriate clean-up procedures for different shoreline types.
Societal Measures	26	Mobilize volunteers or encourage coastal communities to participate in localized, coastal spills
	27	Provide training and awareness programs in cooperation with relevant government departments and private sector stakeholders.

5.2.14 Disaster Risk Project Proposals: Coastal Erosion

Risk Reduction Category		Risk Reduction Project Proposals
Physical Planning Measures	1	Monitoring of sediment volumes and beach morphology as well as forecasting
	2	Phased withdrawal of built environment from the seashore
	3	Plan coastal construction to ensure safe distances from the high-water mark
	4	Develop and implement a Municipal Coastal Management Plan, incorporating Shoreline Management Plans
	5	Establish a coastal setback line
	6	Identify and tabulate all erosion prone property, land and/or assets in the erosion prone area to assist with prioritizing risk reduction investment
	7	Plan for relocation of deteriorating infrastructure during end of life replacement
Engineering & Construction Measures	8	Use permanent concrete and rock constructions to consolidate the coastline and protect inland assets i.e. seawalls, groynes, detached breakwaters or revetments
	9	Build with natural processes in mind, relying on and preserving natural elements such as sand dunes and vegetation to prevent erosion
	10	Use sandbags and beach nourishments schemes
	11	Dune re-establishments and vegetation
	12	Maintenance and sand consolidation
Economic Measures	13	Enforce offences and penalties in terms of the Integrated Coastal Management Act
	14	Financial incentives to encourage the use on nonstructural risk reduction measures
	15	Identify and tabulate all erosion prone property, land and/or assets in the erosion prone area
	16	Consider “quick win” smaller low cost risk reduction schemes
	17	Consider asking beneficiaries of risk reduction measures to contribute funding, but be aware of equality issues
	18	Reconsider/reevaluate infrastructure investments to reduce risk while retaining and enhancing the natural coastal environment
Management & Institutional Measures	19	Improve cooperation and collaboration between municipal structures and the DEAT regarding implementation of the Integrated Coastal Management Act
	20	Establish a municipal coastal committee as proposed by the above mentioned Act in conjunction with the Disaster Management Office
	21	Develop coastal management partnerships between government, civil society and the private sector
	22	Establish a monitoring and reporting framework
Societal Measures	23	Collaboration between neighbours with regards to mitigation measures as this will increase defence effectiveness and reduce costs

Risk Reduction Category		Risk Reduction Project Proposals
	24	Conduct targeted community engagement to inform high risk communities and provide guidance for risk management

The risk-specific risk reduction project proposals mentioned in the tables above will, if properly planned and implemented, contribute towards the reduction of disaster risk within the ORTDM.

The risk reduction plans outlined here which are implementable must be considered for inclusion within the IDP projects of the Municipality and if included must be budgeted for in terms of the operating and capital budgets of the Municipality. Each project should be evaluated to determine which municipal department can lead its implementation. When a lead department is assigned through consensus in the ORTDRMAF, such a lead department must manage all planning and budgeting processes for said project. The Disaster Management department of the ORTDM must assist in this regard.

Where the proposed project falls outside the mandate of the Municipality, the Municipality should establish a lobbying and monitoring mechanism to motivate the need for the project in the correct governmental or societal sector and to track progress on the project. It is anticipated that many projects will need to be executed on a partnership level, and in such cases the department of the Municipality responsible for service delivery partnerships should take the lead with support from the O.R. Tambo Disaster Risk Management Centre.

5.3 Risk reduction capacity for the O.R. Tambo Municipality

The organisational structure for risk reduction within the Municipality includes O.R. Tambo Disaster Management, Disaster Management representatives of each Local Municipality within the District, the O.R. Tambo District Disaster Risk Management Advisory Forum, the top-management team of the ORTDM, the focal points for Disaster Management within municipal departments within the Municipality, departmental planning groups, risk reduction project teams and preparedness planning groups. The total structure of the Municipality, with every member of personnel and every resource should also be committed to Disaster Risk Reduction. On-going capacity building programmes will be required to ensure the availability of adequate capacity for risk reduction.

5.4 Project evaluation mechanism: Evaluate and prioritise future IDP projects in the context of disaster risk

The objective of this evaluation mechanism is to evaluate and prioritise future IDP projects in the context of disaster risk. Disaster risk evaluation criteria for approval of for example infrastructure projects should be based on the following questions:

- Does the footprint of the planned project fall within any existing identified disaster risk affected area?
- What will the potential disaster risk exposure of the planned project be (seriousness, manageability, urgency, growth) to existing disaster risks?
- Can the planned project pose any threat to its surroundings in terms of potential hazard impact generated by the project (seriousness, manageability, urgency, growth)?
- Can risk (1) to the project and/or risk (2) from the project be reduced through design changes or other measures?
- If risk is reduced to a level as low as reasonably possible through appropriate measures, will the potential benefit of the project outweigh the remaining potential risk “cost” of the project?

A procedure should be implemented whereby the DRMC reviews all proposed IDP projects with this evaluation mechanism, or where line departments are capacitated to self-evaluate their project proposals. The table below can assist the DRMC in evaluating project proposals.

Project name / description	Development approval and prioritisation questions						Relative risk posed by project	Project priority
	Project falls within hazard affected area(s)	Project can pose a threat to surrounding areas	Risk to the project can be reduced significantly	Risk from the project can be reduced significantly	The benefits of the project outweigh the potential risk “cost”	Does the potential project directly address risk reduction of any potential disaster risk		
	Unknown = 4 Yes multiple = 3 Yes = 2 No = 1	*Unknown = 4 Yes high risk = 3 Yes low risk = 2 No = 1*	*Unknown = 4 No = 3 Yes moderate confidence = 2 Yes high confidence = 1*	*Unknown = 4 No = 3 Yes moderate confidence = 2 Yes high confidence = 1*	*Unsure = 4 No = 3 Yes moderate confidence = 2 Yes high confidence = 1*	*Not considered = 4 No = 3 Yes to some degree = 2 Yes confirmed = 1*		
Worst project	4	4	4	4	4	4	24	5
Best project	1	1	1	1	1	1	6	1
No risk assessment	4	1	1	1	1	1	9	2
Medium high project	3	3	3	3	3	3	18	4
Medium low project	2	2	2	2	2	2	12	3

5.4 Gaps and recommendations

The implementation of the project proposals contained within this chapter will, in all likelihood, require more project management capacity and personnel than what is available at this time. Even with active involvement from other departments and agencies who address the risk reduction projects that fall within their mandates, the ORTDM would need to invest in additional human capital to actively pursue risk reduction and mitigation within the District. Interim measures could be to prioritise only specific aspects for risk reduction, and to implement only very specifically targeted risk reduction interventions, tailoring risk reduction projects to existing capacity. This concludes the discussion on Risk Reduction (KPA 3). The next section of the plan is committed to Response and Recovery (KPA 4).

6 KPA 4: Response and recovery

Response and recovery is concerned with ensuring effective and appropriate disaster response and recovery by:

- Implementing a uniform approach to the dissemination of early warnings;
- Averting or reducing the potential impact in respect of personal injury, health, loss of life, property, infrastructure, environments and government services;
- Implementing immediate integrated and appropriate response and relief measures when significant events or disasters occur or are threatening to occur; and
- Implementing all rehabilitation and reconstruction strategies following a disaster in an integrated and developmental manner.

The first part of this section will focus on preparedness planning for priority risks, and the second part will describe an any-hazard response procedure. In the final part of the section, the declaration and classification of a disaster will be discussed

6.1 Preparedness Plans of the O.R. Tambo District Municipality

Preparedness plans are compiled in order to enable fast and efficient response to predicted and unpredicted emergencies. Preparedness plans should be compiled for known priority risks. Risk-specific preparedness plan proposals for priority risks are listed in the tables below. The risk-specific preparedness plans have been compiled based on the capacity assessment within the District as well as best practice.

6.2 Response Capacity

The establishment of a 24/7 monitoring, notification and activation and emergency or disaster management operational support is a key requirement of this Plan. The availability of such a centre will enable the DRMC to quickly mobilise appropriate resources to respond to major incidents and disasters. This centre, and in its absence the Municipal Disaster Management Co-ordinator, will maintain an up-to-date list of contact details for all parties that may need to be informed about or requested to respond to major incidents and disasters affecting the municipal area.

Disaster and emergency services contacts for each local Municipality and the ORTDM is provided later in this section.

6.3 Disaster Preparedness Plans

6.3.1 Disaster Preparedness Plan: Fire – Structural and Veld

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
1	Inform Fire Services	First person to notice incident	Local authority fire call centre	Immediately	To respond with resources
2	Respond resources	Fire Services Control Centre	Local authority fire call centre	Immediately	To limit impact by saving lives, property, livestock and critical structures/facilities.
3	For facilities: Activate facility fire teams	Facility manager or as per plan	Facility manager's office	Immediately when the incident is reported	To contain situation
4	For facilities: Fire team to extinguish small fires	Trained fire team	At the point of incident	ASAP	To prevent / minimise the chance of the fire spreading
5	For facilities: Evacuate facility	Evacuation teams / SAPS / Fire	At facility	ASAP	To prevent injury/deaths
6	For facilities: Check the name list of all evacuated people	Trained control team	At specific control points (assembly areas) outside the building / facility	ASAP after evacuation	To ensure everyone is out of the building / facility
7	Assess Situation	First Responders on scene	At scene	On arrival	To determine needs
8	Request additional resources	First Responders on scene	From scene through local authority fire call centre	After assessment	To manage situation
9	Implement appropriate emergency intervention	First responders on scene	At scene	On arrival	To protect life and property and neutralize any impacting hazard
10	Setup command post	Senior officer on site	Safe area on site	Immediately	To plan and implement correct immediate responses
11	Establish incident management plan per service	Services on scene	On scene	ASAP	To effect appropriate immediate response and relief actions
12	Assess impact	Services on scene	On scene	Immediately	To determine future relief and recovery actions
13	Notify Disaster Management team if major incident	Services on scene / Senior officer on scene	From command post	As soon as required	To facilitate multidisciplinary co-ordination and major incident management support
14	Crowd and traffic control	SAPS, Traffic, Law	Around scene	Immediately	To control people and traffic at the

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
		Enforcement, Private security if appropriate			incident
15	Assemble joint incident management team	Senior representatives of all services on scene	At appropriate single command post, in case of fire incident preferably at fire command post	Immediately once more than one service working on scene	To ensure multidisciplinary coordination that enables effective response and relief
16	Design joint incident action plan	Joint incident management team	Command post / FCP	ASAP	To manage situation
17	Implement joint plan of action	Joint incident management team	On scene	ASAP	To normalize situation
18	Seek missing people	Search team/ Fire/ EMS/ SAPS	Through the whole building / facility / affected area	ASAP once missing people have been reported	To rescue missing persons
19	Treat injured people	Trained first aid team/ EMS / Fire	At the first aid post / triage area	Immediately when injury is reported	To treat injuries
20	Inform next of kin of injured people	Facility manager / SAPS / EMS	At the facility manager / director's office / from scene	Immediately when injury is reported	To inform family members of the conditions of the injured relative and how to reach them
21	Monitor actions	Joint incident management team	On scene	Ongoing during incident management	To ensure effective planning and execution
22	Area /Facility clean-up	All services	On site	On completion of rescue/ immediate emergency actions	To prevent further incidents/ environmental impacts
23	On-site inspection	EMS/ Traffic/ Fire / SAPS forensics	On scene	On completion of emergency actions	To ensure site is safe for use again
24	Stand down	All services	On scene	Once site is declared safe	To normalize services operations
25	De- brief	All role-players (disaster management ward committee, volunteer units, ward structures, LMs and FPAs, disaster management and relevant departments)	Pre-determined venue	Within one week	To evaluate actions and improve future response
26	Update plans and	All role-players(disaste	At service HQ	ASAP	Effective service

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
	procedures	r management ward committee, volunteer units, ward structures, LMs and FPAs, disaster management and relevant departments)			delivery

Additional hazard-specific contingency options could include:

- Strengthen fire fighting capacity and capability in high risk areas;
- Implement environmental monitoring stations;
- Improve acquisition and activation of fire fighting resources;
- Enhance community-level teams with fire fighting training and basic equipment to act as first responders;
- Determine the need for emergency shelter; and
- Determine the need for emergency sustenance and transport.

6.3.2 Disaster Preparedness Plan: Flooding

What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
Notify response teams (Municipal engineering, SAPS, Fire & Rescue, EMS, Dept. Water Affairs, SAWS)	Local Authority	24 Hour Call Centre	Immediately	To activate response teams
Activate response teams	District Disaster Management and Services Standby Teams	From locations/ standby positions	Immediately	To assess impact and actions required
Identify affected and damaged area	District Disaster Management and Services Standby Teams	In affected area	Immediately	To determine the extent of the damage in order to assess the affected area
Determine impact	District Disaster Management and Services Standby Teams	At affected area	Immediately	To determine the actions and level of response required
Implement appropriate emergency intervention	First responders on scene	At scene	On arrival	To protect life and property and neutralize any impacting hazard
Activate JOC	Head of DRMC and senior management of all services / jurisdictions involved.	DRMC or alternative	Immediately if major flooding incident	To plan strategically and coordinate multidisciplinary response, relief and rehabilitation
Assess information	All services	JOC	Immediately	To plan actions
Design plan of action	DM Co-ordination Team / JOC Team	JOC	After assessment	To facilitate response and relief
Implement response actions	District Disaster Management Team, SANDF, SAPS, EMS	Affected area	ASAP	To prevent injury / mortality and to provide basic needs / services
Provide relief	Relevant Stakeholders	At affected area / relief centre	After assessment	To minimize impact
Mopping up	Relevant Stakeholders	Affected area	ASAP	To normalize community
Assess possibility of further flooding	District Disaster Management Team, SAWS	Entire area	Immediately	To minimize and/or prevent further disruption / damage

What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
Issue early warning to areas vulnerable to further flooding	District Disaster Management Team, SAWS	Vulnerable areas	Immediately	To minimize and/or prevent further disruption / damage
Institute recovery measures	PDRMC, Treasury, Relevant Departments	JOC	Once situation is under control	To restore normal activities in area
Road closures	Municipality / Prov Traffic	On Site	ASAP	To prevent loss of life and property
Communication with population of affected areas	Municipality / Media / Disaster Management / SAPS	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent loss of life and property though public communication
Arrange temporary accommodation	Municipality / Social services/ NGO's	Available venues	When needed	To provide temporary accommodation – emergency shelter
Organize medical search parties	EMS / Fire & Rescue	On site	ASAP if people reported missing / unaccounted for	To treat medical cases
Flood management	Department of Water Affairs	On site and downstream	ASAP	To manage the effects of the flood
Rapid initial impact assessment	Municipal engineer and Provincial roads engineer	In affected area	Once flooding has subsided, if infrastructure damage suspected	To establish impact and immediate required repair to infrastructure as well as assistance required from province / national
Prioritize, plan and implement emergency repairs to infrastructure	Infrastructure owner	Areas with damaged infrastructure	ASAP – depending on prioritization and available resources	To restore critical and essential services
Verification of impact assessment	Province / NDRMC / Contracted impact assessment team	Areas with damaged infrastructure	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms

Additional hazard-specific contingency options could include:

- Mobilising swift water rescue capacity;
- Mass evacuation;
- Monitoring for water-borne diseases;
- Determine the need for emergency shelter; and
- Determine the need for emergency sustenance and transport.

6.3.3 Disaster Preparedness Plan: Storms / Severe Weather Storms (hail and cold snap)

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
1	Notify response teams (Municipal engineering, SAPS, Fire & Rescue, EMS, Dept. Water Affairs, SAWS)	Local Authority	24 Hour Call centre	Immediately	To activate response teams
2	Activate response teams	District Disaster Management and Services Standby Teams	From locations/ standby positions	Immediately	To assess impact and actions required
3	Identify affected and damaged area	District Disaster Management and Services Standby Teams	In affected area	Immediately	To determine the extent of the damage in order to assess the affected area
4	Determine impact	District Disaster Management and Services Standby Teams	At affected area	Immediately	To determine the actions and level of response required
5	Implement appropriate emergency intervention	First responders on scene	At scene	On arrival	To protect life and property and neutralize any impacting hazard
6	Activate JOC	Head of DRMC and senior management of all services / jurisdictions involved.	DRMC or alternative	Immediately if major flooding incident	To plan strategically and coordinate multidisciplinary response, relief and rehabilitation
7	Assess information	All services	JOC	Immediately	To plan actions
8	Design plan of action	DM Co-ordination Team / JOC Team	JOC	After assessment	To facilitate response and relief
9	Implement response actions	District Disaster Management Team, SANDF, SAPS, EMS	Affected area	ASAP	To prevent injury / mortality and to provide basic needs / services
10	Provide relief	Relevant Stakeholders	At affected area / relief centre	After assessment	To minimize impact
11	Mopping up	Relevant Stakeholders	Affected area	ASAP	To normalize community
12	Assess possibility of further damage	District Disaster	Entire area	Immediately	To minimize and/or prevent further

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
		Management Team, SAWS			disruption / damage
13	Issue early warning to areas vulnerable to further damage	District Disaster Management Team, SAWS	Vulnerable areas	Immediately	To minimize and/or prevent further disruption / damage
14	Institute recovery measures	PDRMC, Treasury, Relevant Departments	JOC	Once situation is under control	To restore normal activities in area
15	Road closures	Municipality / Prov Traffic	On Site	ASAP	To prevent loss of life and property
16	Communication with population of affected areas. Create pamphlets and visit the affected areas.	Municipality / Media / Disaster Management / SAPS	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent loss of life and property though public communication
17	Arrange temporary accommodation	Municipality / Social services/ NGO's/ Church groups and organisations/ SASSA/CDWs	Available venues	When needed	To provide temporary accommodation – emergency shelter
18	Organize medical search parties	EMS / Fire & Rescue	On site	ASAP if people reported missing / unaccounted for	To treat medical cases
19	Rapid initial impact assessment	Municipal engineer and Provincial roads engineer	In affected area	Once storm has passed, if infrastructure damage suspected	To establish impact and immediate required repair to infrastructure as well as assistance required from province / national
20	Prioritize, plan and implement emergency repairs to infrastructure	Infrastructure owner	Areas with damaged infrastructure	ASAP – depending on prioritization and available resources	To restore critical and essential services
21	Verification of impact assessment	Province / NDRMC / Contracted impact assessment team	Areas with damaged infrastructure	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms

Additional hazard-specific contingency options could include:

- Mobilise resources to repair structural damage to critical infrastructure;
- Mobilise urban / rural search and rescue capacity;
- Determine the need for emergency shelter; and
- Determine the need for emergency sustenance and transport.

6.3.4 Disaster Preparedness Plan: Road Accident

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
1	Notify response teams (Traffic Department, SAPS, Fire & Rescue, EMS)	Local Authority	24 Hour Call centre	Immediately	To activate response teams
2	Activate response teams	District Disaster Management and Services Standby Teams	From locations/ standby positions	Immediately	To assess impact and actions required
3	Identify affected and damaged area	District Disaster Management and Services Standby Teams	In affected area	Immediately	To determine the extent of the damage in order to assess the affected area
4	Determine impact	District Disaster Management and Services Standby Teams	At affected area	Immediately	To determine the actions and level of response required
5	Implement appropriate emergency intervention	First responders on scene	At scene	On arrival	To protect life and property and neutralize any impacting hazard
6	Assess information	All services	JOC	Immediately	To plan actions
7	Design plan of action	DM Co-ordination Team / JOC Team	JOC	After assessment	To facilitate response and relief
8	Implement response actions	District Disaster Management Team, SAPS, EMS	Affected area	ASAP	To prevent injury / mortality and to provide basic needs / services
9	Provide relief	Relevant Stakeholders	At affected area / relief centre	After assessment	To minimize impact
10	Mopping up	Relevant Stakeholders	Affected area	ASAP	To normalize community
11	Assess possibility of further damage	District Disaster Management Team, Traffic Department, EMS, SAPS	Entire area	Immediately	To minimize and/or prevent further disruption / damage
12	Issue early warning to areas affected by road	District Disaster Management	Vulnerable areas	Immediately	To minimize and/or prevent further disruption / damage

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
	closure	Team, Traffic Department, EMS, SAPS			
13	Road closures	Municipality / Prov Traffic	On Site	ASAP	To prevent loss of life and property
14	Communication with population of affected areas	Traffic Department/ Municipality / Media / Disaster Management / SAPS	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent loss of life through public communication
15	Arrange temporary accommodation	Municipality / Social services/ NGO's	Available venues	When needed	To provide temporary accommodation – emergency shelter
16	Organize medical search parties	EMS / Fire & Rescue	On site	ASAP if people reported missing / unaccounted for	To treat medical cases
17	Prioritize, plan and implement emergency repairs to infrastructure	Infrastructure owner	Areas with damaged infrastructure	ASAP – depending on prioritization and available resources	To restore critical and essential services
18	Verification of impact assessment	Traffic Department of Province, district or region/ NDRMC / Contracted impact assessment team	Areas with damaged infrastructure	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms

Additional hazard-specific contingency options could include:

- Mobilise resources to repair structural damage to critical infrastructure;
- Mobilise urban / rural search and rescue capacity; and
- Determine the need for emergency sustenance and transport.

6.3.5 Disaster Preparedness Plan: Drought

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
1	Build dams/ catchment areas.	Department of Agriculture, Disaster Management, Dept of Water, Working for water	In high risk areas	Pre-drought. Before season.	To sustain local economy and avoid death of livestock and increase in unemployment.
2	Establish grazing camps.	Department of Agriculture, farmers.	In high risk areas	Immediately	To sustain local economy and avoid death of livestock and increase in unemployment.
3	Fence off grazing areas.	Department of Agriculture, farmers.	In high risk areas	Immediately	To prevent overgrazing which can potentially exacerbate drought.
4	Establish fire belts	Department of Agriculture, farmers, local fire station.	In high risk areas	Immediately	To sustain local economy and avoid death of livestock and increase in unemployment.
5	Adjust emergency animal feeding stock supplies.	Department of Agriculture, farmers.	In high risk areas	Immediately	To sustain local economy and avoid death of livestock and increase in unemployment.
6	Notify response teams (Dept of Agriculture, EMS, Dept. Water Affairs, SAWS)	Local Authority	24 Hour Call centre	Immediately	To activate response teams
7	Identify affected and damaged area	District Disaster Management and Services Standby Teams	In affected area	Immediately	To determine the extent of the damage in order to assess the affected area
8	Determine impact	District Disaster Management and Services Standby Teams	At affected area	Immediately	To determine the actions and level of response required
9	Implement appropriate emergency intervention	First responders on scene	At scene	On arrival	To protect life and property and neutralize any impacting hazard
10	Activate JOC	Head of DRMC and senior management of all services / jurisdictions involved.	DRMC or alternative	Immediately if major flooding incident	To plan strategically and coordinate multidisciplinary response, relief and rehabilitation

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
11	Assess information	All services	JOC	Immediately	To plan actions
12	Design plan of action	DM Co-ordination Team / JOC Team	JOC	After assessment	To facilitate response and relief
13	Implement response actions	District Disaster Management Team, SANDF, SAPS, EMS	Affected area	ASAP	To prevent injury / mortality and to provide basic needs / services
14	Provide relief	Relevant Stakeholders	At affected area / relief centre	After assessment	To minimize impact
15	Mopping up	Relevant Stakeholders	Affected area	ASAP	To normalize community
16	Assess possibility of further damage	District Disaster Management Team, SAWS	Entire area	Immediately	To minimize and/or prevent further disruption / damage
17	Issue early warning to areas vulnerable to further damage	District Disaster Management Team, SAWS	Vulnerable areas	Immediately	To minimize and/or prevent further disruption / damage
18	Institute recovery measures	PDMC, Treasury, Dept of Agriculture, Relevant Departments	JOC	Once situation is under control	To restore normal activities in area
19	Communication with population of affected areas	Municipality / Media / Disaster Management / Dept of Agriculture	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent loss of life and property though public communication
20	Arrange temporary feed for livestock	Municipality / Social services/ SASSA/ NGO's	Available storage areas	When needed	To provide temporary accommodation – emergency shelter
21	Verification of impact assessment	Province / NDMC / Contracted impact assessment team	Areas with damaged infrastructure	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms

Additional hazard-specific contingency options could include:

- Mobilise resources to assist struggling farming communities;
- Determine the need for emergency feed and water for livestock; and
- Determine the need for emergency sustenance.

6.3.6 Disaster Preparedness Plan: Erosion/ Overgrazing

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
	Notify response teams (Department of Agriculture)	Local Authority	24 Hour Call centre	Immediately	To activate response teams
	Activate response teams	District Disaster Management and Services Standby Teams	From locations/ standby positions	Immediately	To assess impact and actions required
	Identify affected and damaged area	District Disaster Management and Services Standby Teams	In affected area	Immediately	To determine the extent of the damage in order to assess the affected area
	Determine impact	District Disaster Management and Services Standby Teams	At affected area	Immediately	To determine the actions and level of response required
	Assess information	All services	JOC	Immediately	To plan actions
	Design plan of action	DM Co-ordination Team / JOC Team	JOC	After assessment	To facilitate response and relief
	Implement response actions	District Disaster Management Team, Department of Agriculture and other relevant community role-players	Affected area	ASAP	To prevent injury / mortality and to provide basic needs / services
	Provide relief	Relevant Stakeholders	At affected area / relief centre	After assessment	To minimize impact
	Assess possibility of further damage	District Disaster Management Team, Department of Agriculture	Affected area	Immediately	To minimize and/or prevent further disruption / damage
1	Issue early warning to areas vulnerable to further erosion	District Disaster Management Team, Department of Agriculture	Vulnerable areas	Immediately	To minimize and/or prevent further disruption / damage
1	Institute recovery measures	PDMC, Treasury,	JOC	Once situation is under control	To restore normal activities in area

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
		Relevant Departments			
1	Communication with population of affected areas	Municipality / Media / Disaster Management / Department of Agriculture	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent loss of life and property though public communication
1	Rapid initial impact assessment	DRMC and/or Department of Agriculture	In affected area	If damage suspected	To establish impact and immediate required repair to infrastructure as well as assistance required from province / national
1	Verification of impact assessment	Province / NDMC / Contracted impact assessment team	Areas with damages or loss	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms

Additional hazard-specific contingency options could include:

- Mobilise resources to repair structural damage to critical infrastructure; and
- Determine the need for emergency sustenance.

6.3.7 Disaster Preparedness Plan: Rock fall, landslides and mud flow

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
1	Notify response teams (Municipal engineering, SAPS, Fire & Rescue, EMS, Dept. Water Affairs, Traffic Department, SAWS)	Local Authority	24 Hour Call centre	Immediately	To activate response teams
2	Activate response teams	District Disaster Management and Services Standby Teams	From locations/ standby positions	Immediately	To assess impact and actions required
3	Identify affected and damaged area	District Disaster Management and Services Standby Teams	In affected area	Immediately	To determine the extent of the damage in order to assess the affected area
4	Determine impact	District Disaster Management and Services Standby Teams	At affected area	Immediately	To determine the actions and level of response required
5	Implement appropriate emergency intervention	First responders on scene	At scene	On arrival	To protect life and property and neutralize any impacting hazard
6	Activate JOC	Head of DRMC and senior management of all services / jurisdictions involved.	DRMC or alternative	Immediately if major flooding incident	To plan strategically and coordinate multidisciplinary response, relief and rehabilitation
7	Assess information	All services	JOC	Immediately	To plan actions
8	Design plan of action	DM Co-ordination Team / JOC Team	JOC	After assessment	To facilitate response and relief
9	Implement response actions	District Disaster Management Team, Traffic Dept, Dept of Engineering and Infrastructure, SAPS, EMS	Affected area	ASAP	To prevent injury / mortality and to provide basic needs / services
10	Provide relief	Relevant Stakeholders	At affected area / relief centre	After assessment	To minimize impact
11	Mopping up	Relevant	Affected area	ASAP	To normalize

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
		Stakeholders			community
12	Assess possibility of further damage	District Disaster Management Team, SAWS	Entire area	Immediately	To minimize and/or prevent further disruption / damage
13	Issue early warning to areas vulnerable to further damage	District Disaster Management Team, SAWS	Vulnerable areas	Immediately	To minimize and/or prevent further disruption / damage
14	Institute recovery measures	PDMC, Treasury, Relevant Departments	JOC	Once situation is under control	To restore normal activities in area
15	Road closures	Municipality / Prov Traffic	On Site	ASAP	To prevent loss of life and property
16	Communication with population of affected areas	Municipality / Media / Disaster Management / SAPS	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent loss of life and property though public communication
17	Arrange temporary accommodation	Municipality / Social services/ NGO's	Available venues	When needed	To provide temporary accommodation – emergency shelter
18	Organize medical search parties	EMS / Fire & Rescue	On site	ASAP if people reported missing / unaccounted for	To treat medical cases
19	Rapid initial impact assessment	Municipal engineer and Provincial roads engineer	In affected area	Once storm has passed, if infrastructure damage suspected	To establish impact and immediate required repair to infrastructure as well as assistance required from province / national
20	Prioritize, plan and implement emergency repairs to infrastructure	Infrastructure owner	Areas with damaged infrastructure	ASAP – depending on prioritization and available resources	To restore critical and essential services
21	Verification of impact assessment	Province / NDMC / Contracted impact assessment team	Areas with damaged infrastructure	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms

Additional hazard-specific contingency options could include:

- Mobilise resources to repair structural damage to critical infrastructure;
- Mobilise urban / rural search and rescue capacity;
- Determine the need for emergency shelter; and
- Determine the need for emergency sustenance and transport.

6.3.8 Disaster Preparedness Plan: Lightning

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
1	Notify response teams (Municipal engineering, SAPS, Fire & Rescue, EMS, Dept. Water Affairs, SAWS)	Local Authority	24 Hour Call centre	Immediately	To activate response teams
2	Activate response teams	District Disaster Management and Services Standby Teams	From locations/ standby positions	Immediately	To assess impact and actions required
3	Identify affected and damaged area	District Disaster Management and Services Standby Teams	In affected area	Immediately	To determine the extent of the damage in order to assess the affected area
4	Determine impact	District Disaster Management and Services Standby Teams	At affected area	Immediately	To determine the actions and level of response required
5	Implement appropriate emergency intervention	First responders on scene	At scene	On arrival	To protect life and property and neutralize any impacting hazard
6	Activate JOC	Head of DRMC and senior management of all services / jurisdictions involved.	DRMC or alternative	Immediately if major flooding incident	To plan strategically and coordinate multidisciplinary response, relief and rehabilitation
7	Assess information	All services	JOC	Immediately	To plan actions
8	Design plan of action	DM Co-ordination Team / JOC Team	JOC	After assessment	To facilitate response and relief
9	Implement response actions	District Disaster Management Team, SAPS, EMS	Affected area	ASAP	To prevent injury / mortality and to provide basic needs / services
10	Provide relief	Relevant Stakeholders	At affected area / relief centre	After assessment	To minimize impact
11	Mopping up	Relevant Stakeholders	Affected area	ASAP	To normalize community
12	Assess possibility of further damage	District Disaster	Entire area	Immediately	To minimize and/or prevent further

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
		Management Team, SAWS			disruption / damage
13	Institute recovery measures	PDMC, Treasury, Relevant Departments	JOC	Once situation is under control	To restore normal activities in area
14	Road closures	Municipality / Prov Traffic	On Site	ASAP	To prevent loss of life and property
15	Communication with population of affected areas	Municipality / Media / Disaster Management / SAPS	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent loss of life and property though public communication
16	Arrange temporary accommodation	Municipality / Social services/ NGO's/ ESKOM	Available venues	When needed	To provide temporary accommodation – emergency shelter
17	Rapid initial impact assessment	ESKOM/ Municipal engineer and Provincial roads engineer	In affected area	Once storm has passed, if infrastructure damage suspected	To establish impact and immediate required repair to infrastructure as well as assistance required from province / national
18	Prioritize, plan and implement emergency repairs to infrastructure	Infrastructure owner	Areas with damaged infrastructure	ASAP – depending on prioritization and available resources	To restore critical and essential services
19	Verification of impact assessment	Province / NDMC / Contracted impact assessment team	Areas with damaged infrastructure	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms

Additional hazard-specific contingency options could include:

- Mobilise resources to repair structural damage to critical infrastructure;
- Mobilise urban / rural search and rescue capacity;
- Determine the need for emergency shelter; and
- Determine the need for emergency sustenance and transport.

6.3.9 Disaster Preparedness Plan: Sewage and/or drainage failure

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
1	Notify response teams (Municipal engineering, Dept. Water Affairs)	Local Authority	24 Hour Call centre	Immediately	To activate response teams
2	Activate response teams	District Disaster Management and Services Standby Teams	From locations/ standby positions	Immediately	To assess impact and actions required
3	Identify affected and damaged area	District Disaster Management and Services Standby Teams	In affected area	Immediately	To determine the extent of the damage in order to assess the affected area
4	Determine impact	District Disaster Management and Services Standby Teams	At affected area	Immediately	To determine the actions and level of response required
5	Implement appropriate emergency intervention	First responders on scene	At scene	On arrival	To protect life and property and neutralize any impacting hazard
6	Activate JOC	Head of DRMC and senior management of all services / jurisdictions involved.	DRMC or alternative	Immediately if major flooding incident	To plan strategically and coordinate multidisciplinary response, relief and rehabilitation
7	Assess information	All services	JOC	Immediately	To plan actions
8	Design plan of action	DM Co-ordination Team / JOC Team	JOC	After assessment	To facilitate response and relief
9	Implement response actions	District Disaster Management Team, SANDF, SAPS, EMS	Affected area	ASAP	To prevent injury / mortality and to provide basic needs / services
10	Provide relief	Relevant Stakeholders	At affected area / relief centre	After assessment	To minimize impact
11	Mopping up	Relevant Stakeholders	Affected area	ASAP	To normalize community
12	Assess possibility of further damage	District Disaster Management Team, SAWS	Entire area	Immediately	To minimize and/or prevent further disruption / damage

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
13	Issue early warning to areas vulnerable to further damage	District Disaster Management Team, SAWS	Vulnerable areas	Immediately	To minimize and/or prevent further disruption / damage
14	Road closures	Municipality / Prov Traffic	On Site	ASAP	To prevent loss of life and property
15	Communication with population of affected areas	Municipality / Media / Disaster Management / SAPS	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent further damage though public communication
16	Arrange temporary accommodation	Municipality / Social services/ NGO's	Available venues	When needed	To provide temporary accommodation – emergency shelter
17	Rapid initial impact assessment	Municipal engineer and Provincial roads engineer	In affected area	Once storm has passed, if infrastructure damage suspected	To establish impact and immediate required repair to infrastructure as well as assistance required from province / national
18	Prioritize, plan and implement emergency repairs to infrastructure	Infrastructure owner	Areas with damaged infrastructure	ASAP – depending on prioritization and available resources	To restore critical and essential services
19	Verification of impact assessment	Province / NDMC / Contracted impact assessment team	Areas with damaged infrastructure	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms

Additional hazard-specific contingency options could include:

- Mobilise resources to repair structural damage to critical infrastructure.

6.3.10 Disaster Preparedness Plan: Water Pollution

What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
Report water pollution	Public / Officials	From affected area	Upon observing pollution	To notify relevant department
Investigate pollution, identify source, duration, type and volume	Law enforcement/ Department of Water Affairs/ Working for Water	In affected area	Upon receiving notification	To determine origin and perpetrator(s)
Assess health risk as result of pollution	Environmental Health/Department of Water Affairs	In affected area	Upon receiving notification	To determine whether immediate action is required
Fine perpetrator	Law enforcement	Perpetrator's address	Upon identifying perpetrator	To discourage illegal dumping
Stop further pollution and further distribution of polluted water	Law enforcement	Affected area	Upon receiving notification	To stop further polluting effects and spread of possible dangerous impacts thereof
Rehabilitate affected area	Solid waste / Land owner / Perpetrator	In affected area	Within 1 day if hazardous / medical waste Otherwise within 5 working days	To restore area and discourage further polluting
Record case and actions taken	Solid waste	Municipal offices	Upon receiving notification	To create management information and establish trends
Monitor process of shale gas exploration and development	Public/ Municipal Officials/ DRMC	Municipal offices/ DRMC	Upon receiving notification	To notify relevant departments; To determine Preparedness Plan: Sewage and drainage failure

6.3.11 Disaster Preparedness Plan: Strong wind/tornado

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
1	Notify response teams (Municipal engineering, SAPS, Fire & Rescue, EMS, Dept. Water Affairs, SAWS)	Local Authority	24 Hour Call centre	Immediately	To activate response teams
2	Activate response teams	District Disaster Management and Services Standby Teams	From locations/ standby positions	Immediately	To assess impact and actions required
3	Identify affected and damaged area	District Disaster Management and Services Standby Teams	In affected area	Immediately	To determine the extent of the damage in order to assess the affected area
4	Determine impact	District Disaster Management and Services Standby Teams	At affected area	Immediately	To determine the actions and level of response required
5	Implement appropriate emergency intervention	First responders on scene	At scene	On arrival	To protect life and property and neutralize any impacting hazard
6	Activate JOC	Head of DRMC and senior management of all services / jurisdictions involved.	DRMC or alternative	Immediately if major flooding incident	To plan strategically and coordinate multidisciplinary response, relief and rehabilitation
7	Assess information	All services	JOC	Immediately	To plan actions
8	Design plan of action	DM Co-ordination Team / JOC Team	JOC	After assessment	To facilitate response and relief
9	Implement response actions	District Disaster Management Team, SANDF, SAPS, EMS	Affected area	ASAP	To prevent injury / mortality and to provide basic needs / services
10	Provide relief	Relevant Stakeholders	At affected area / relief centre	After assessment	To minimize impact
11	Mopping up	Relevant Stakeholders	Affected area	ASAP	To normalize community
12	Assess possibility of further damage	District Disaster Management Team, SAWS	Entire area	Immediately	To minimize and/or prevent further disruption / damage

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
13	Issue early warning to areas vulnerable to further damage	District Disaster Management Team, SAWS	Vulnerable areas	Immediately	To minimize and/or prevent further disruption / damage
14	Institute recovery measures	PDMC, Treasury, Relevant Departments	JOC	Once situation is under control	To restore normal activities in area
15	Road closures	Municipality / Prov Traffic	On Site	ASAP	To prevent loss of life and property
16	Communication with population of affected areas	Municipality / Media / Disaster Management / SAPS	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent loss of life and property though public communication
17	Arrange temporary accommodation	Municipality / Social services/ NGO's	Available venues	When needed	To provide temporary accommodation – emergency shelter
18	Organize medical search parties	EMS / Fire & Rescue	On site	ASAP if people reported missing / unaccounted for	To treat medical cases
19	Rapid initial impact assessment	Municipal engineer and Provincial roads engineer	In affected area	Once storm has passed, if infrastructure damage suspected	To establish impact and immediate required repair to infrastructure as well as assistance required from province / national
20	Prioritize, plan and implement emergency repairs to infrastructure	Infrastructure owner	Areas with damaged infrastructure	ASAP – depending on prioritization and available resources	To restore critical and essential services
21	Verification of impact assessment	Province / NDMC / Contracted impact assessment team	Areas with damaged infrastructure	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms

Additional hazard-specific contingency options could include:

- Mobilise resources to repair structural damage to critical infrastructure;
- Mobilise urban / rural search and rescue capacity;
- Determine the need for emergency shelter; and
- Determine the need for emergency sustenance and transport.

6.3.12 Disaster Preparedness Plan: Heavy snowfall

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
1	Notify response teams (Municipal engineering, SAPS, Fire & Rescue, EMS, Dept. Water Affairs, SAWS)	Local Authority	24 Hour Call centre	Immediately	To activate response teams
2	Activate response teams	District Disaster Management and Services Standby Teams	From locations/ standby positions	Immediately	To assess impact and actions required
3	Identify affected and damaged area	District Disaster Management and Services Standby Teams	In affected area	Immediately	To determine the extent of the damage in order to assess the affected area
4	Determine impact	District Disaster Management and Services Standby Teams	At affected area	Immediately	To determine the actions and level of response required
5	Implement appropriate emergency intervention	First responders on scene	At scene	On arrival	To protect life and property and neutralize any impacting hazard
6	Activate JOC	Head of DRMC and senior management of all services / jurisdictions involved.	DRMC or alternative	Immediately if major flooding incident	To plan strategically and coordinate multidisciplinary response, relief and rehabilitation
7	Assess information	All services	JOC	Immediately	To plan actions
8	Design plan of action	DM Co-ordination Team / JOC Team	JOC	After assessment	To facilitate response and relief
9	Implement response actions	District Disaster Management Team, SANDF, SAPS, EMS	Affected area	ASAP	To prevent injury / mortality and to provide basic needs / services
10	Provide relief	Relevant Stakeholders	At affected area / relief centre	After assessment	To minimize impact
11	Mopping up	Relevant Stakeholders	Affected area	ASAP	To normalize community
12	Assess possibility of further damage	District Disaster Management Team, SAWS	Entire area	Immediately	To minimize and/or prevent further disruption / damage

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
13	Issue early warning to areas vulnerable to further damage	District Disaster Management Team, SAWS	Vulnerable areas	Immediately	To minimize and/or prevent further disruption / damage
14	Institute recovery measures	PDMC, Treasury, Relevant Departments	JOC	Once situation is under control	To restore normal activities in area
15	Road closures	Municipality / Provincial Traffic	On Site	ASAP	To prevent loss of life and property
16	Communication with population of affected areas	Municipality / Media / Disaster Management / SAPS	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent loss of life and property though public communication
17	Arrange temporary accommodation	Municipality / Social services/ NGO's	Available venues	When needed	To provide temporary accommodation – emergency shelter
18	Organize medical search parties	EMS / Fire & Rescue	On site	ASAP if people reported missing / unaccounted for	To treat medical cases
19	Rapid initial impact assessment	Municipal engineer and Provincial roads engineer	In affected area	Once storm has passed, if infrastructure damage suspected	To establish impact and immediate required repair to infrastructure as well as assistance required from province / national
20	Prioritize, plan and implement emergency repairs to infrastructure	Infrastructure owner	Areas with damaged infrastructure	ASAP – depending on prioritization and available resources	To restore critical and essential services
21	Verification of impact assessment	Province / NDMC / Contracted impact assessment team	Areas with damaged infrastructure	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms

Additional hazard-specific contingency options could include:

- Mobilise resources to repair structural damage to critical infrastructure;
- Mobilise urban / rural search and rescue capacity;
- Determine the need for emergency shelter; and
- Determine the need for emergency sustenance and transport.

6.3.13 Disaster Preparedness Plan: Oil Spill

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
1	Facilitate communication between oil companies and Authorities	South African Petroleum Industry Association and District Disaster Management Services	Affected Municipalities	Immediately	Assist with response
2	Inform SAMSA of the Incident	District Disaster Management Services	24 hour call centre	Immediately	Arrange for additional response
3	Take steps to minimize pollution	District and Local Disaster Management Services	On site	Immediately	Mitigate pollution impact
4	Arrange specialist advice with regards to waste disposal and legal requirements	District Disaster Management Services	Affected Area	After initial assessment	To compensate for capacity shortfalls
5	Contact SANDF	District Disaster Management Services	Call Centre	Immediately	Mobilise SANDF to assist transport and manpower
6	Contact SAPS	District Disaster Management Services	Call Centre	When needed	To assist with crowd control and protection of property
7	Organise clean-up operations under supervision of DEAT	Local Disaster Management Services and DEAT	Affected Area	Following Impact Assessment	Recovery and Rehabilitatio n
8	Assist stakeholders with regards to accessing polluted areas	Local Disaster Management Services	Affected Areas	When needed	Facilitate access to affected areas
9	Set up and man operational centre	District Disaster Management Services, DEAT, SAMSA	JOC	Immediately	To plan strategically and coordinate multidisciplin ary response, relief and rehabilitation
10	Activate response teams	District Disaster Management and Services Standby Teams	From locations/ standby positions	Immediately	To assess impact and actions required
11	Identify affected and damaged area	District Disaster Management and Services	In affected area	Immediately	To determine the extent of the damage in order to

No	What must be done	Who must do it	Where it must be done	When it must be done	Why it must be done
		Standby Teams			assess the affected area
12	Determine impact	District Disaster Management and Services Standby Teams, DEAT and SAMSA	At affected area	Immediately	To determine the actions and level of response required
13	Assess possibility of further damage	District Disaster Management Team, DEAT	Entire area	Immediately	To minimize and/or prevent further disruption / damage
14	Communication with population of affected areas. Create pamphlets and visit the affected areas.	Municipality / Media / Disaster Management	On-site media liaison point / Media Centre close to JOC	ASAP	To prevent loss of life and property though public communicati on
15	Verification of impact assessment	Province / NDMC / Contracted impact assessment team	Areas with damaged infrastructure	ASAP after rapid initial impact assessment	To quantify and verify infrastructure damage and repair / replacement cost in monetary terms
16	Communicate with local environmental agencies and relevant NGO's	Local Disaster Management Services	Affected Areas	After impact assessment	To obtain advice with regards to local terrain, wildlife.
17	Obtain and disseminate weather forecast	Disaster Management Services, SAWS	Affected Jurisdictions	ASAP	To inform pollution prevention and clean-up operations

6.4 Preparedness capacity for the O.R. Tambo District Municipality

The organisational structure for preparedness within the Municipality includes the O.R. Tambo Disaster Risk Management Centre, Disaster Management representatives from each Local Municipality within the District, the Disaster Risk Management Advisory Forum, the top-management team of ORTDM, the focal points for Disaster Management within municipal departments within the Municipality, departmental planning groups, preparedness planning groups, Joint Response & Relief Management Teams, Recovery and Rehabilitation Project Teams, and the O.R. Tambo Disaster Management Communications Centre. The total structure of the Municipality, with every member of personnel and every resource can potentially form part of preparedness capacity. On-going capacity building programmes will be required to ensure the availability of adequate capacity for disaster preparedness.

The O.R. Tambo Disaster Management Communications Centre is responsible for the operational procedures associated with day-to-day operational response to emergencies by municipal departments. The O.R. Tambo Disaster Management Communications Centre and the O.R. Tambo top-management team are jointly responsible for the emergency management policy framework and organisation that will be utilized to mitigate any significant emergency or disaster affecting the Municipality.

6.5 Gaps and recommendations

The main gaps confronting the District within the preparedness arena relates to the number of personnel available for standby duties and the communication and monitoring facilities available to the District:

- The establishment of capacity to have a first and second-call person on duty at all times without exceeding the restrictions on working and standby hours contained in the basic conditions of employment act is core to ensuring the preparedness of the District; and
- The level of preparedness will also depend on training and experiential learning during operations and exercises.

It can therefore be recommended that the District should consider establishing a 24-hour monitoring and communications centre that can monitor emergency and essential services' communications and early warning information systems and identify developing emergencies and disasters so that appropriate response can be activated and deployed.

6.6 Standard definition of incident levels and warning levels

It is advisable that the ORTDM adopts a formal policy for the declaration of a major incident or emergency and disasters. The following table outlines a possible five-level incident declaration methodology followed by two tables for early warning levels and incidents for local municipalities and the ORTDM.

Five incident levels	Interpretation of incident levels	Emergency levels
Level 5	Disaster	**General Emergency – Warning** "We expect or have a general emergency that is likely to significantly affect additional people, property, the environment or economy. We have insufficient resources to deal with the incident and need urgent assistance."
Level 4	Major Incident	**Site Emergency – Watch** "We expect or have an emergency and there is a possibility that it may significantly affect additional people, property, the environment or economy. We may require additional external assistance and request agencies to be on standby to assist."
Level 3	Incident	**Alert – Advisory** "We expect or have an incident which is contained and will not significantly affect additional people, property, the environment or economy. We have sufficient resources to deal with the incident but may require limited external assistance."
Level 2	Minor Incident	**Unusual event** "We have had a minor incident which will not significantly affect additional people, property, the environment or economy. Our resources are sufficient and we do not require external assistance."
Level 1	Occurrence	**Once-off occurrence** "We have an occurrence which only affects a small number of individuals and does not significantly affect any additional communities, property, the environment or economy. Our resources are sufficient to deal with the occurrence and we do not require assistance from external role-players."

Early Warning Levels

Early Warning Levels	LMs	Early Warning Levels	ORTDM
EW-L-0	Normal	**EW-D-0**	Normal
EW-L-1	Local Alert	**EW-D-0**	Normal
EW-L-2	Local Watch	**EW-D-1**	District Alert
EW-L-3	Local Warning	**EW-D-2**	District Watch
		EW-D-3	District Warning

Incident Levels

Incident Levels	LMs	Incident Levels	ORTDM
1	Occurrence	1	Occurrence
2	Minor Incident	1	Occurrence
3	Incident	2	Minor Incident
4	Major Incident	3	Incident
5	Disaster	4	Major Incident / Disaster

The IIMP includes an automated warning system.

The responsibility for making such declarations should be clearly assigned and should preferably be assigned to a senior standby manager or senior control centre supervisor on duty. The declaration will be made to the public and to stakeholders that may be assisting in such cases. These levels must be communicated to assisting agencies along with pre-determined rendezvous points and staging areas and should be addressed in mutual assistance agreements or SLAs.

6.7 Any-hazard Response Procedure

During response and recovery operations the relevant disaster preparedness plans of the Municipality will be executed by disaster and emergency management structures.

The following procedure will be implemented for response to any type of hazard impact or disaster. The reason for this any-hazard approach is that there are many common response activities that exist within the response required to different hazards, as illustrated in Figure 13.

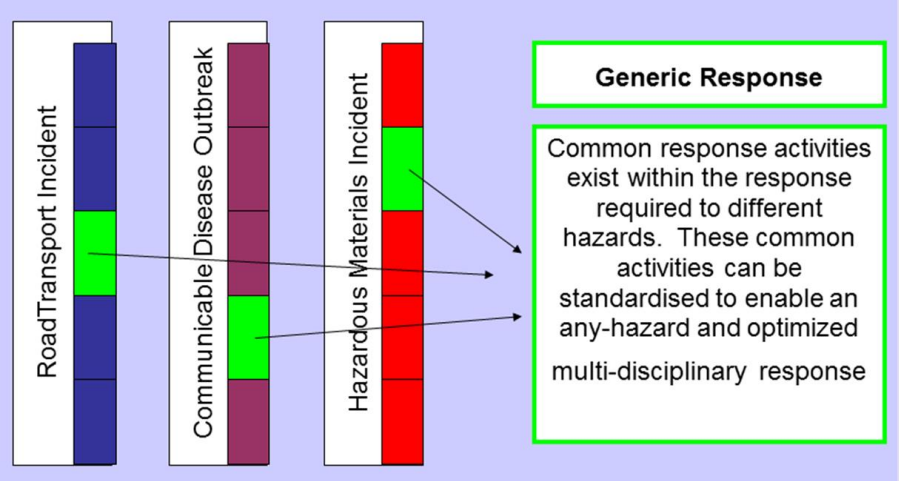


Figure 11: Reason for any-Hazard response procedure

During Disaster Response the Unified Command approach will be implemented. The basic steps and actions of the response and relief management procedure are summarised below.

The Any-Hazard Response Management Procedure consists of 10 steps, being:

1. Notification / Activation;
2. Rapid Initial Assessment;
3. Establishing a response structure;
4. Re-assessment;
5. Establishing incident management objectives;
6. Deciding on an action plan;
7. Implementation;
8. Establishing a strategic response structure;
9. Monitoring & Evaluation; and
10. Close incident and document.

This procedure is compatible with KPA 4 of the South African Policy Framework for Disaster Management, as well as the Unified Command procedure accepted and implemented by the National Disaster Management Centre prior to the 2010 FIFA World Cup™.

6.7.1 Notification/activation

During the notification phase, it must be ensured that management and operational staff are informed and mobilised as speedily and effectively as possible. To facilitate the foregoing it is imperative that 24 hour duty and standby rosters are kept current and available at the 24 hour communication facilities for the O.R. Tambo District DRMC and all service communications centres that have an emergency and/or disaster response role in the District. Such call-out lists must indicate the first response mobilisation and 2nd line responders clearly.

It is therefore necessary to design standardised response procedures and protocols for specific incidents and also consider variables such as season and time of day. See hazard-specific preparedness plans in Annexure A (Section 6.3) as well as pre-defined hazard-specific contingency plans.

6.7.2 Rapid Initial Assessment

The basis for any effective response is the initial rapid but accurate on-scene assessment of the situation i.e. nature of the hazard, resource requirements, immediate threats to people, property and the environment, magnitude and boundaries of current and possible future impacts, and to be able to communicate this information in a predetermined standardised format.

Rapid and effective response can also be facilitated if a standardised initial report-back includes response suggestions and needs. The rapid initial assessment must be as accurate as possible with accurate predictions of what may still occur.

6.7.3 Establish response management structure

Once the initial response has been effected and services arrive on the scene, the process for the implementing a secondary response must be initiated as soon as possible. This response must be based on the needs received from the scene as a result of the rapid assessment and must build on existing response levels and strengthen the deployments and actions on scene.

Structures to co-ordinate response

The establishment of a structure to manage, co-ordinate and integrate response actions at the scene of an incident is imperative and a priority for all services involved at an incident. Such a basic structure should be contained in a "Standardised Incident Management Plan" agreed to beforehand by all role-players.

There are a number of essential elements to the structure and principles, which should be observed at all times:

- Flexible organisation: The composition of the organisation must be adapted to the size, magnitude and nature of the incident. The organisation must be adapted (increased or decreased) as circumstances dictate;
- Standardised Terminology: All services must be informed and be familiar with the organisation and terms used by services, which may be involved in an incident:
- Tactical Incident Management facilities / structures: As part of the management structure, there are a number of essential facilities / structures, which may need to be established at the scene of an incident, these can include:
  - Outer perimeter / cordon / public exclusion zone;
  - Inner perimeter;
  - Establishing a landing zone;
  - Staging area;
  - Incident command post;
  - Casualty clearing post;
  - Information point / media liaison;
  - Communications network;
  - Access control to incident site and emergency infrastructure.
- On-Site Incident Coordination Point: This is an on-scene facility where tactical decision-making and control of inter-disciplinary co-ordination takes place. Also known as Incident Command Post (ICP), On-site JOC / Forward Control or Command Post (FCP). This is the single point of command for all on-site operations during the response phase of an emergency and will be located at an appropriate location at or near the scene of the emergency, normally within the outer perimeter.
- The incident Commanders / Managers from key response agencies will operate under Unified Command to co-ordinate incident operations.
- Joint Incident Management Team / Unified Command:
  - One of the main objectives to ensure effective on-scene management of services is to establish a "Unified Incident Management" system. This system allows for a structure whereby overall incident objectives and strategies can be formulated. In incidents involving multiple jurisdictions, a single jurisdiction with multi-agency involvement, or multiple jurisdictions with multi-agency involvement, unified command allows agencies with different legal, geographic, and functional authorities and responsibilities to work together effectively without affecting individual agency authority, responsibility, or accountability;
  - In this regard it is important that the representatives be suitably mandated and takes full responsibility and charge of its service at that level. It will ensure that the agreed upon operational plan and integrated tactical strategies are implemented by making optimum use of available resources;
  - It is normally structured to facilitate activities in five major functional areas:
    - Command;

        - Operations;
        - Planning;
        - Logistics; and
        - Finance and administration.
    - This organisation should also include the following elements depending on the situation:
        - Media / public liaison – information;
        - Safety; and
        - Liaison – supporting agency / jurisdiction liaison (Disaster Management is well-placed for this).
- Depending on the situation, the estimated duration of the incident must be established in order to plan the need for the rotation of staff and to plan meals, etc.;
- Determining the primary role-player for an incident or activity :
    - If a situation occurs where there is no immediate agreement between parties regarding who should be the primary role-player in a specific emergency situation, a pre-determined procedure should be followed to resolve the issue;
- Communications;
- District communication networks and structures are described within the institutional arrangements section of this plan.

6.7.4 Re-assess

The first very important step after the Joint Incident Management Team has been established is for them to re-assess the situation. During this process, there are three aspects which must be addressed.

Re-assess Resources

The team needs to establish:

- Present deployment and how effective it is;
- Possible further immediate, medium and long-term resource needs.

An analysis of special equipment and services and needs must be done at this stage.

When evaluating the mobilising of additional resources the following needs must be taken into account;

- The type of human resources required i.e. Skills and type of tasks to be performed.
- What equipment and supplies is required and which must come first (Priorities)
- Who will be responsible for the control of essential supplies
- Which essential services are required and/or should be restored first (Priorities)
- Observe and ensure that supply chain management / logistics are complied with (Accountability)
- Possible invoking of mutual aid arrangements and/or other formalised agreements

Re-assess Hazard

A thorough analysis of the potential impact of the hazard must be made. In this regard the following should be assessed;

- Present impact
- Potential hazard impact (worst case scenario)
- Also think beyond present situation
- Obtain specialist input
- Consider implementation of risk specific plans

Re-assess Situation

In this regard the following aspects must be carefully analysed and assessed.

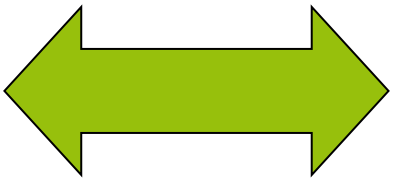
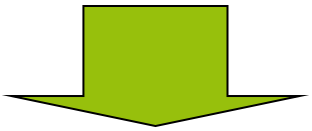
Look up - Establish present weather and get prediction for next 24 hours. It is important to look at the impact of the weather may have on the situation and what short and long term – changes may are predicted.	
Look around - Look at the topography and natural environment and establish what effect it would have on the hazard behaviour and impact	
Look down - Look at the built environment, the natural environment and the economic activities and establish how the hazard can possibly affect these activities. It is also important to consider/establish land owner and type of facility – e.g. key points being affected.	

Figure 12: Re-assess the situation

Do a complete evaluation to establish the severity and implications of the problem (direct and indirect implications).

6.7.5 Establish incident management objectives

Once the re-assessment have been completed the team should decide on the incident management objectives, and the following should receive attention:

- Broad statement of intent
- Think strategically
- Determine priorities
- Ensure public protection and secure affected area.

It is important that emergency worker and public protection be observed throughout the process of setting objectives.

Deciding on an Action Plan

Once the incident management objectives are complete a well framed and well prepared plan of action is essential for the effective execution of the operation.

To plan effectively the following should be considered:

- Situational analysis (Clearly mapped)
- Resource status and response levels (Accurate recording)
- Think of worst case scenario (Think ahead)
- Plan for all phases (response, relief, recovery, rehabilitation and reconstruction)
- Decide on key objectives and responsibilities
- Consult with external organisations
- Protective actions (Response activities)
- Protective action strategies (Response management strategies)
- Incident Communication planning (Radios, IT , Public and Media)
- Develop alternatives (think beyond the normal)
- Review alternatives
- Decide on plan of action

6.7.6 Implementation

Once a decision has been made on the plan of action the plan must be communicated clearly to all role-players. In this regard, the following should receive particular attention:

- Communicate objectives, responsibilities, timeframes clearly
- Action tasks clearly and to specific services and/or sections
- Motivate staff and support implementation throughout.

6.7.7 Establishing a Strategic Response Management Structure

A strategic response management structure can be established if the severity of the incident requires higher-level decision-making powers or wider coordination.

Disaster Operations Centre/Joint Operations Centre

The Disaster Operations Centre is an off-site, centralised facility, which is provided by the District Disaster Risk Management Centre, where multi-disciplinary co-ordination and strategic decision-making takes place. It is a fully equipped dedicated facility within the O.R. Tambo Disaster Risk Management Centre.

For the purpose of multidisciplinary strategic management of response and recovery operations, this facility must be capable of accommodating any combination of emergency and essential services representatives, including all relevant role players and stakeholders identified in response and recovery plans.

This facility must be activated when a local, provincial or national disaster occurs or is threatening to occur within the boundaries of the District.

The Disaster Operations Centre may be activated immediately upon receipt of information of a specific type of incident, or may be activated upon request or advice of the joint incident management team(s) at the scene of the incident(s).

Initial Strategic Situation Analysis

Once the initial activation has taken place the following should take place:

- Convene meeting in the JOC;
- Review situation on available information;
- All possible role-players must be identified and mobilised if not yet present;
- Identify and appoint incident co-ordinator;
- Ensure all services required have been activated and are responding to their areas of responsibility;
- Compile initial situation report for distribution to all stakeholders, internal and external;
- Establish public notification needs;
- Establish public safety advisory needs;
- Generate media release for public communication;
- Monitor, assess and support services on-scene;
- Establish possible resource needs;
- Evaluate resources available vs. resources possibly required;
- Establish availability of resources, consult database;
- Establish possible need for invoking mutual aid agreements and do initial notifications of possible support required; and
- Monitor, re-assess and adapt strategy.

Structures to provide relief

Additional off-site structures may need to be established to provide relief, these could include:

- Mass Care centres
- Victim information centres
- Reconciliation areas (where victims and their friends / family can be reunited)
- Data processing centres
- Media briefing facilities
- Counselling facilities
- Animal holding areas

6.7.8 Monitor & Evaluate

The successful implementation and execution of any plan is very dependent on sustained and effective monitoring and evaluation of its effectiveness.

This must be ensured by observing the following principles;

- To constantly receive and evaluate feedback reports from line departments;
- To regularly direct requests and ask questions;
- To take note of and observe status changes on an on-going basis;
- To analyse actions and anticipate problems/changes (be flexible);
- To regularly re-assess the situation and the effectiveness of actions and adapt strategies as circumstances dictate. Repeat process - Schedule meetings at specific agreed regular times.

6.7.9 Close incident & document

Once an incident has been effectively managed and services can return to normal operations, the following actions must be taken:

De- mobilise

Once the response to an incident is completed and there is consensus amongst all role-players that the point has been reached for services to stand-down from the incident and to return to their normal activities, the demobilisation phase is reached.

Ensure that all services have received de-mobilising orders and are reporting to their work stations.

Complete Review (Post Mortem)

After each incident, copies of all messages, reports and incident logs of all services must be submitted to the O.R. Tambo District DRMC for joint analysis and review.

There must be a formal and structured critical review of all actions and all findings and/or areas of concern must be recorded and included in a report with the necessary recommendations and/or corrective actions to improve response in future.

Corrective actions

Corrective action plans must be drawn up and are designed to implement changes that are based on lessons learned and recommendations made from reports and reviews after actual incidents or from training and exercises.

Such actions and recommendations must include time frames and deadlines for implementation. The response management flowchart below illustrates the initial activation and subsequent possible escalation of incidents to Disaster Management.

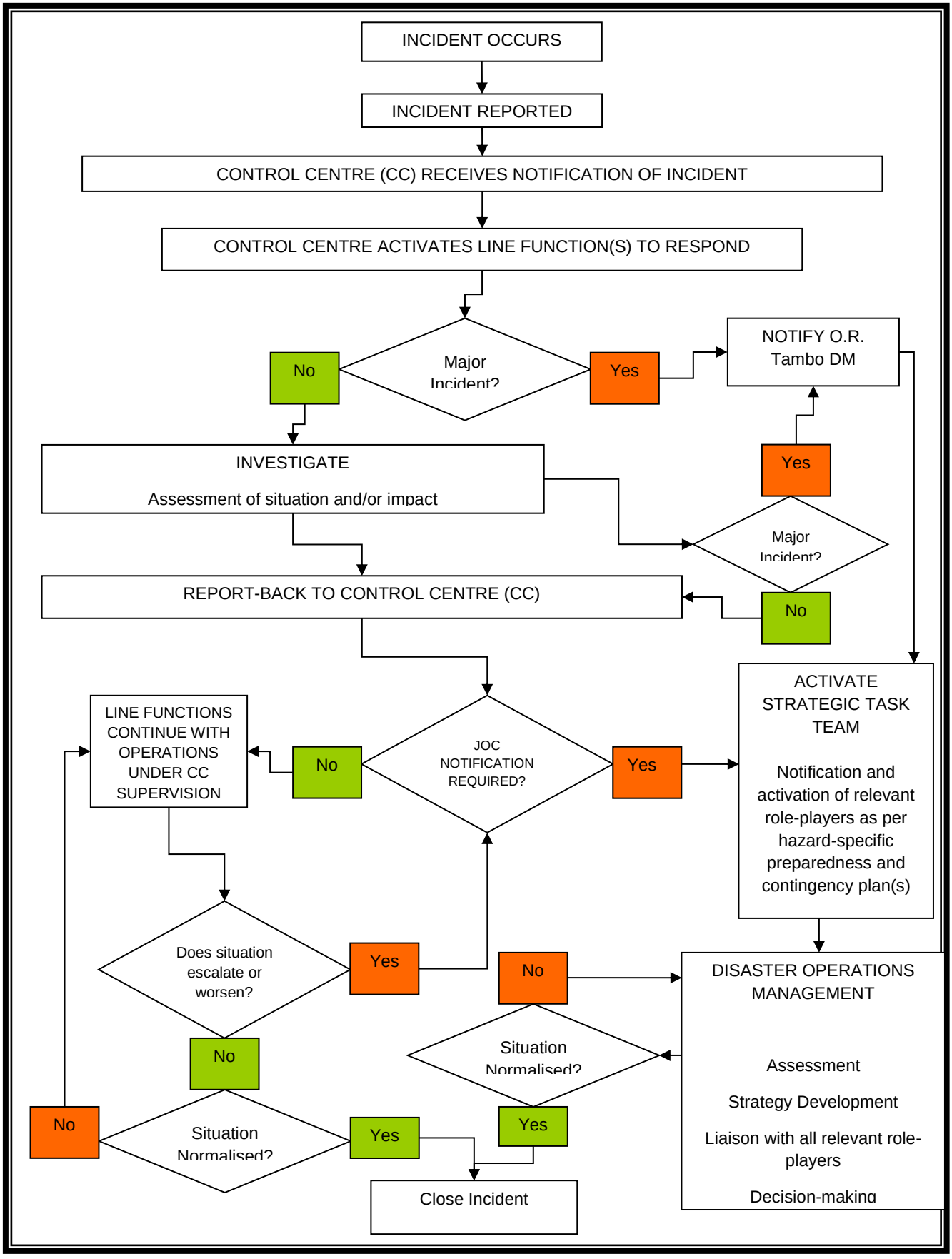


Figure 13 Response Management Flowchart

6.8 Declaration of a state of disaster and disaster classification

It is advisable that the O.R. Tambo Municipal Council adopts a formal policy for the declaration of a local state of disaster. Such a policy will replace this section of the plan which provides a general description of issues surrounding the declaration of a state of disaster.

When a disastrous event occurs or is threatening to occur in the area of the district, the District Municipality, through its Disaster Risk Management Centre (or alternatively the most senior official responsible for Disaster Management), will determine whether the event is a disaster in terms of the Act, and, if so, the Head of the Centre (or alternatively the most senior official responsible for Disaster Risk Management) will immediately:

- Initiate efforts to assess the magnitude and severity or potential magnitude and severity of the disaster;
- Alert Disaster Management role-players in the municipal area that may be of assistance in the circumstances;
- Initiate the implementation of the disaster response plan or any contingency plans and emergency procedures that may be applicable in the circumstances; and
- Inform the Eastern Cape Provincial Disaster Management Centre and the National Disaster Management Centre of the disaster and its initial assessment of the magnitude and severity or potential magnitude and severity of the disaster.

When informing the National Centre and the Eastern Cape Provincial Disaster Management Centre the O.R. Tambo Disaster Risk Management Centre (or alternatively the most senior official responsible for Disaster Management) may make recommendations regarding the classification of the disaster as may be appropriate. Irrespective of whether a local state of disaster has been declared or not, the Council of the O.R. Tambo District Municipality, acting after consultation with the relevant Local Municipality, is primarily responsible for the co-ordination and management of local disasters that occur in its area, except if an agreement is in place between ORTDM and a Local Municipality in its area where the Local Municipality assumes responsibility (See Section 54 and 55 of the Act). Whether or not an emergency situation is determined to exist, municipal and other agencies may take such actions under this plan as may be necessary to protect the lives and property of the inhabitants of the Municipality.

Declaration of a local state of disaster

In the event of a local disaster the relevant municipal council may by notice in the provincial gazette declare a local state of disaster if existing legislation and contingency arrangements do not adequately provide for the municipality to deal effectively with the disaster; or other special circumstances warrant the declaration of a local state of disaster.

If a local state of disaster has been declared, the Council may make by-laws or issue directions, or authorise the issue of directions to:

- Assist and protect the public;
- Provide relief to the public;
- Prevent or combat disruption; or
- Deal with the destructive and other effects of the disaster.

6.9 Gaps and recommendations

A lack of communication and ineffective inter-agency co-operation are the most often experienced challenges in the response phase to major incidents and disasters. The any-hazard response procedure presented at the start of this chapter can address these challenges if all stakeholders are trained and experienced in the procedure and if positive relationships have been built between agencies. Training, exercises and drills will therefore increase capacity for response within the district. The ORTDM DRMC

would be well-advised to present a programme of drills and exercises that over time will exercise response to priority risks and thereby increase institutional capacity for risk reduction and disaster response.

7 Implementation, testing and review of the plan

Implementation. The Disaster Management plan is a working guideline and implementation plan. Upon approval, the implementation actions listed in this document should be actioned as soon as reasonably possible.

Testing and review. The O.R. Tambo District Municipality will regularly review and update its plan, as required by Section 48 of the Disaster Management Act, No. 57 of 2002. The Disaster Risk Management Advisory Forum (ORT DRMAF) shall be responsible for the review of the municipal Disaster Management plan on an annual basis. It is critical importance that especially the emergency response aspects of this plan be exercised at regular intervals. Table-top, walk-through and simulation exercises can be used to ensure that all role-players know what is expected from them in different emergency scenarios. It will be advisable to establish a comprehensive simulation exercise programme in the District.

Action: The ORT DRMAF will implement an annual review of this Plan and re-align all plans and assessments should municipal boundaries change. The ORTDM will also establish an exercise programme for this Plan.

8 Conclusion

A separate Disaster Management Plan included into the IDP but standing on its own and isolated from the rest of the IDP does not necessarily give evidence of the integration of Disaster Management into the IDP. All departments and role-players submitting input to the content of the current and future IDP of the Municipality are therefore urged to consider the inclusion and integration of Disaster Risk Management into their strategies, operational planning and project implementation.

It is strongly recommended that the ORTDM institutes the compulsory consideration of Disaster Risk Management in the planning and execution stages of all IDP projects. This will ensure the integration of Disaster Management into the IDP, and will ensure that all plans and projects are focused on contributing to disaster risk reduction and disaster preparedness – thus reducing the impact of disasters on lives, property, community activities, the economy and the environment in the ORTDM.

9 Reference documents / Bibliography

10 Annexures

The following annexures are attached to this plan:

Annexure A: Emergency Numbers List for Chris Hani

Annexure B: Management Responsibilities

Annexure C: List of supporting plans and standard operating procedures

Annexure A: Key Stakeholders Contact List

DISTRICT/LOCAL	NAME AND SURNAME	DEPARTMENT/ ORGANISATION	TEL	FAX	CELLPHONE	E-MAIL ADDRESS
POLICE			10111			
AMBULANCE SERVICES			10177			
ORTDM CCC			047 501 6494 047 531 4103			

Annexure B: Institutional responsibilities

The institutional responsibilities described here are supplementary to those described in Section 3.4.

Councillors

Councillors must ensure that ward committees are established and involved in Disaster Risk Management programs with the emphasis on disaster risk reduction and related public awareness and education. The main aim is to enhance the natural coping skills of the public.

Director Community Services

The Manager of the Community Development Services must:

- Ensure that departmental disaster plans are compiled and maintained;
- Ensure the effective planning for, utilisation and functioning of municipal emergency services for pre-disaster risk prevention, mitigation and reduction, disaster response and post disaster recovery and rehabilitation;
- Compile pro-active departmental Disaster Risk Management programs to support risk reduction or elimination;
- Compile reactive departmental Disaster Management plans to ensure municipal services continuation during emergency/disaster situations; and
- Coordinate response and mutual aid agreements with adjacent municipalities and private sector entities.

Chief Fire Officer

The Chief Fire Officer must ensure that fire prevention and fire suppression disaster risk plans are compiled and maintained with specific reference to the following:

- Compilation of pro-active fire prevention and fire fighting Disaster Risk Management programs to support risk reduction or elimination;
- Compilation of reactive departmental Disaster Management plans to ensure service continuation during emergency/disaster situations;
- Ensure acquisition of and ensured access to resources for Disaster Risk Management purposes.
- Ensure compliance with relevant legislation e.g. Fire Service Act, Veld and Forest Fire Act, National Building Act; and
- Develop, maintain and exercise an emergency plan for the rendering of Fire Fighting, Search and Rescue and technical assistance in the event of a disaster.

Director Technical Services

The Manager Technical Services must ensure that Disaster Management plans are compiled and maintained with specific reference to the following:

- Compilation of pro-active departmental Disaster Risk Management programs to support risk reduction or elimination;
- Compilation of reactive departmental Disaster Management plans to ensure service continuation during emergency/disaster situations;
- Identifying and prioritizing essential services that require special maintenance and/or restoration as the result of an emergency or disaster;
- Establishing and maintaining a resources database that is integrated with the Disaster Risk Management Centre's Disaster Risk Management resources database; and
- The conducting of regular environmental impact studies.

Director Corporate Services

The Manager Corporate Services must ensure that Disaster Management plans are compiled and maintained in his/her service, with specific reference to the following:

- Compilation of pro-active departmental Disaster Risk Management programs to support risk reduction or elimination;
- Compilation of reactive departmental Disaster Management plans to ensure service continuation during emergency/disaster situations;
- Monitoring compliance with relevant legislation, regulations, licenses and by-laws; and
- Supplying resources for Disaster Risk Management purposes.

Manager Corporate Services

The Manager Corporate Services is responsible for:

- Coordinating of the establishment for human resource base to assist during disasters;
- Coordinating offers of and appeals for volunteers in conjunction with the Public Relations Officer under the direction of the Disaster Risk Management Advisory Forum (DRMAF);
- Supporting the DRMAF in risk-reducing public education and awareness (risk reduction) programs;
- Research and document potential occupational health and safety issues to which all emergency responders, including volunteers, might be exposed to; and
- Ensure that all departmental and emergency responders attend appropriate training and refresher courses.

Media Liaison Officer

The responsible person must ensure that Disaster Management plans are compiled and maintained with specific reference to the following:

- Compilation of pro-active departmental Disaster Risk Management programs to support risk reduction or elimination;
- Compilation of reactive departmental Disaster Management plans to ensure service continuation during emergency/disaster situations; and
- Disaster Risk Management projects must be forwarded to the Manager Communication, via the DRMAF, especially those aimed at risk reduction and must be communicated to ensure effective public awareness.

Chief Finance Officer

The Finance must ensure that disaster plans are compiled and maintained with specific reference to the following:

- Compilation of pro-active departmental Disaster Risk Management programs to support risk reduction or elimination;
- Compilation of reactive departmental Disaster Management plans to ensure service continuation during emergency/disaster situations;
- Managing donations for emergency response;
- Facilitating emergency procurement;
- Initiating and facilitating efforts to make funds available for Disaster Risk Management in the municipal area;
- Supplying financial resources for Disaster Risk Management purposes;
- Liaising with the Provincial officials with respect to the utilization of Provincial emergency relief funds where applicable; and
- Setting up a dedicated disaster contingency fund.

Director Internal Audit

The Manager Internal Audit must ensure task compliance as contained in the Disaster Management Plan with specific reference to:

- Disaster Management plans, programs and procedures with regard to:
    - Risk assessment from a disaster risk reduction and prevention management perspective;
    - Emergency plans and activation procedures (preparedness / response / contingency);
    - Standard Operating Procedures (SOPs); and
- Auditing of disaster risk reduction institutional capacity, plans and implementation management processes in compliance with the requirements the Disaster Management Act (Act 57 of 2002).

Director Planning and Economic Development

The Director Planning and Economic Development must ensure that Disaster Management plans are compiled and maintained with specific reference to the following:

- Compilation of pro-active departmental Disaster Risk Management programs to support risk reduction or elimination;
- Compilation of reactive departmental Disaster Management plans to ensure service continuation during emergency/disaster situations;
- Ensure that risk reduction and mitigation principles are applied in all development projects;
- Include the reduction of natural disasters as an element in environmental education programmes;
- Supplying resources for Disaster Risk Management purposes; and
- Supply information, to the Disaster Risk Management Centre, regarding projects in the District, economic development planning, spatial development and tourism.

IDP Manager

The IDP Manager must ensure compliance with specific tasks as contained in the Disaster Management Plan:

- Disaster Management plans and procedures with regard to:
    - Risk assessment from a Disaster Management perspective; and
- Disaster Risk Management incorporated into IDP plans and projects.

Director Human Settlements

The Director Human Settlements must:

- Ensure that departmental disaster plans are compiled and maintained;
- Ensure the effective planning for, utilisation and functioning of the department for pre-disaster risk prevention, mitigation and reduction, disaster response and post disaster recovery and rehabilitation;
- Compile pro-active departmental Disaster Risk Management programs, standards and initiatives to support risk reduction or elimination;
- Compile reactive departmental Disaster Management plans to ensure municipal services continuation during emergency/disaster situations;
- Ensure effective facilitation for provision of appropriate and adequate emergency shelter and other related services; and
- Coordinate response and mutual aid agreements with government departments; local municipalities; neighbouring municipalities and the private sector.

Annexure C: Supporting plans and standard operating procedures

Local Municipal Disaster Management Plans

- King Sabata Dalindyebo Municipality Municipal Disaster Management Plan
- Port St Johns Municipality Municipal Disaster Management Plan
- Ingquza Hill Municipality Municipal Disaster Management Plan
- Nyandeni Municipality Municipal Disaster Management Plan
- Mhlontlo Municipality Municipal Disaster Management Plan

Municipal Departmental / Entity Disaster Management Plans

DEPARTMENT	DATE SUBMITTED	DATE DUE FOR REVIEW	SUBMITTED BY	SIGNATURE

Risk reduction procedure

- Refer to Section 5

Project evaluation mechanism

- Refer to Section 5.4

Any-hazard response procedure

- Refer to Section 6.7

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REMARKS / COMMENTS / NOTES: