

EXTRACTS FROM TOWARDS DISASTER MANAGEMENT IN ACCORDANCE WITH ACT 57
OF 2002, FOR THE UGU DISTRICT MUNICIPALITY

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1. EXECUTIVE SUMMARY

1.1 Purpose of this document

The Ugu District Municipality Disaster Management Team, jointly with the assistance of its local municipalities and Aurecon developed and updated their District Wide Disaster Management Plan. The development of the plan was completed from the district's perspective. However in some instances during the detailed risk and vulnerability assessment as well as the risk reduction and preparedness planning phase, planning was done on a more detailed level. The Umdoni local municipality can benefit from this planning. This report provides extracts from the Ugu Disaster Management Plan which could be relevant to the Umdoni Municipality. This will assist the Umdoni Municipality with their planning and provide guidelines for further planning at the municipal level to ensure that their plans are aligned with the district disaster management plan. It is important to note that this is not a complete disaster management plan as required by the Disaster Management Act, but merely an extract from the Ugu disaster management plan. There is also a consultative process which should be coupled with the development of a disaster management plan. However, should the Umdoni municipality wish to update their disaster management plan, this will provide a very good basis for their further planning.

1.2 How to use this document

The preparation of a disaster management plan is an extensive process and is a joint effort between the municipality, local communities and the project team. Through Aurecon's appointment we have compiled a plan consisting of the academic analysis which has resulted in both the qualitative and quantitative outputs as described in this plan. The outcomes of this process result in the Ugu District Municipality complying with the Disaster Management Act, Act 57 of 2002.

For ease of use we have structured this document into sections with relevance to the specific departments and individuals who are required to use this plan. The plan requires revision at least twice per year and on an ongoing basis. Through this process, new projects should be identified and existing projects reviewed.

This sector plan should be considered by the municipality in conjunction with all other sectoral plans when developing and reviewing their Integrated Development Plan.

The document can be used as follows:

The Disaster Management Plan

We recommend that the *disaster manager* familiarise him/herself fully with the content of this document.

Disaster Management Enabling Projects

We recommend that the *IDP manager* familiarise himself with these projects for submission to the IDP forum for acceptance and approval. The *disaster manager* should ensure that these projects are implemented.

Disaster Risk Reduction Projects

We recommend that the *IDP manager* familiarise himself with these projects for submission to the IDP forum for acceptance and approval. The *disaster manager* should ensure that these projects are implemented.

Disaster Management Preparedness Plans

We recommend that the *disaster manager and relevant members of his team* (i.e. Disaster Management roleplayers) familiarise themselves fully with the content of this section of the plan.

Project List

We recommend that the *IDP manager* familiarise himself with these projects for submission to the IDP forum for acceptance and approval. The *disaster manager* should ensure that these projects are prioritised and implemented.

Project Details

We recommend that the disaster manager or designated service provider or person familiarise themselves with this section of the plan as this will form the basis for the drafting of project specific business plans.

1.3 Outline of the document

The National disaster management framework categorises disaster management into 2 different aspects i.e. Key Performance Area (KPA) or an Enabler, described below:

KPA 1 ~ Integrated institutional capacity

KPA 2 ~ Risk assessment

KPA 3 ~ Disaster risk reduction

KPA 4 ~ Disaster preparedness

Enabler 1 ~ Information and communication management

Enabler 2 ~ Education, training, public awareness and research

Enabler 3 ~ Funding arrangements

The above mentioned components should form the basis of municipal disaster management strategy. For ease of understanding the document has been structured accordingly. The main document will provide a brief overview of each of the components while the detail will be included as annexures. Disaster management is multi-sectoral and multidisciplinary, which require the involvement of multi agency. This document is structured in such a way to allow for dissemination of information. The disaster management plan is the document which provides the details of what should be done while the disaster management framework provides the guidance and legislative framework to who should be executing the plan. The disaster management plan has to be included in the IDP as a sector plan to ensure that the disaster management strategies form part of the municipal strategy and that funding can be made available to effectively implement the disaster management plan. The following diagram provides a summary of the outline and relations of the various sections.

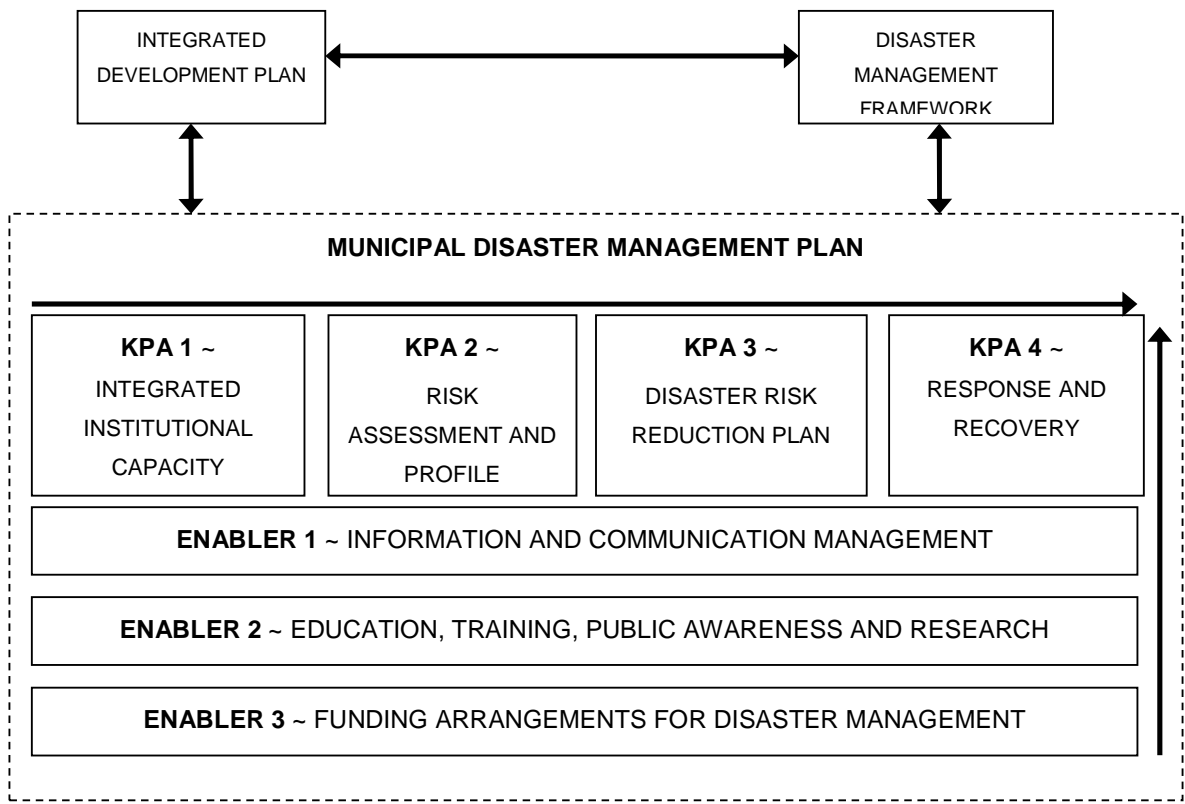


Figure 1: Outline of the disaster management plan

2. INTRODUCTION

2.1 *Setting the Scene*

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 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 White Paper led to the promulgation of the Disaster Management Act, Act 57 of 2002, which is the regulatory framework for disaster management in South Africa. The Department of Provincial and Local Government (DPLG), through the National Disaster Management Centre (NDMC), administers the Act.

☞ **National Disaster Management Framework:** The NDMC is currently in the process of preparing a National Disaster Management Framework, which will aim to guide the development and implementation of disaster management in the country.

☞ **National Disaster Management Centre Guidelines:** The NDMC has developed guidelines for the establishment of disaster management centres (DMC's).

☞ **National Disaster Management Planning Guidelines:** The NDMC has requested proposals to prepare "*Guidelines for Preparing Disaster Management Plans*" that will assist Municipalities in the drafting of their *disaster management plans*.

2.2 *The Disaster Management Act*

The Disaster Management Act, Act 57 of 2002, requires that, inter alia, the three spheres of government prepare **Disaster Management Plans** (Sections 39 and 53 of the Act).

Section 39 of the Disaster Management Act address 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 Disaster Management Act address 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;

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

(c) place emphasis on 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 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 come up with 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.

☞ **Disaster Impact Assessment and Recovery Planning (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.

The State President, President Thabo Mbeki, has recently enacted the Disaster Management Act, Act 57 of 2002. The enactment of the Disaster Management Act states the following:

☞ **National and Provincial Government Departments:** All National and Provincial Government Departments MUST comply with the Act as from **April 2004**.

☞ **District and Local Municipalities:** All District and Local Municipalities MUST comply with the Act as from **June 2004**.

☞ **Implementation Time Frame:** All National and Provincial Government Departments, as well as, District and Local Municipalities have been given a two-year period for implementing all the requirements of the Act. After this time period, all National and Provincial Government Departments, as well as, District and Local Municipalities must fully comply with the Act.

2.3 The Ugu District Municipality

2.3.1 Physical environment

Ugu District Municipality is situated on the east coast of the Republic of South Africa, in the Province of KwaZulu-Natal.

Ugu District Municipality is bordered by the Unicity of Durban in the immediate north. This means that the district Municipality has good access to a major harbour (Durban) as well as good access to the existing Durban International Airport and some smaller airfield.

Ugu District Municipality shares a border with uMgungundlovu District Municipality (DC 22) on the north-western side, the Sisonke District Municipality (DC 43) on the western side and the eThekweni Metropolitan Municipality on the northern side. The District Municipality shares national provincial borders with the Eastern Cape Province on the southern side specifically the O.R.Thambo District Municipality and on the south-western side (Umzimkhulu area) which has recently been incorporated into Sisonke District Municipality. Thus, in the case of a cross-border incident where Eastern Cape Province is involved and although a cross-border Incident Management Committee (IMC) would be established to manage the incident on the ground, the Provincial Disaster Management Centre must be informed for the purpose of inter provincial liaison. See Figure 1 for a locality map of the District Municipality's relative position.

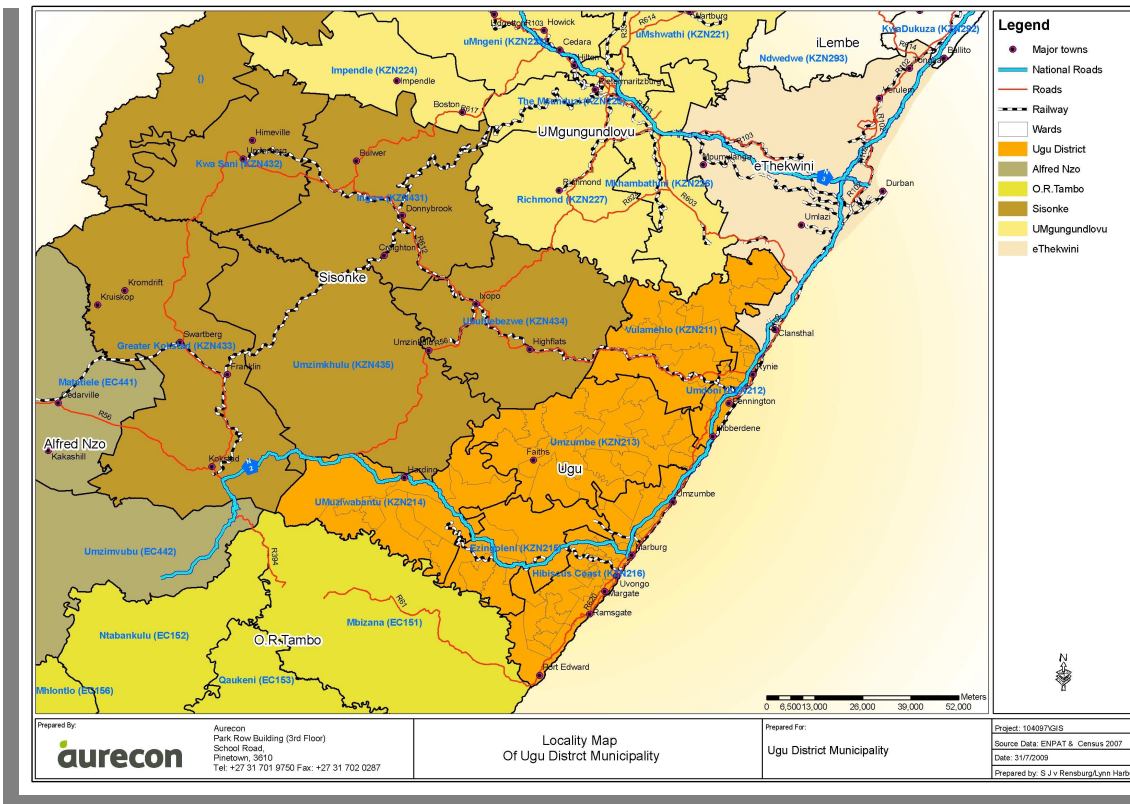


Figure 2: Locality map of Ugu District Municipality

The service area of Ugu District Municipality covers a geographical area of 5 866 square kilometres with eighty-one municipal wards, a coastline of some 112 kilometres and a total of 39 traditional authorities.

The area of jurisdiction of the Ugu District Municipality (DC21) is divided into six local municipal areas defined in terms of the Constitution of the Republic of South Africa, 1996 (Act 108 of 1996) as a category B municipality. These are:

- Vulamehlo Municipality (KZ 211)
- Umdoni Municipality (KZ 212)
- Umzumbe Municipality (KZ 213)
- uMuziwabantu Municipality (KZ 214)
- Ezingoleni Municipality (KZ 215)
- Hibiscus Coast Municipality (KZ 216)

2.3.2 Demography

The following table provides a high level summary of the demographic representation in the Ugu District Municipality.

Table 1: Demographic data of Ugu District

	Vulamehlo	Umdoni	Umzumbe	Umuziwabantu	Ezingqoleni	Hibiscus Coast	Ugu
Area	973	238	1'259	1'088	649	837	5'044
Population	74'017	74'437	196'202	104'527	56'369	222'281	709' 918
Households	12'745	16'383	40'579	20'313	10'950	50'650	151'620
Male (%)	45.4	49.1	44.8	44.8	44.6	46.5	45.8
Female (%)	54.6	50.9	55.2	55.2	55.4	54.5	54.2
Electricity Backlog (HH)	11'282	4'255	21'765	12'571	4'019	10'452	64'344
Sanitation Backlog (HH)	2919	4976	30112	5081	3440	12445	58 973

1.2.1 Municipal Structures Act, Act No 117 of 1998

The Municipal Structures Act of 1998 (as amended) makes provision for the division of powers and functions between the district and local municipalities. It assigns the district wide functions to the district municipalities and most day to day service delivery functions to the local municipalities. The provincial MECs are empowered to adjust these powers and functions according to the capacity of the municipalities to deliver services.

With regard to the above statement for instance, the function of Water and Sanitation as well as the maintenance of water infrastructure is still the function of the district. Whilst the Local Municipality is responsible for Planning, it is also reliant on the District for advice and support. Amongst other things the powers and functions of the municipalities are as detailed in the table below:

Table 2: Powers and Functions (IDP 2009)

Local Functions	District functions	Shared Functions
<ul style="list-style-type: none"> • Building Regulations • Child Care Facilities • Pontoons, Ferries, Jetties, Piers and Harbours • Storm Water Management Systems in Built up Areas • Trading Regulations • Billboards and the Display of Advertisements in Public Places • Cleansing • Control of Public Nuisances • Street Lighting • Traffic and Parking • Control of Undertakings that Sell Liquor to the Public • Facilities for the Accommodation, Care and Burial of Animals • Fences and Fencing • Licensing of Dogs • Licensing and Control of Undertakings that sell food to the public • Local Amenities • Local Sport Facilities • Municipal Parks and Recreation • Noise Pollution • Pounds • Public Places • Street Trading 	<ul style="list-style-type: none"> • Municipal Health Services • Potable Water • Sanitation • Air Quality Management 	<ul style="list-style-type: none"> • Fire Fighting Services • Local Tourism • Municipal Airports • Municipal Public Transport Cemeteries, Funeral Parlours and Crematoria • Markets • Municipal Abattoirs • Municipal Roads • Refuse Removal, Refuse Dumps and Solid Waste • Development Planning

The powers and functions play a vital role in determining the primary and secondary role players involved throughout the various lifecycle phases of an incident and the responsibilities in terms of implementing disaster management strategic initiatives. Various projects and initiatives are identified through the disaster management planning process and should be incorporated into all spheres of government and municipal sector plans. The project and measures identified through this planning process should be incorporated into the relevant sectoral strategy plans in the different spheres of government where the responsibilities lie.

2.4 Acknowledgements

The approach adopted for this report came from the following sources and the Project Team would like to acknowledge their valuable contribution, namely:

- The Ugu District Municipality and all local municipalities for forming part of the project team.
- The “*Integrated Development Planning (IDP) Guidelines*”² from the National Department of Provincial and Local Government.
- The “*Water Services Development Plan (WSDP) Guidelines ~ General Overview*”³, July 2001, from the Department of Water Affairs and Forestry.
- Guidelines from the Federal Emergency Management Agency (FEMA) of the U.S. Department of Homeland Security titled, “*Understanding Your Risks ~ Identifying Hazards and Estimating Losses*”⁴, August 2001, FEMA 386-2.
- Guidelines from FEMA of the U.S. Department of Homeland Security titled, “*Developing the Mitigation Plan ~ Identifying Mitigation Actions and Implementation Strategies*”, April 2003, FEMA 386-3.
- Guidelines from the U.S. National Oceanic and Atmospheric Administration (NOAA) Coastal Services Centre on “*Community Vulnerability Assessment*”⁵.
- Guidelines from the United Nations Disaster Management Training Programme (UNDMTP) on “*Vulnerability and Risk Assessment*”⁶.
- Guidelines from the UNDMTP on “*Disaster Mitigation*”⁷.

2 http://www.dplg.gov.za/documents/Publications_b.htm

3 http://www.dwaf.gov.za/dir_ws/wsdp/

4 <http://www.fema.gov/library/prepandprev.shtm>

5 <http://www.csc.noaa.gov/products/nchaz/startup.htm>

6 http://www.undmtp.org/english/vulnerability_riskassessment/vulnerability.pdf

7 http://www.undmtp.org/english/Disaster_mitigation/disaster_mitigation.pdf

3. BACKGROUND ON THE DISASTER MANAGEMENT ACT, ACT 57 OF 2002

In this section of the document a general background as well as the key outcomes of the act is highlighted. These key outcomes and guidelines described will form the baseline for the deliverables of this project in assisting the Ugu District Municipality to comply with the Disaster Management Act, Act 57 of 2002.

3.1 Key Outcome Points of the Act

The National Government has promulgated the Disaster Management Act, Act 57 of 2002, to provide an integrated and co-ordinated disaster management regulatory framework in which various role players can work towards a common purpose. This common purpose (Figure 3) can best be described as, among others:

☞ **Key Outcome Point 1 ~ Risk Reduction:** The first *key outcome point* of the Act is that Municipalities and Provinces should seek to mitigate or reduce the risk of disasters occurring in vulnerable communities as a first prize. To achieve this *outcome*, Municipalities and Provinces will be expected to propose, implement and monitor cost-effective and innovative projects and programmes that will mitigate or reduce the risk of disasters occurring in vulnerable communities.

☞ **Key Outcome Point 2 ~ Disaster Preparedness:** Another *key outcome point* of the Act is that Municipalities and Provinces should be prepared for disasters that could occur. To achieve this *outcome*, Municipalities and Provinces will be expected to plan, practise and improve their preparedness, response and relief activities for disasters that could occur.

☞ **Key Outcome Point 3 ~ Disaster Recovery:** The third *key outcome point* of the Act is that Municipalities and Provinces should be able to address the consequences of a disaster. To achieve this *outcome*, Municipalities and Provinces will be expected to propose, implement and monitor cost-effective and innovative disaster recovery measures, which will also reduce the risk of the same disaster impacting on the same community again.



Figure 3: Key Outcome Points of Disaster Management Act

3.2 Outcome Based Delivery Processes

A typical outcome based delivery process is that of preparing disaster management plans, as illustrated in Figure 4, namely:

- ☞ **Disaster Management Planning Guidelines & Templates:** The District Municipality prepares and releases a document “*Guidelines for Preparing Disaster Management Plans*” that will assist their Local Municipalities in the drafting of their Plans.
- ☞ **Capacity Building:** District Officials train Municipal Officials in how the *Guidelines* can be used in the drafting of Disaster Management Plans.
- ☞ **Local Disaster Management Plans:** Local Municipalities commence with the drafting of their Plans. Once the Plans have been drafted, the Councils must approve the Plans, which are submitted to the District Municipality.
- ☞ **District Disaster Management Plans:** The District Municipality then compiles the individual Local Plans into District Plans. When the District Plans are completed, the District Municipality arrange for the approval of their Plans, which are submitted to the Province.
- ☞ **Provincial Disaster Management Plans:** The Province can compile the individual District Plans into a Provincial Plan, which should be submitted to the Department of Provincial and Local Government.

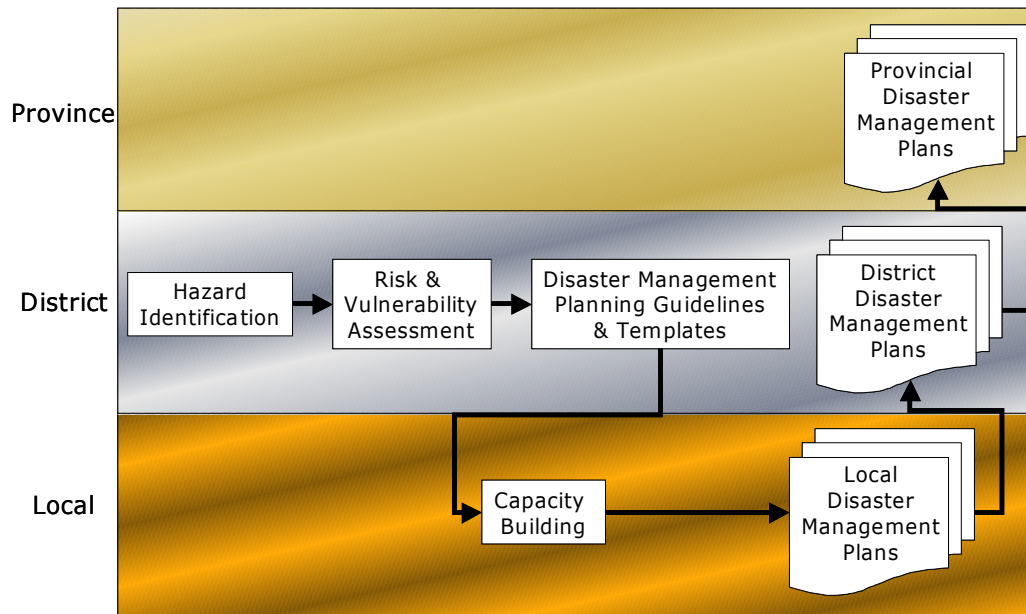


Figure 4: Interaction between the spheres of government in the Disaster Management planning process.

Each of the activities listed in Figure 4 can be unpacked into more detail, such as, the preparation of Local Disaster Management Plans by Local Municipalities (Figure 5):

☞ **Information Collection:** The first step is typically the collection of relevant information, such as, suitable spatial data for the Geographic Information System (GIS) analysis to be conducted later on; the long-range seasonal forecasts from the Weather Services, as it will provide valuable information on what major incidents and disasters are likely to occur in that particular planning cycle; and the like.

☞ **Hazard Identification:** The Municipalities should follow this with a process during which they identify the hazards in their region. To assist them with the hazard identification, it is foreseen that a hazard identification checklist will be needed, as well as interviews and consultation with specialists.

☞ **Risk and Vulnerability Assessment:** The next step should be that Municipalities conduct a risk and vulnerability assessment. During this part of the annual Integrated Development Planning (IDP) cycle, Municipalities will be expected to:

- ◆ **Assess the Risks:** The probability of harmful consequences, or expected losses resulting from the hazards that were identified.

- ◆ **Assess the Vulnerabilities of Communities:** Vulnerability refers to a set of condition resulting from physical, social, economical and environmental factors, which increase the susceptibility of a community to the impact of a hazard.

☞ **Risk Prioritisation:** The risk and vulnerability assessment normally produces such a lot of hazards that must be addressed that the sheer volume of work overwhelms Municipalities. Consequently it is imperative that Municipalities be given a tool that they can use that will help them by prioritisation the hazards that they should address.

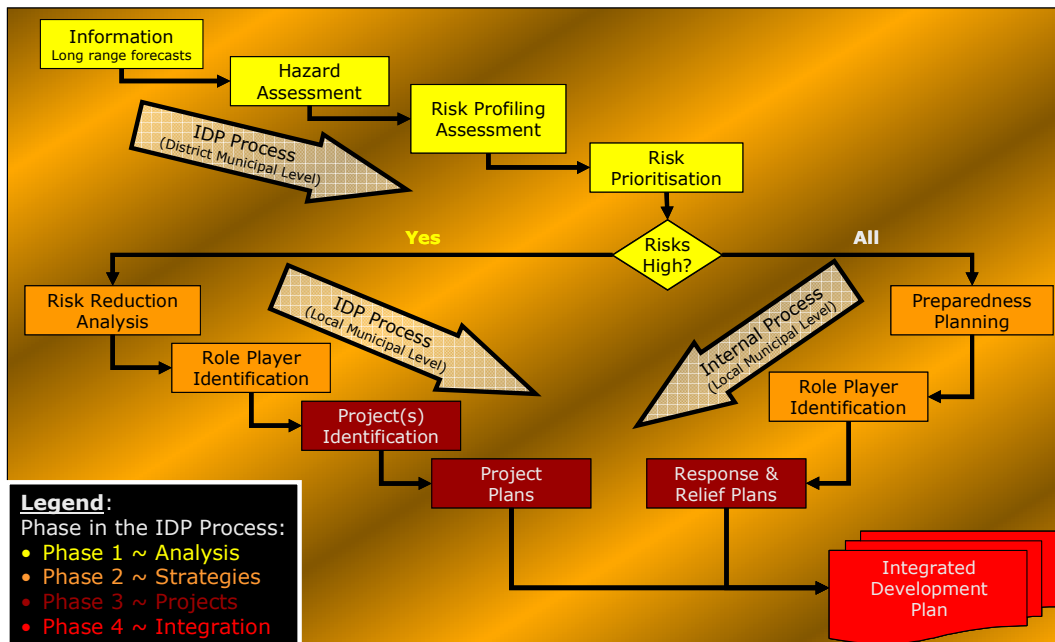


Figure 5: An Outcome Based Delivery Process, Depicting the Various Steps in Preparing a District Disaster Management Plan

☞ **Disaster Management Planning:** Municipalities can only then commence with their disaster management planning, namely:

- ◆ **Risk Reduction Plans (Preventative Measures):** The focus of their Risk Reduction Plans will be to reduce the risks of vulnerable communities to acceptable levels. In preparing their Risk Reduction Plans, Municipalities will have to apply their minds and come up with cost-effective and innovative risk reduction solutions. It is foreseen that the majority of the Risk Reduction Plans will be linked to the ***Integrated Development Plan*** (IDP) as projects and programmes.
- ◆ **Disaster Preparedness Plans (Preparedness, Response & Relief):** The focus of the Disaster Preparedness Plans would be to plan preparedness, response and relief activities, should a disaster hit a community that is not particularly vulnerable to risks and/or find it acceptable to live with such risks.
- ◆ **Disaster Recovery Measures (Rehabilitation & Reconstruction):** Should a disaster hit a community, the impact of the disaster should be assessed; appropriate reconstruction and rehabilitation measures should be identified and performed; and the effectiveness of the reconstruction and rehabilitation measures should be monitored. An important consideration during this phase would be to ensure that the risk of the same disaster impacting on the same community again is reduced.

4. PROJECT METHODOLOGY

This section of the document describes the approach that is proposed by the Project Team to assist the Ugu District Municipality to comply with the Disaster Management Act. This will include a hazard, risk and vulnerability assessment, preparation of disaster risk and disaster preparedness plans for the Ugu District Municipality. The Project Team has deliberately taken a step back, to holistically look at all of the issues that relates to ultimately preparing disaster management plans.

4.1 SWOT Analysis

A SWOT analysis will be performed as the first step of the project. This will identify the status quo of the Municipality and indicate the gaps that need to be eliminated to comply with the Disaster Management Act.

Strengths: attributes of the Municipality that is helpful to achieving compliance with the Disaster Management Act and the municipal responsibility in terms of the disaster management principles. *Weaknesses:* attributes of the Municipality that is harmful to achieving compliance with the Disaster Management Act and the municipal responsibility in terms of the disaster management principles.

Opportunities: external conditions related to the Municipality that are helpful to successful completion of the project and complying with the Act and the municipal responsibility in terms of the disaster management principles. *Threats:* external conditions related to the Municipality that are helpful to successful completion of the project and complying with the Act and the municipal responsibility in terms of the disaster management principles.

As output of the SWOT analysis recommendation regarding the following issues will be made:

- How to build on the strengths
- How to reduce the weaknesses
- How to take advantage of the opportunities
- How to mitigate the threats

4.2 Disaster Management Planning

4.2.1 Towards Disaster Management Plans in the Ugu District Municipality

The analysis phase includes a **hazard identification analysis**, a **risk profiling assessment** and a **risk prioritisation** for the Ugu District Municipality, involving the following action steps:

☞ **Step 1 ~ Information collection:** Information regarding hazards must be collected. **Seasonal climate forecasts** from the South African Weather Services (SAWS) web site⁸ and the Global Forecasting Centre for Southern Africa (GFCSA) web site⁹ are, amongst others invaluable tools for disaster risk planning.

☞ **Step 2 ~ Hazard Assessment:** Once the basic data for an area, such as the forecast, has been collected, the **potential hazards** for the area must be assessed. The various hazards are generally grouped into a range of categories, called a **Hazard Classification**.

☞ **Step 3 ~ Risk Profiling Assessment:** The **Risk Profiling Assessment** will take this a step further, to identify which communities or societies are vulnerable to what hazards (or risks). The **Risk Profiling Assessment** will normally address the following aspects:

◆ **Primary Impact Mapping:** The focus of the first step in the **Risk Profiling Assessment** is to map the primary impact areas for each of the potential hazards identified in the **Hazard Assessment**.

◆ **Societal Vulnerability Analysis:** The focus of this step is to identify those neighbourhoods where individual resources are minimal. The limited availability of resources in a community suggests that the community might be vulnerable, or susceptible, to the hazard event.

◆ **Environmental Vulnerability Analysis:** The purpose of this analysis is to identify locations where there is potential for secondary environmental impacts from natural hazards and to target vulnerable locations for risk reduction activities.

◆ **Economic Vulnerability Analysis:** The purpose of this analysis is to identify the economic vulnerabilities to hazard impacts.

◆ **Critical Facilities Vulnerability Analysis:** This analysis focuses on determining the vulnerability of key individual facilities or resources within your area.

☞ **Step 4 ~ Risk Prioritisation:** The Risk Profiling Assessment normally produces so many risks that must be addressed that the sheer volume of work tends to be overwhelming. Consequently, it is recommended that you **prioritise the risks** to be addressed.

☞ **Step 5 ~ Addressing the priority risks:**

Risk Reduction Plans (Preventative Measures): The focus of their Risk Reduction Plans will be to reduce the risks of vulnerable communities to acceptable levels. In preparing their Risk Reduction Plans, Municipalities will have to apply their minds and come up with cost-effective and innovative risk reduction solutions. It is foreseen that the majority of the Risk Reduction Plans will be linked to the **Integrated Development Plan (IDP)** as projects and programmes.

Disaster Preparedness Plans (Preparedness, Response & Relief): The focus of the Disaster Preparedness Plans would be to plan preparedness, response and relief activities, should a disaster hit a community that is not particularly vulnerable to risks and/or find it acceptable to live with such risks.

Disaster Recovery Measures (Rehabilitation & Reconstruction): Should a disaster hit a community, the impact of the disaster should be assessed; appropriate reconstruction and rehabilitation measures should be identified and performed; and the effectiveness of the reconstruction and rehabilitation measures should be monitored. An important

⁸ <http://www.weathersa.co.za/>

⁹ <http://www.gfcsa.net>

consideration during this phase would be to ensure that the risk of the same disaster impacting on the same community again is reduced.

☞ **Step 6 ~ Upload to Spatial Development Framework:** Once the mapping of the risk profiles for communities in the Province have been completed, it is necessary to upload the risk profiles to the Spatial Development Framework (SDF) for the Province.

5. SWOT ANALYSIS OF DISASTER MANAGEMENT IN UGU DISTRICT

5.1 Background

To start the process of preparing the District wide disaster management plan, and comply with the Disaster Management Act, thorough research has to be done to identify and gather possible documentation, policies, plans and other information which could contain some information that can assist with the Disaster Management planning. The next step is to do a thorough analysis of the availability and completeness of the data and reports. This will ensure that an accurate status quo of the municipality regarding Disaster Management and their compliance level becomes apparent; as well as identify some of the current and potential gaps. From this analysis the way forward is determined to achieve full compliance with the Act.

5.2 Strengths

The Ugu District Municipality embarked on an initial effort to develop a phase I and phase II disaster management sectoral plan, which was submitted on the following dates:

- Phase I on 20 August 2004
- Phase II on 26 April 2006

Disaster Management is an iterative process and for this reason the disaster management plan should constantly be updated and improved upon. The plan should be updated and improved as and when new information becomes available, project are implemented, new events are planned and the environment changes.

The previous phases of the disaster management planning covered some of the key components prescribed by the National Disaster Management Framework (NDMF) and provided a base to start the development of this phase of the planning process. The components documented up to the start of this phase include:

- An overview of the District Municipality profile. Identification and discussion on previous major incidents and disaster occurrences in the Ugu district; which included fire, flooding, epidemics and drought.

- Development of a risk profile (show in the table below)
- High level view of the protocol pertaining to disaster management role players in the Ugu District Municipality and a generic flow of information and communication in the case of an incident
- An overview of the District and Local responsibilities in the event of a local disaster. A way forward based on contingency and business continuity planning; as explained in the section below.

Table 3 : Risk profile of Ugu District Municipality (2006)

Hazard	Types	Priority in terms of occurrence	Priority in terms of damage
Fires (seasonal)	Forest	1	1
Floods (seasonal)	Flash	1	1
Environmental	Drought	2	1

Some specific action plans emanated from the contingency planning process, the municipal business continuity planning process and the business plans (Centre and IMS) developed. A number of recommendations which emanated from the Disaster Management planning process were incorporated into the IDP i.e.:

- Fires
- Flooding
- Drought
- Epidemics
- Business continuity
- District Disaster Management Centre
- General

The report highlighted the initial steps required to develop and implement an information and communication system which included the identification of potential role players which should form part of this model.

Intervention and action plans were identified to initiate the establishment of an effective disaster management team; which required the further development of the disaster management plan and the approval and adoption of the strategic way forward.

These elements should all form part of a disaster management plan and was used as the base for further improvement and development of the Ugu District disaster management plan.

A fully functional District Disaster Management Advisory Forum (DMAF) and Practitioners Forum are well established in the Ugu Municipality. All major role players are represented in this forum and attend regular meetings where inputs are provided from all line function departments.

A Disaster Management Centre facility is available and is in use by the municipality. This facility can easily be upgraded and equipped to be utilized as a fully operational Disaster Management Centre which integrates multiple role players and agencies as well as an information management and communication system.

Some of the local municipalities in the Ugu district have disaster management plans in place which incorporate the various aspects of disaster management to varying levels. The hazards identified by the local plans created a starting point for discussion at the first workshop to identify and prioritize the hazards present in the Ugu district.

5.3 Weaknesses

A Disaster Management plan is a strategic plan which should be developed and continuously updated in consultation with all role players. Although a first and second phase disaster management plan was developed in previous years, the strategies identified in the plan should be implemented and therefore require the updating and improvement of the plan on a regular basis. There is a lack of evidence that the plan was successfully implemented and now further updates of such a plan are available. In our ever changing environment it is vital that any strategic and operational plans be reviewed and updated regularly to ensure that they are still relevant and aligned with the vision and mission of the municipality. The following items are mentioned on a high level in the previous plan and no real effort and progress has been made in the achievement of them, therefore they are now unpacked into tangible and implementable projects to assist the Ugu district municipality in establishing an effective and efficient disaster management sector plan:

- Reviewed hazard Identification

- A detailed and comprehensive risk Assessment
- Spatial Analysis of the risks and vulnerabilities
- Risk Reduction Project Implementation
- Preparedness and proactive initiatives
- Information management
- Communication system
- Funding
- Operational and fully equipped Disaster Management Centre

There appears to be a lack of capacity for disaster management at a local municipal level which provides constraints to the district for the implementation of disaster management. The disaster management plans drafted by the local municipalities are also not being implemented to a great extent and should with the assistance of the district disaster management and advisory forum integrate their actions with one another and jointly implement the strategies identified in their plans.

There is currently no District Disaster Management Framework (DDMF) in place in the Ugu district. This should outline the vision, mission and objectives adopted of the Ugu District Municipality. A Disaster Risk Management Framework (DRMF) should be developed for the Ugu District Municipality where the strategic policy can be outlined on how disaster management should be implemented. This policy document should highlight the KPIs which the Ugu district aims to achieve in terms of disaster management in the future. For the purposes of the development of the disaster management plan in the absence of a district framework, the National Disaster Management Framework was used.

5.4 Opportunities

Aurecon has extensive experience in the field of disaster management and is committed to assist the Municipality to comply with the Disaster Management Act, Act 57 of 2002. The process to develop the necessary documentation, policies and plans is described throughout this document and the details on the outcomes are presented in the annexures of this document.

A Disaster Management Centre facility is available and is currently in use by the municipality. This facility can easily be upgraded and equipped to be utilized as a fully functional Disaster Management Centre.

Subsequent to the completion of the development of the disaster management plan can the municipal evaluation tool will be utilised to determine the status of disaster management within the municipality. The plan also details actions which should be taken to further improve the level of disaster management implementation achieved in the municipality.

All role players will have an opportunity to provide input and assist with the development of strategies of reduce the level of risk in the municipality. These strategies and assessments need to be included in the IDP and form part of the municipal strategies to assist with the sourcing of funding for the implementation of risk reduction projects.

5.5 Threats

It is critical that the disaster management plan be approved and endorsed as soon as possible to ensure that the district put the mechanisms in place before the next major incident or disaster. It is very important that contact be made with all role player and stakeholders in the area to ensure that they are all aware of the hazards in the area and the plans which are developed to assists with risk reduction, mitigation and preparedness.

A potential threat however does exist if all local municipalities do not develop, update and implement their own disaster management plans as the district plan should contain a consolidation of all the local plans. The same will apply when the various sector departments do not have their own disaster management plans in place which will create gaps in the capacity and readiness of the municipality and will leave the community vulnerable.

It should be noted that the success of the plan is not in the development of such but rather in the implementation of the initiatives derived through this process and in keeping the plan up to date. The project team will therefore develop the plan with project and initiatives which are tangible, implementable and will add value to the disaster management sector and the Ugu District Municipality

5.6 Conclusion and Recommendation

Based on insufficient and inconclusive information contained in the existing District plans, it recommended that the standard, national and provincially compliant process for establishing a Disaster Management Plan, as has been proposed in the next section be adhered to. In conclusion we recommend that all phases outlined in this document be executed. Some elements will be reviewed and updated while other will be developed from scratch. It is also

strongly suggested that a recommendation be made to the local municipalities and district departments to prepare and update their own disaster sector management based on this plan.

6. PHASES 1- 6: DISASTER MANAGEMENT PLANNING

6.1 Phase 1 ~ Analysis Phase

6.1.1 Hazard Identification

In order to distinguish between different hazard types, numerous institutions have developed a variety of hazard classifications. The hazard classification developed by the ISDR¹⁰ (Table 4: A typical classification of hazard types) summarises current thinking, namely:

Table 4: A typical classification of hazard types

HAZARDS
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.
NATURAL HAZARDS
These are natural processes or phenomena occurring in the biosphere that may constitute a damaging event. Natural Hazards are typically classified into:
☞ <i>Geological Hazards:</i> Natural earth processes or phenomena in the biosphere, which include geological, neo-tectonic, geo-physical, geo-morphological, geo-technical and hydro-geological nature.
☞ <i>Hydro Meteorological Hazards:</i> Natural processes or phenomena of atmospheric, hydrological or oceanographic nature.
☞ <i>Biological Hazards:</i> Processes of organic origin or those conveyed by biological vectors, including exposure to pathogenic micro-organisms, toxins and bioactive substances.
TECHNOLOGICAL HAZARDS
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.

¹⁰ “Living with Risk: A Global Review of Disaster Reduction Initiatives”, International Strategy for **Disaster Reduction** (ISDR) Secretariat, July 2002.

ENVIRONMENTAL DEGRADATION

“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.”

This phase commences with the initial information gathering where local and indigenous knowledge is consulted. This is often the source of very relevant and important information and is provided by the community. Indigenous knowledge also provides for historical incidents and often incidents not well documented in any other form. Not all incident or circumstances surrounding a specific incident is normally recorded. Therefore it is critical that the local community is consulted in the gathering of information as it assists with further research. This information is combined with the scientific assessment to provide the overall picture of potential hazards which exists in that area.

Disaster Management is an interactive and consultative process and has a multidisciplinary and multi agency involvement. This means that all role players have to be identified and be part of the development of the disaster management plan as well as the regular review and updating of the plan. The planning process must also include the different spheres of government.

The Ugu District Municipality currently has a protocol for the recording of incidents and relief provided to affected communities and households. This information is gathered by the disaster management team which physically assess and record the data on a template form. These completed forms eventually form part of the reporting mechanisms where the higher authorities are notified of the incident and relief measures taken. A hard copy of all the correspondence is filed and form part of the incident register where all relevant information regarding incidents, response and relief provided is kept. The incident registers were analysed and all historic information on the type, location, impact and timing of incidents were considered in the identification, prioritisation and analyses of the risk present in the Ugu district. Some of the recent incidents which had a major impact in the Ugu district are the beach disaster which occurred during the month of March 2007 and the flood disaster which occurred in June 2008.

As mentioned earlier, to successfully implement and operate Disaster Management it requires a multidisciplinary and multi agency approach. This means that all relevant role players have form part of the process of the development and updating of the disaster management plan to

ensure that all activities, information and communication is integrated and coordinated. The planning process must also include the different spheres of government and therefore a workshop was held with each local municipality where all role players, stakeholders and traditional authorities were invited to identify and confirm all hazards present in the Ugu district. These workshops were held successfully and comments were received from the various role players. The workshops were held on the dates provided below:

Umdoni Municipality : 4 April 2008

Vulamehlo Municipality : 9 April 2008

Ezinqoleni Municipality : 14 April 2008

Hibiscus Coast Municipality : 15 May 2008

Umuziwabantu Municipality : 21 May 2008

Umzumbe Municipality : 23 April 2008

All stakeholders and role players were invited to the above mentioned workshops and provided input into the planning process to ensure that the information is an accurate and true reflection of the different areas in the Ugu district. All the disaster management role players and stakeholders were also invited to the subsequent workshops, and is listed in the stakeholder annexure.

6.1.2 Risk Prioritisation

Questionnaires were prepared and completed with each of the local municipalities in the Ugu district during a workshop arranged with them where all role players and stakeholders were invited. The risk prioritisation exercise included the finalisation of the hazard identification through consolidating all information relating to the identified risks. This included a community based assessment, analysis of previously incidents, indigenous and local knowledge and various other sources of information. Through a hazard identification questionnaire additional information was acquired. The questionnaires included the analyses of the impact/severity as well as the probability of occurrence of the specific incident types. The questionnaire also included quantifying the manageability and capacity to cope with these incidents. These individual factors were then computed to determine the priority risks for each local municipality and the Ugu district as a whole. For the purpose of this phase of disaster management planning the top 10 priority risks are addressed for each local municipality, however it should be noted that these are not the only risks present in the Ugu district and further investigation and planning need to be done during the next phases to develop comprehensive risk reduction and preparedness contingency plans for all risks in the Ugu district. Based on the ranking of the priority risks appropriate risk reduction strategies will be developed to reduce the risks to a tolerable level.

The manageability (capacity to cope) was determined by taking into consideration the following aspects:

- Awareness
- Legislative framework
- Early warning
- Government response
- Municipal government response
- Existing risk reduction measures
- Public participation
- Municipal management capabilities

The finalisation of the risk prioritisation for each risk considered the following factors:

- The probability that such an incident will occur
- The impact on the community should such and incidents occur

We require acceptance and approval of the top 10 risks for each municipality to be able to proceed with the preparation of the risk reduction and preparedness plans. No comments on the priority risk were received from the local municipalities within the given time lines. It was discussed at the previous project meeting held on 10 October 2008 that the risk prioritisation summary reports provided to each municipality should be followed by a presentation by Aurecon to provide an opportunity for each municipality to comment and amend as required. These presentations were held successfully and comments were received from the various role players. The presentations were held on the dates provided below:

Umdoni Municipality : 5 November 2008

Vulamehlo Municipality : 29 October 2008

Ezinqoleni Municipality : 16 October 2008

Hibiscus Coast Municipality : 15 October 2008

Umuziwabantu Municipality : 17 November 2008

Umzumbe Municipality : Finalised during beginning 2008 as part of the Development of the Umzumbe DMP.

Comments relating to the risk prioritisation were received from the role players at these meetings and incorporated to ensure the acceptance and approval of the risk prioritisation. The risk prioritisation approved by each local municipality and utilised for the further phases of the planning process is detailed in Table 7 : Priority risks per Local Municipality.

The risks provided above are the priority risks which will be addressed in the future phases of the project (risk reduction and preparedness planning). For the purposes of this project they are all seen as priority risks and will be addressed with the same importance. They are therefore not provided in any particular order.

6.1.3 Spatial Analysis

The GIS allows for spatial modelling and analysis which determines the priority hazards and their primary areas of impact. Another factor which contributes to the level of risk is the vulnerabilities and exposure of the communities to that hazard. Census information forms the base for determining the vulnerability of these communities. The vulnerability of the areas and communities are evaluated and compared against one another to identify the most vulnerable communities in the municipality. These two elements represent the level of risk for the specific hazard. This profiling must be uploaded into the Ugu district municipality Spatial Development Framework (SDF) and will inform the development of other sectoral plans.

6.2 Phase 2 ~ Disaster Risk Reduction Planning

In this phase, the district will have to arrive at crucial decisions on the most appropriate ways to address the intolerably high risks and the high risks, as well as, to ensure that concrete and sufficiently specified disaster risk reduction project proposals are designed, which can be used for implementation.

This objective of holding workshop is to include all relevant role players during the process of preparing the Risk reduction and Risk Preparedness plans. The purpose was also to familiarise the stakeholders with the disaster management planning process. This workshop involved all role players and stakeholder identified in the municipality, district and province which could contribute or assist with disaster management in the area. These role players should all be included in the process of identifying the hazards and risks within the municipality for them to better understand where and how they can contribute to disaster management.

Through the capacity building exercise, it is important to ensure that the following aspects of Disaster Management are fully understood:

- Definitions and terminology
- The Disaster Management Act
- Hazards vs. Disasters
- Vulnerability
- Putting Disaster Management in place
- Re-active vs. Pro-active behaviour

The first risk reduction and preparedness planning workshop was held on 11 December 2008 where inputs pertaining to the causes, impacts and vulnerability factors were received from all stakeholders to assist with the development of projects to reduce the risks in each municipality. This information was taken forward to the local municipalities where they were given the opportunity to provide information that is specifically relevant to their area, communities and environment. This information assisted with the analysis of each risk and was utilised to develop risk reduction initiatives and project based on the following fundamental strategies:

- Prevention
- Mitigation
- Preparedness
- Reducing vulnerability

The output is comprehensive list of projects for inclusion in the IDP and is included as an annexure. The detailed analysis, risk assessment and project information is detailed in the hazard specific annexures.

6.3 Phase 3 ~ Disaster Preparedness Planning

In this phase, the district will have to arrive at crucial decisions on the most appropriate ways to address the tolerable risks, as well as, to ensure that concrete and sufficiently specified disaster preparedness project proposals are designed, which can be used for implementation.

This workshop is to get inputs from all relevant role players during the process of preparing the Risk reduction and Risk Preparedness plans. It is important to understand where there is capacity and resources in the municipality that can be used in case of these hazardous events. Details regarding all available resources and the processes governing the actions of all role players during an incident are required to assist in preparing a comprehensive preparedness plan for the municipality. Projects also have to be identified to assist in the mitigation process.

The preparedness planning workshop was held on 11 December 2008 where inputs were received from all role players involved during the various phases of the incident life cycle. The discussions were guided to extract as much information possible which pertained to the role and activities of each agency and the protocols and procedure governing the information management and communication systems. This information was assessed to determine the current strengths and potential gaps in the role players involved and the availability of

information. This information assisted in formulating an improved strategy and protocol which will ensure effective response and relief during an incident.

Over the past years the Ugu district experiences many incidents where some of them were classified and major incidents and disasters. These were the instances in which the disaster management capabilities and strengths were tested. The conclusion and recommendation reports were analysed to establish who the lead agencies are what the procedures are that were followed in the past. This provided valuable insight and assisted with the development of a formal procedure and action list during an incident.

6.4 Phase 5 ~ IDP Approval Phase

The aim is to ensure that the outputs of the disaster risk reduction plan, risk preparedness plan and the disaster management enabler initiatives have to be included in the IDP. The objectives and goals identified in the risk reduction and preparedness plans should be prioritised and the most important initiatives be integrated into the IDP to secure funding. The projects have to be assigned to specific task teams. This will then set the stage for the municipality to start implementing the identified projects.

The project is currently in the IDP integration phase after which it has to go through the formal process of the IDP approval.

The project team ensure that all role players were kept up to date of the development and outcomes of each phase of the project. Various presentations were conducted to the practitioners, disaster management advisory forum and Ugu district top management forums. This will ensure that the approval, adoption and implementation of the disaster management plan and project identified through the process includes the input from all role players and that it is aligned with the vision, mission and objectives of the district municipality. A summary of the presentations conducted at these forums are provided in the table below:

Table 5 : Key role player involvement and participation

Forum	Date	Phase	Objective of meeting
Practitioners	14 March 2008	Initiation	Project Charter
	27 May 2008	Implementation	Status Quo and Planning for next phase
	21 August 2008	Implementation	Risk Profile
	18 September 2008	Implementation	Risk Prioritisation
Management	15 June 2009	Closing	Alignment and buy-in of strategies
	20 July 2009	Design	Information System
Portfolio	2 June 2009	Implementation	Risk reduction and preparedness planning Status Quo
Advisory	29 May 2008	Implementation	Status Quo and Planning for next phase
	28 October 2008	Implementation	Risk reduction strategic planning
	18 February 2009	Closing (phase)	Fire Study
	5 June 2009	Implementation	Unpacking the DMP

6.5 Phase 6 ~ IDP Implementation Phase

After the plans and the priority projects have been integrated and approved then can funding can be sourced and made available for the implementation of these strategies and projects.

7. KPA 1 ~ INTEGRATED INSTITUTIONAL CAPACITY

7.1 Shared responsibility for disaster management

The responsibility for reducing disaster risk, preparing for disasters, and responding to disasters is shared among all departments and employees of local municipalities within the Ugu District Municipality, all departments and employees of the Ugu District Municipality, all provincial and national organs of state operating within the municipality, all sectors of society within the municipality and, perhaps most importantly, all the residents of the municipality.

7.1.1 Nodal points for disaster management

Although the municipal department within Ugu District Municipality 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. Therefore it is required that each municipal department and each local municipality within the District assign a person or section within the department / local municipality to be the nodal point for disaster management activities in that department / local municipality. The same applies to national and provincial departments operating within the municipality. The disaster management activities to be performed within departments and local municipalities include participation in disaster risk reduction as well as preparedness and response.

7.1.2 Departments with primary responsibility for specific hazards and disaster risks

Where a 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. Ugu Disaster Management can support such a department with advice, information, facilitation and coordination.

7.1.3 Assignment of responsibility to deal with specific disaster risks

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 coordination instituted during disasters does not absolve any agency of its assigned responsibilities. In order to reduce the size of this document a specific and detailed listing of all the disaster management responsibilities of each municipal head of department and those of other roleplayers will not be supplied in the body of this document. Legislation assigns responsibility for most disaster risks to specific departments or functions. There are grey areas related to some disaster risks. 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. The risk profile of the Ugu District Municipality is considered when primary and supporting roleplayers are identified for each risk. Such allocation of primary and supporting roles should be done in consultation with all relevant roleplayers, will be informed by existing legal frameworks, and assignment will be done on a consensus basis. The above assignment of responsibilities should be revisited and confirmed on an annual basis, and recorded and distributed in the format indicated in table below.

Table 6: Assignment of primary and supporting roleplayers for disaster risks

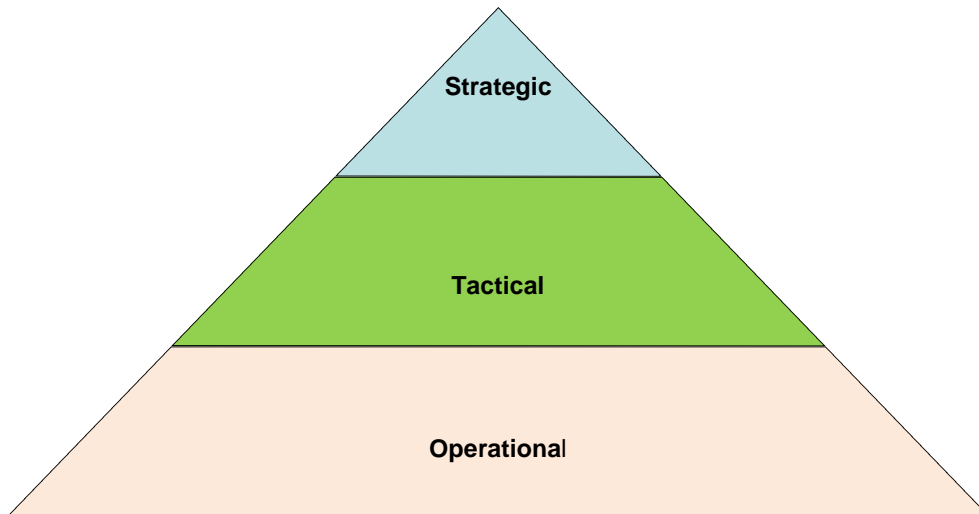
Description of disaster risks identified in the risk profile of the municipality (Complete one table per risk)	Primary role player in risk reduction to be indicated here	Supporting roleplayers
	Primary role player in preparedness to be indicated here	Supporting roleplayers
	Primary role player in response and relief to be indicated here	Supporting roleplayers
	Primary role player in recovery & rehabilitation to be indicated here	Supporting roleplayers

7.2 Corporate Disaster Risk Management Structure for the Ugu District Municipality

The Corporate Disaster Management structure for the Ugu District Municipality must deal with both pro-active and reactive disaster management issues and encompasses more than the department which is responsible for the function. The structure will include the following elements:

It is important to note that disaster management has different structure which it needs to operate in. Disaster Management in the Ugu district interfaces the local municipal and provincial spheres through the various forums. This communication is coupled with decision making ability and ultimate responsibility and accountability present on three different and all very important levels which are:

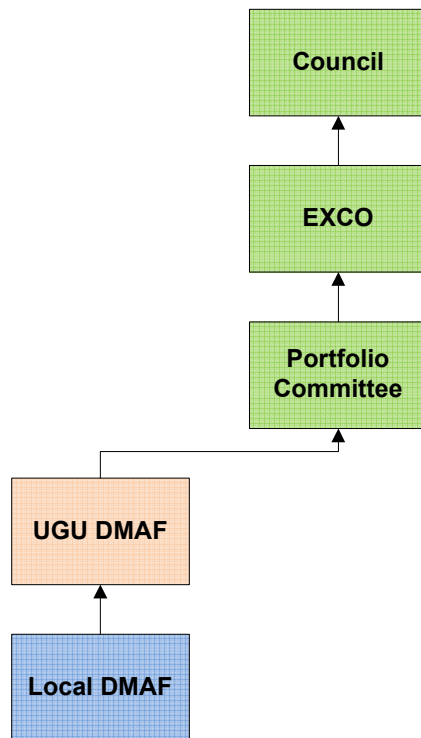
- Strategic level
- Tactical Level
- Operational Level



7.2.1 Strategic Disaster Management Structures

The structure and forums detailed in this section is currently in place in the Ugu district and need to be utilised to ensure that the issues identified through disaster management which include risks, vulnerabilities and projects get the appropriate priority and that resources can be made available for them.

Ugu Disaster Management Strategic Structure



7.2.1.1 Portfolio Committee

This is a coordination forum where instructions and resolutions from the Advisory Forum can be presented and discussed for approval by Council. This forum should also monitor the implementation and progress, and serves as a coordination forum for disaster management issues within the municipality.

7.2.1.2 Municipal Managers Forum

This is a technical committee supporting the District IGR Forum. It is the overall working team that influences to a larger extent issues that come to the District IGR Forum as well as manage the processing of the resolutions taken. This forum meets in preparation for the District IGR Forum or sometimes simply to trash out administrative issues that need joint decision-making by the family of municipalities and are operational in nature. It is very important that the municipal manager's forum shares the interest and opinions of the disaster management initiatives to assist with ensuring a sustainable implementation of its initiatives.

7.2.1.3 Municipal Disaster Management Advisory Forum

District municipalities may establish municipal disaster management advisory forums as described in Section 51 of the Disaster Management Act. It is advantageous for a municipality to establish such a forum to coordinate strategic issues related to disaster 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 Advisory forum has been established and is functioning with meetings scheduled every 3 months or as required. All disaster management role players and leadership from local municipalities within the district should form part of the forum. The objective of this forum should be to encourage consultation and information sharing to better coordinate role player actions on matter relating to disaster management in the district.

As per the Ugu IDP of 2009 – 2010; The Disaster Management Act 57 of 2002 section 51 put emphasis on the establishment of Municipal Disaster Management Forum consisting of all the stakeholders participating in disaster management issues or integral part of it and Experts in disaster management designated or a person co-opted by the forum in question for a specific period or specific discussion. A forum is a body in which a municipality and relevant disaster management role players in the municipality consult one another and coordinate their actions on matters relating to disaster management. It is a significant part of corporate governance best practice standards as per the King II Report on corporate governance. Disaster Risk Management provides a reasonable assurance to government that the state objectives will be

achieved within a tolerable degree of residual risk. The goal of mitigation is to reduce the future impacts of disastrous incidents including damage to property, disruption to local and regional economies, financial loss and the amount of public and private funds spent to assist with recovery. The Disaster Management Advisory Forum exists for integration and co-ordination amongst municipalities as disasters are usually not limited within political boundaries.

7.2.2 Tactical Disaster Management Structures

There is currently a structure in place which assists the Ugu district in performing its functions and responsibility in terms of disaster management. It is however important that the objective and function of each forum be understood as well as identify where they fit into the bigger picture of disaster management in the municipality and utilise them appropriately.

7.2.2.1 *Ugu Disaster Management*

The department within the municipality assigned with the Disaster Management function. A district municipality is legally obliged to establish a Disaster Management Centre. The Disaster Management Centre of the Ugu District Municipality 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, coordinating and directing the disaster risk management activities of all role players. There exist a structure and facility for disaster management in the Ugu district, however the plan will document and highlight key aspect and initiatives which will ensure the optimal utilisation and improvement of such.

7.2.2.2 *Departmental and local municipality planning groups*

This element relates to planning groups that can be established within departments or local municipalities within the District to deal with internal disaster 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 management nodal points of such departments or local municipalities will be involved in these planning groups.

7.2.2.3 *Practitioners Forum*

The practitioner's forum is a planning group with the main objective of coordinate the daily operations of disaster management. This group allows the local municipalities to engage with one another and share in their experiences, lessons learned and planning exercise. At the same time enable the district to coordinate the functions and operations on a district level to

ensure that there is no duplication of activities and all aspects of disaster management are dealt with by a responsible authority.

7.2.3 Operational Disaster Management Structures

There are a number of teams and groups identified which forms a key role in the implementation of disaster management activities. These teams are dynamic and depend on the specific risk, location and initiative to implement.

7.2.3.1 *Risk reduction project teams*

A multi-disciplinary project team convened to address and reduce a specific disaster risk. Convened by the primary role-player for the risk and supported by Disaster Management.

7.2.3.2 *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 Disaster Management.

7.2.3.3 *Joint response & relief management teams*

Mostly flowing from a preparedness planning group, a team that is mobilised to deal with the immediate response & relief required during or immediately after major incidents and disasters. These teams will normally convene in the Joint Operations Centre (see description below).

7.2.3.4 *Recovery & rehabilitation project teams*

Project teams managing recovery and rehabilitation after disasters. Departments who are responsible for the maintenance of specific infrastructure are also responsible for the repair or replacement of such infrastructure after disasters. Disaster recovery and rehabilitation must focus on risk elimination or mitigation.

7.2.3.5 *Ugu Emergency Control Centre/Group*

This centre or group provide 24-hour emergency standby which is responsible for day-to-day emergency response by municipal departments and for the establishment of strategic communication links. The Ugu Emergency Control Centre/Group should liaise closely with the Emergency Control Centres/Groups of the local municipalities within the Ugu District Municipality on an ongoing basis. The Ugu districts has a call centre in place which facilitates coordination and assist with the communication and information sharing between role players. However, there are still room for improvement to ensure that the Ugu district complied with all legislation and requirements of a fully functional disaster management/shared services

emergency centre. More detail on the roles and responsibilities as well as the steps involved in the establishment of an effective emergency call centre is detailed in the annexures.

7.2.3.6 Ugu Joint Operations Centre (JOC)

A facility equipped to serve as command and coordination centre during disasters, where the joint response & relief management team will convene. The current call centre in Connor Street served well as a JOC during the flood disaster during 2008 however, alternative facilities should be identified as back-up to this primary JOC in the case of a major incident or disaster affecting this facility. An example which proves the value of identifying an alternative facility is the flash floods which destroyed the iLembe district disaster management centre during March 2009.

8. KPA 2 ~ RISK ASSESSMENT

After analysis of the likelihood, severity, vulnerability and the capacity to cope with the various hazard events the project team identified that the following risk reduction and preparedness plans need to be developed for all hazards listed in the table below. The initial scope was to identify the top 10 priority risk and develop risk reduction and preparedness plans for them, however after further investigation and consultation with the local role players additional risks were identified to be included in this round of planning. The following disaster risks were identified during a risk assessment process conducted throughout the Ugu District in 2008/09.

Table 7 : Priority risks per Local Municipality

Umdoni	Vulamehlo	Ezinqoleni	Hibiscus coast	Umuziwabantu	Umzumbe
Air pollution	Cholera	Cholera	Cholera	Cholera	Cholera
Drought	Drought	Dam failure	Drought	Drought	Deforestation
Fire	Fire	Drought	Fires	Fires	Drought
Floods	Floods	Fire	Floods	Floods	Fires
HIV	HIV	Floods	Hail Storms	Hazmat by road	Floods
Land Degradation	Land degradation (trees*)	HIV	Hazmat by road*	HIV	Hazmat by road
Oil pollution*	Severe storms	Hazmat by	Hazmat by rail*	Land	Rabies

	road			degradation	
Rabies*	Shigella Dysentry	Land degradation	Industrial waste* /storm water*	TB	Severe weather
Severe storms	Storm surges	Severe storms	Land Degradation	Severe storms (wind*)	TB
Shigella Dysentry	TB	TB	Measles	Water pollution	Waste and disposal
Tidal Wave	Tidal wave	Water pollution	Polio		Water pollution
Water pollution	Water pollution		Power outages*		
			Rabies		
			Shigella Dysentry		
12	12	11	14	10	11

** Risk identified at the municipality stakeholder meeting for inclusion to form part of the priority risks in the way forward*

This will ensure that the high risks are considered, and risk reduction and mitigation strategies are developed for each risk. The above lists exhibit the types of disasters that might occur within the area of the Ugu District Municipality 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. The detailed risk analysis and risk descriptions are provided in the risk assessment annexure.

9. KPA 3 ~ RISK REDUCTION PLANNING

Risk reduction plans providing for prevention and mitigation strategies have been compiled through a participative process and have not been vetted or submitted to feasibility studies. The risk reduction plans outlined in this document and its annexures 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 DMAF, such a lead department must manage all planning and budgeting processes for said project. The Disaster Management department of the Ugu District Municipality 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 Ugu Disaster Management Centre.

9.1 Risk reduction plans for the Ugu District Municipality

The project that was developed is categorised according to hazards and strategies and is provide in the risk reduction annexure.

9.2 Risk reduction capacity for the Ugu District Municipality

The organisational structure for risk reduction within the municipality includes Ugu Disaster Management, the Disaster Management Advisory Forum, the Interdepartmental Disaster Management Committee, the nodal points for disaster management within municipal departments and local municipalities within the district, departmental and local municipal 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. Ongoing capacity building programmes will be required to ensure the availability of adequate capacity for risk reduction.

10. KPA 4 ~ RESPONSE AND RECOVERY

10.1 Preparedness plans

Preparedness plans have been compiled through a participative process and have not been vetted in terms of practical execution.

10.1.1 Preparedness plans of the Ugu District Municipality

The preparedness plans are provided in the annexures for KPA 4.

10.1.2 Preparedness capacity for the Ugu District Municipality

The organisational structure for preparedness within the municipality includes Ugu Disaster Management, the Disaster Management Advisory Forum, the Interdepartmental Disaster Management Committee, the nodal points for disaster management within municipal departments and local municipalities within the district, departmental and local municipal planning groups, preparedness planning groups, Joint Response & Relief Management Teams, Recovery & Rehabilitation Project Teams, and the Ugu Emergency Control Centre.

The total structure of the municipality, with every member of personnel and every resource can potentially form part of preparedness capacity. Ongoing capacity building programmes will be required to ensure the availability of adequate capacity for disaster preparedness. The Ugu Emergency Control Centre is responsible for the operational procedures associated with day-to-day operational response to emergencies by municipal departments. The Ugu Emergency Control Centre and the Ugu Disaster Management Advisory Forum 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.

10.2 Response and recovery

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

10.2.1 Declaration of a state of disaster and disaster classification

When a disastrous event occurs or is threatening in the area of the municipality, the DMC /Section will determine whether the event is a disaster in terms of the Act, and, if so, the Head of the Centre 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 National Disaster Management Centre and the KZN Provincial 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 KZN Provincial Disaster Management Centre, the Ugu Disaster Management Centre 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 municipality is primarily responsible for the co-ordination and management of local disasters that occur in its area. 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 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.

11. ENABLER 1 ~ INFORMATION MANAGEMENT AND COMMUNICATION SYSTEMS

11.1 Objective

The first enabler which is required to ensure that disaster risk management can be implemented effectively is the development of a comprehensive information management and communication system and the establishment of integrated communication links with all disaster risk management role players.

11.2 Introduction

Disaster risk management is a collaborative process that involves a wide spectrum, cross functional and diverse group of role players from all spheres of government, NGOs, the private sector, a wide range of capacity-building partners and communities. Disaster management depends on accurate decision making which can only be possible if current and reliable hazard and disaster risk information is available. This also requires effective information management and communication systems to enable the receipt, dissemination and exchange of information.

11.3 Key performance indicators

- A disaster risk management information and communication system for district and local government has been established and implemented.
- The disaster risk management information and communication system supports the KPAs and enablers at district and local government.
- District and local information management and communication systems are fully compatible with the provincial and national system.

11.4 Outline of this document

This section gives an outline of the basic requirements and flow of communication in the event of an incident. An incident register database was developed to assist with the recording and dissemination of information. It is important to have a record of all incidents which occurred in the areas to assist with the preparedness of disaster risk management. Standard forms are provided to assist with the gathering and recording of information. These forms are structured in such a way to easily guide the district disaster management through the handling of an incident. These forms are linked to the database to ensure that all information can be easily captured into the database and disseminated after it has been captured. The forms are aligned with the guidelines provided by the KZN Provincial Disaster Management Centre. The

following forms and documentation are provided in this section: Incident report form, Incident assessment form, Incident conclusion form, Relief aid request form.

The phased approach to Information management and Communication system

The Ugu District Municipality is in the transition phase of working towards the establishment of a shared service centre jointly between the District and the local municipalities. Discussions between the local municipalities the District disaster management and other district services are somewhat advanced and agreements are being structured around possible funding and resourcing and operations of the centre. It is envisaged that the District will provide the physical facility and limited resources which will be complimented by the existing resources of the local and departmental services. This solution provides for long term optimal planning with a substantial cost saving to both the District and the Local municipalities.

12. ENABLER 2 ~ EDUCATION, TRAINING, AWARENESS AND RESEARCH

12.1 Objective

The objective of the second enabler is to promote a culture of risk avoidance among stakeholders by capacitating role players through integrated education, training and public awareness programmes informed by scientific research.

12.2 Introduction

The Disaster Management Act states that the following concepts should for the basis of disaster management awareness and training:

- ◆ A culture of risk avoidance.
- ◆ Promotion of education and training.
- ◆ Promotion of research into all aspects of disaster risk management.

This enabler is aimed at achieving the following requirements:

- ◆ Addresses the requirements for the implementation of education, training and research needs.
- ◆ The development of an integrated public awareness strategy
- ◆ Effective use of the media.
- ◆ The development of education and training for disaster risk management and associated professions.
- ◆ The inclusion of disaster risk management in school curricula.

12.3 Outline of this component

All the sections prior to this highlight the various aspects of this enabler and the requirements by the act. It is important to ensure that some a strategy is in place to implement awareness, training, education and research in line with the guidelines provided in this document. The National Disaster Management Centre (NDMC) has many ongoing disaster risk management initiatives amongst which is to provide assistance to municipalities. The NDMC is an important source of information and should be utilised optimally. They have conducted many research initiatives and are the custodians of many other disaster risk management literature. The rest of this section provides the strategy which needs to be implemented for achieving compliance with the requirement of Enabler 2. Additional information to assist with the implementation of this strategy is provided at the end of this section. The following table lists the details of key projects which need to be included in the IDP for implementation to ensure that the Key Indicators of Enabler 1 is achieved.

13. ENABLER 3 ~ FUNDING ARRANGEMENTS FOR DISASTER RISK MANAGEMENT

The annexure for Enabler 3 provides a general overview of the recommendations on funding arrangements for disaster risk management to cover the costs associated with the following activities (National Disaster Management Framework):

- start-up activities,
- disaster risk management
- disaster risk reduction,
- response, recovery and rehabilitation activities, and
- training and capacity-building programmes.

The table below provides an overview of the recommended funding mechanisms for each of the five disaster management activities mentioned above.

Table 8: Funding arrangements for disaster risk management

Activity	Funding source
Start-up activities (KPA 1, Enabler 1)	National government
Disaster risk management ongoing operations (KPA 2 and 3)	National and provincial government
	New assignment to local government
Disaster risk reduction (KPA 2 and 3)	National departments
	Provincial departments
	District municipalities
	NDMC - In the case of low-capacity, resource-poor municipalities
Response, recovery and rehabilitation and reconstruction efforts (KPA 4)	National government
	Provincial government
	Local government
Education, training and capacity-building programmes (Enabler 2)	All spheres of government

It also establishes the principles and the administrative procedures to guide the development of financial arrangements for disaster management. It outlines current financial mechanisms, highlights key problems with the current situation, and proposes a set of future funding arrangements for disasters in the Municipality.

14. TESTING AND REVIEW OF THE PLAN

The municipality will regularly review and update its plan, as required by Section 48 of the Disaster Management Act. The Disaster Risk Management Advisory Forum shall be responsible for the review and update of the corporate plan on an annual basis.

15. WAY FORWARD

This document ensures that the Ugu District Municipality complies with the Disaster Management Act, Act 57 of 2002. Through the hazard identification process hazards and vulnerable communities have been identified. The risk prioritisation is based on the combination of hazards with the vulnerable communities and their ability and capacity to cope with the exposure to these hazards. With assigning a value to the above parameters, the resultant effect is the overall risk prioritisation rating for each of the local municipalities and the Ugu District Municipality. The most critical hazards are addressed by the development of disaster risk reduction plans and disaster preparedness plans.

The way forward is to make sure that these plans and strategies which have been identified during this process are approved and integrated into the IDP. This will secure funding for the implementation of the identified projects. For the municipality to ensure continuous improvement of service delivery, these plans have to be incorporated into their strategic planning and sectoral plans. It is crucial that the municipality identify a person responsible for the ongoing improvement of disaster management capabilities within the municipality.

The following are key issues to be considered for the **immediate action** by the Ugu district municipality.

- approval and adoption of the Ugu disaster management plan,
- appointment of appropriate resources to assist the disaster manager with the implementation of the disaster management plan,
- allocate resources or appoint service providers to assist with the preparation of business plans for projects as identified in the disaster management plan,

- allocate resources or appoint service providers to assist with the project implementation of the risk reduction projects and disaster management enabling projects as detailed in the project summary,
- Regular review of the disaster management plan.

The immediate actions and long term updating and monitoring of the plan is unpacked in more detail in the annexures which gives a step by step structured approach to implementing this plan.

Should you require additional assistance regarding any matter arising from the implementation of the disaster management plan, Aurecon will be more than willing to consult with the municipality and provide ongoing support.

16. DISASTER MANAGEMENT PLAN IMPLEMENTATION

The measure of success for the implementation of the plan will be dependant on satisfying the indicators as described and unpacked in the table below. The implementation should also be programmed to identify which of these indicators will be satisfied within the next 3 year time frame. It must also be highlighted that some of these KPA's have been satisfied through the Disaster Management Planning process. The Municipal evaluation tool is used to measure the key deliverables achieved during the implementation phase and to monitor the extent to which these indicators have been met. Although these indicators determine the extent to which the plan is currently being implemented, it should not be seen as a "once off" exercise but should be updated and reviewed annually to ensure that the information and current scenario is always taken into account. It is also necessary to ensure that although a certain level of compliance may have been achieved for these indicators, it is very necessary to ensure that this is improved upon and reviewed each year to ultimately achieve full compliance on each indicator. There will be a natural progression towards this as the knowledge, information and awareness about the topic of Disaster Management becomes more widely spread and better understood at the "Grass Roots" level. Disaster management is about planning ahead and being prepared.

Table 9: Checklist for the implementation of the Disaster Management Plan

KPAs	OBJECTIVES	KEY INDICATORS
KPA 1 (Integrated Institutional Capacity for Disaster Risk Management)	Establish integrated institutional capacity within the municipal sphere to enable the effective implementation of disaster risk management policy and legislation.	<ul style="list-style-type: none"> Establish mechanisms for DRM policy Put in place arrangements for integrated direction & execution of DRM Policy Put in place mechanisms for stakeholder participation & technical advice Establish & ensure effective operation of the Disaster Management. Ensure the operational capacity of the Disaster Management Section is in place Ensure the DM Advisory Forum (DMAF) is in place (optional)
KPA 2 (Disaster Risk Assessment and Monitoring)	Generate an indicative Municipal Disaster Risk Profile by establishing and maintaining a uniform methodology to continuously assess and monitor risk.	<ul style="list-style-type: none"> Conduct Disaster risk assessments to inform risk management Generate municipal disaster risk profile Monitor, update & disseminate risk information to entities and communities Conduct quality control (<i>meaning have evidence of capacity building, consultation & verification of actual situations with communities & appropriate government stakeholders, validate assessments before publication & dissemination, ensure implementation of risk reduction initiatives based on assessments etc</i>)
KPA 3 (Disaster Risk Reduction)	Integrated Disaster Management Plans and risk reduction programmes by all disaster management stakeholders developed in accordance with approved frameworks.	<ul style="list-style-type: none"> Ensure DRM plans are in place Prioritise disaster risks, declared areas, communities & households Scoping & development of DR reduction plans, projects & programmes must be in place Include in strategic structures risk reduction efforts Implement & monitor DR reduction programmes & initiatives
KPA 4 (Preparedness, Response and Recovery)	To ensure effective and appropriate preparedness, response, recovery and rehabilitation through: <ul style="list-style-type: none"> Implementing a uniform 	<ul style="list-style-type: none"> Identify mechanisms for dissemination of early warnings Put in place mechanisms & guidelines for assessment, classification etc Ensure response & recovery efforts are

	<p>approach to the establishment of effective early warning strategies,</p> <ul style="list-style-type: none"> • Avert or reduce the potential impact in respect of health impacts, personal injury, loss of life, property, infrastructure, environments and government services, • Immediate integrated and appropriate response and relief actions when significant events or disasters occur or are threatening to occur. • Conduct all rehabilitation and reconstruction strategies conducted following a disaster are implemented in an integrated and developmental manner 	<p>integrated</p> <ul style="list-style-type: none"> • Standardise & regulate relief measures • Conduct integrated rehabilitation & reconstruction activities • Ensure all departments have a disaster Management plan including finance
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ENABLERS	OBJECTIVE	KEY INDICATORS
Enabler 1 <i>(Information and Communication)</i>	To develop a comprehensive Disaster risk Management information system and establish integrated communication links with all disaster risk management role players in provincial and municipal spheres of government.	<ul style="list-style-type: none"> • Identify data needs & sources • Ensure info management & communication system supports KPAs & enablers of NDMF (also PDMF and DDMF when developed) • Promote culture of avoidance, create awareness, and ensure good media relations are in place
Enabler 2 <i>(Education, Training, Public Awareness and Research)</i>	To promote a culture of Risk avoidance among stakeholders by capacitating all role-players through integrated education, training and public awareness supported by scientific research.	<ul style="list-style-type: none"> • Conduct education, training & research needs & also resource analysis • Put in place DRM education framework & programmes • Ensure alignment of such programmes with provincial and municipal programmes
Enabler 3 <i>(Funding)</i>	Establish mechanisms for the funding of disaster risk management in the municipality.	<ul style="list-style-type: none"> • Establish funding arrangements for: <ul style="list-style-type: none"> ☞ Assessments ☞ Risk reduction ☞ Response & recovery ☞ Education & training

17. ANNEXURES

Annexure A: KPA 1 ~ Integrated institutional capacity

Annexure B: KPA 2 ~ Risk and Vulnerability Assessment

Annexure C: KPA 3 ~ Disaster Risk Reduction Plan

Annexure D: KPA 4 ~ Response and Recovery Plan

Annexure E: Enabler 1 ~ Information and communication management

Annexure F: Enabler 2 ~ Education, training, public awareness and research

Annexure G: Enabler 3 ~ Funding arrangements

Annexure H: Implementation plan

Annexure I: Definitions and Abbreviations