DISASTER RISK MANAGEMENT PLAN
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<td>Tswelopele Local Municipality 2013</td>
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VISION
“We shall be a consistent Municipality with a large natural base, offering high quality of services and a harmonious quality of life for all.”

MISSION
Tselelopele Local Municipality strives for financial and administrative stability while constantly providing quality, affordable and sustainable services and also promoting good quality of life for our citizens

VALUES
In addition to the Batho Pele principles, our municipality commits itself to upholding the following set of values:

- Good governance
- Accountability
- Public participation
- People driven development
- Teamwork & commitment
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## Abbreviations and Acronyms

<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CBO</td>
<td>Community based organisation</td>
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<tr>
<td>DMA</td>
<td>Disaster Management Act (Act No. 57 of 2002)</td>
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<td>DMIS</td>
<td>Disaster Management Information System</td>
</tr>
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<td>DOC</td>
<td>Disaster Operations Centre</td>
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<td>DRMAF</td>
<td>Disaster Risk Management Advisory Forum</td>
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<td>DRMP</td>
<td>Disaster Risk Management Plan</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographical Information Systems</td>
</tr>
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<td>PDRMC</td>
<td>Provincial Disaster Risk Management Centre</td>
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<td>PDRMF</td>
<td>Provincial Disaster Risk Management Framework</td>
</tr>
<tr>
<td>GPS</td>
<td>Geographical Positioning System</td>
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<tr>
<td>IDP</td>
<td>Integrated Development Plan</td>
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<td>JOC</td>
<td>Joint Operations Centre</td>
</tr>
<tr>
<td>LDDRMC</td>
<td>Lejweleputswa District Disaster Risk Management Centre</td>
</tr>
<tr>
<td>KPA</td>
<td>Key Performance Area</td>
</tr>
<tr>
<td>MDRMC</td>
<td>Municipal Disaster Risk Management Centre</td>
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<tr>
<td>MFMA</td>
<td>Municipal Financial Management Act</td>
</tr>
<tr>
<td>NDMC</td>
<td>National Disaster Management Centre</td>
</tr>
<tr>
<td>NDMF</td>
<td>National Disaster Management Framework</td>
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<td>NGO</td>
<td>Non-governmental organisation</td>
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<tr>
<td>PFMA</td>
<td>Public Financial Management Act</td>
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<td>SDF</td>
<td>Spatial Development Framework</td>
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EXECUTIVE SUMMARY

The Constitution of the Republic of South Africa (Act 108 of 1996) places a legal obligation on the Government of South Africa to ensure the health (personal and environment) and safety of its citizens. In terms of section 41(1) (b) of the Constitution, all spheres of Government are required to “secure the well-being of the people of the Republic”. Section 152(1) (d) also requires that local government “ensure a safe and healthy environment”. In view of the above, and the established understanding of disaster risk management, the primary responsibility for disaster risk management in South Africa rests with Government.

Section 26(g) of the Municipal Systems Act 32 of 2000 compels that a risk management plan should be part of Integrated Development Plans. Sections 53 of the Disaster Management Act 57 of 2002 also states that municipalities must prepare disaster management plans according to circumstances prevailing in their areas. This plan establishes the arrangements for disaster risk management within Tswelopele Local Municipality (TLM) and has been prepared in accordance with the requirements of Disaster Management Act, 57 of 2002 (the Act) and section 26(g) of the Municipal Systems Act, 2000.

The Tswelopele Local Municipality Disaster Risk Management Plan (DRMP) outlines the institutional arrangements for disaster risk management planning which includes the assignment of primary and secondary responsibilities for priority disaster risks posing a threat in Tswelopele Local Municipality. It further provides the broad framework within which the departments will implement the disaster risk management planning requirements of the Act and other entities included in the organisational structure of Tswelopele LM. It establishes the operational procedures for disaster risk reduction planning as well as the emergency procedures to be implemented in the event of a disaster occurring or threatening to occur in council’s area. It aims at facilitating an integrated and coordinated approach to disaster risk management in the municipality which will ensure that Tswelopele Local Municipality achieves its vision for disaster risk management which is to build resilient communities in Tswelopele LM who are alert, informed and self reliant by establishing risk reduction and resilience building as core principles, and developing adequate capabilities for readiness; and effective and rapid, response and recovery.

This disaster risk management plan is in line with the National Disaster Management Framework, and the Provincial Disaster Management Framework which addresses disaster risks though four Key Performance Areas (KPAs) and three Enablers:
1. INTRODUCTION TO THE PLAN

1.1 Each municipality must within the applicable municipal disaster management framework prepare a disaster management plan for its area according to the circumstances prevailing in the area

- Coordinate and align the implementation of its plan with those of other organs of state and institutional role-players
- Regularly review and updated its plan (Yearly)
- Through appropriate mechanisms, process 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.

This plan provides a brief background study of Tswelopele LM in line with its current Integrated Development Plan (IDP). Tswelopele LM disaster risk management plan contains a macro disaster risk assessment based on field research, observation, primary- and secondary data sources. The Tswelopele Local Municipality (LM) disaster management plan has as far as possible been embedded in the current reality of the municipality. The macro disaster risk assessment provides the foundation towards risk reduction planning based on the identified and prioritised disaster risks and vulnerabilities of Tswelopele LM. This DMP for Tswelopele LM furthermore provides the municipality with a guiding framework for future disaster risk management planning by the municipality as a whole as required by Disaster Management Act 57 of 2002 and the Municipal Systems Act 32 of 2000. The relationship between, and different roles and responsibilities of, Lejweleputswa District Disaster Management Centre (DRMC) and DRMC of Tswelopele LM are reflected in the document. The plan gives guidance in relation to the declaration of a local state of disaster, disaster classification and the institutional arrangement necessary for the successful implementation of the Act. Each section of this plan contains a number of Actions to be taken, which need to be considered and implemented in order for Tswelopele LM to obtain the outcomes envisaged by this plan.
1.2 Disaster management plan for a municipal area must:

- Form an integral part of the municipality's integrated development plan
- Anticipate the types of disasters that are likely to occur in the municipal area and their possible effects
- Place emphasis on measures that reduce the vulnerability of disaster-prone areas, communities and households
- Seek to develop a system of incentives that will promote disaster management in the municipality
- Identify, communities or households at risks
- Take into account indigenous knowledge relating to disaster management
- Promote disaster management research
- Identify and address weaknesses in capacity to deal with possible disasters
- Provide for appropriate prevention and mitigation strategies
- Facilitate maximum emergency preparedness and
- Contain contingency plans and emergency procedures in the event of a disaster; providing for-
  - Allocation of responsibilities to the various role-players and coordination in carrying out of those responsibilities
  - Prompt disaster response and relief
  - Procurement of essential goods and services
  - Establishment of strategic communication links
  - Dissemination of information; and
  - Other matters that may be prescribed

The disaster risk management plan for Tswelopele LM has as much as possible been embedded in the current local reality of the municipality. Therefore, this brief description of the most salient features of the municipality is added to sketch this current local reality. More extensive information can be obtained from Tswelopele LM Integrated Development Plan.

2. Requirements of a Disaster Risk Management Plan

According to NDMF, a Level 1 Disaster Risk Management Plan applies to national or provincial organs of state or municipal entities that have not previously developed a coherent Disaster Risk Management Plan. It focuses primarily on establishing foundation institutional arrangements for DRM, putting in place contingency plans for responding to known priority risks as identified in the initial stage of the DRA, identifying key governmental and other stakeholders, and developing the capability to generate a Level 2 plan. A Level 1 Disaster Risk Management Plan for a local municipality should therefore have the following components:
• Explanation of the institutional disaster risk management arrangements in the municipality;
  o Political forum for disaster risk management;
  o Senior management forum for disaster risk management
  o Disaster Risk Management Centre (or equivalent);
  o Head of the Disaster Risk Management Centre (or equivalent);
  o Volunteer structures;
• The identification of key governmental and external role-players which needs to be consulted (typically through the senior management forum as above).
• A macro risk profile (hazard, vulnerabilities and capacities) for the area in question;
• Contingency plans for the prioritised risks (as per the macro risk profile);
• Evidence of the ability to generate a Level 2 Disaster Risk Management Plan. (should it be included)

2.1 The custodian of the plan

The Municipal Manager of Tswelopele LM in conjunction with Disaster Risk Management Centre (DRMC) is the custodian of the disaster risk management plan for Tswelopele LM. Disaster Risk Management Centre is responsible to ensure the regular review and updating of the plan.

The Disaster Management Official/Coordinator will ensure that copies of the approved plan as well as any amendments to the plan are submitted to:
  • Lejweleputswa District Disaster Risk Management Centre;
  • Disaster Risk Management Centre of the Free State Province;
  • National Disaster Management Centre (NDMC);
  • Tswelopele LM ward disaster risk management structures; and
  • Each of the neighbouring municipalities of Tswelopele LM.

In terms of section 52 of the Act each municipal organ of state and any other municipal entity operating within council’s organisational structure is responsible for the development and maintenance of the disaster risk management plan for its functional area. Departmental plans and plans of other entities are an integral part of council’s disaster risk management plan and therefore the head of each department and of each entity must ensure that copies of the plan and any amendments to the plan are submitted to Tswelopele LM DRMC.
2.2 Purpose of the plan

The purpose of Tswelopele LM Disaster Risk Management Plan (DRMP) is to document the institutional arrangements for disaster risk management planning which includes the assignment of primary and secondary responsibilities for priority disaster risks posing a threat in Tswelopele LM. It further provides the broad framework within which the departments will implement the disaster risk management planning requirements of the Act and other entities included in the organisational structure of Tswelopele LM. It establishes the operational procedures for disaster risk reduction planning as well as the emergency procedures to be implemented in the event of a disaster occurring or threatening to occur in council’s area. It aims to facilitate an integrated and co-ordinated approach to disaster risk management in it’s area of jurisdiction, which will ensure that Tswelopele LM achieves its vision for disaster risk management which is to build a resilient people in Tswelopele Local Municipal area who are alert, informed and self reliant by establishing risk reduction and resilience building as our core principles, and developing adequate capabilities for readiness; and effective and rapid, response and recovery.

2.3 Tswelopele Local Municipality disaster risk management context

Tswelopele Local Municipality is exposed to a diversity of hazards of natural origin including veld fires, severe weather events, drought, floods, fires, motor vehicle accidents and the outbreak of biological diseases such as, tuberculosis, meningitis and cholera. Tswelopele LM is also exposed to a variety of technological hazards such as the interruption of services, and various forms of pollution.

The vulnerability in Tswelopele LM that could be exploited by potential hazards is still rooted in profound poverty, lack of diversity in primary (e.g. agriculture) and secondary (e.g. industrial) products, and the lack of education and resources. Despite the number of Developmental projects underway in Tswelopele LM, there are still numerous urban as well as rural communities, which are constantly exposed to conditions of vulnerability. As a result their capacity to withstand, cope with and/or recover from the impact of such, risk is severely compromised. This plan will highlight some of the priority areas, which need an urgent developmental initiative to address this disaster risk.
2.4 Background study for Tswelopele Local Municipality

The following section aims to provide a more detailed description of the area and the situation in the municipal area relevant for the purposes of this plan. This information can be found in the IDP of Tswelopele LM.

2.4.1 Geographical location

Tswelopele Local Municipality is located within Lejweleputswa District Municipality along the R708 tourism route, between Welkom and Bloemfontein and covers an area of 6 506.68 km². It is one of four local municipalities that make up the district.

The R708 tourism corridor between Welkom and Bloemfontein crosses the area. The current state of the roads differs from good to fair to poor, due to high frequency of traffic. Tswelopele also has rail linkages (goods only) with the adjoining towns and areas.

Figure 1: Map of Lejweleputswa District Municipality

2.4.2 Demographic profile

The following maps indicate spatial locations of each of the municipalities and can be comp
2.5 Demographic Profile

Tswelopele falls in the Lejweleputswa District area which is situated in the north western parts of the Free State, borders the North West Province to the north, Fezile Dabi and Thabo Mofutsanyana districts to the north east and east, Motheo and Xhariep to the south and the Northern Cape to the west. The depiction of where Tswelopele is situated in Lejweleputswa District Municipality is shown in above map 1. Tswelopele Local Municipality is the fourth largest municipality in the Lejweleputswa District municipality in size as presented in the following table 1 below.

Table 1: Municipal Area in Km²

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Area in km²</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masilonyana</td>
<td>6 775.97</td>
<td>21.4%</td>
</tr>
<tr>
<td>Matjhabeng</td>
<td>9 298.32</td>
<td>29.3%</td>
</tr>
<tr>
<td>Nala</td>
<td>6 506.68</td>
<td>20.5%</td>
</tr>
<tr>
<td>Tswelopele</td>
<td>5 142.40</td>
<td>16.2%</td>
</tr>
<tr>
<td>Tokologo</td>
<td>3 963.01</td>
<td>12.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31 686.38</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Free State Development Plan, 2001

According to the Free State Development Plan (2001), Tswelopele has 2,168 farms (19% of the district) and 12,299 erven (8% of the district). The municipality is fairly rural and its economic activity is still
largely based on agriculture and social services. There is no recent data showing the economic activity in the district. From interaction with the people, we can confirm that the primary sector, mainly agriculture and informal employment still provides opportunities to households in the municipal area.

Table 2: Population and Households

According to official estimated statistics, the population number in the municipality appears to decline as shown by table 2 above, with the 2011 estimates recording a marginal decline in population of 1.2% over period 2001-2011. An investigation must be undertaken to obtain reasons for the decline.

Table 2.1: Demographics – % Age Structure
The demographics of Tswelopele show that almost 95% of the population is under the age of 64 years. The majority is of people between 15 - 64 years as shown in the table 3 above. It is important to appreciate the age structure of potential pool of labour, noting that majority of the people are supposed to be economically active.

The number of males over the period under consideration has not marginally changed reflecting an insignificant decline from 92, 9% to 92, and 3%. Although the cause of this decline may not be known, it may not be useful to investigate this. It is however noted that comparative to the Lejweleputswa district there are less males in Tswelopele. This means that there are more females in the municipality.

Table 2.2: Demographics – % sex and dependency ratio

<table>
<thead>
<tr>
<th></th>
<th>Lejweleputswa</th>
<th>Tswelopele</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>51.5</td>
<td>67.4</td>
</tr>
<tr>
<td>2011</td>
<td>51.4</td>
<td>64.5</td>
</tr>
</tbody>
</table>

Source: Statistics SA 2011

Table 2.3: Households Dynamics and average households’ size

<table>
<thead>
<tr>
<th></th>
<th>Lejweleputswa</th>
<th>Tswelopele</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>95.9</td>
<td>92.9</td>
</tr>
<tr>
<td>2011</td>
<td>97.4</td>
<td>92.3</td>
</tr>
</tbody>
</table>

Source: Statistics SA 2011
The number of households has declined from 12430 in 2001 to 11992 in 2011 as shown by table 5. The cause of the decline has to be investigated. It is dangerous to assign reasons that have not been properly tested and interrogated. The decline in households is also confirmed by the decline in the average household size.

**Table 2.4: Households Dynamics – Female headed households**

It is worth noting that the female headed households have increased from 35, 3 in 2001 to 39,5 in 2011 as identified in table 6 above. The statistics shows that there is a small decrease in the number of males, that there are marginally less males in Tswelopele and this is mirrored by the increase in the female headed households.
Formal dwellings have shown an increase where it represents 80% of the people. This is also confirmed by the steady increase in the houses that are owned and or being paid off as shown by table 3 above. This means the informal settlements are decreasing as total percentage in Tswelopele. This positive change means the municipality’s revenue base should be increasing due to an increase in a number of customers to be billed.

- **Basic services**

The following table 6 shows the improvements in the number of households using electricity for lighting. The percentage of households using electricity has increased significantly over the survey period between of 2001-2011. The municipality is still committed to increasing the number of households through the electrification programme as detailed in this reviewed IDP document. Comparison of electrification with the district shows that Tswelopele has made significant progress of the number of years.

**Table 2.6 : Households using electricity for lighting**
The municipality has managed to significantly increase the percentage of households using flush toilets connected to the sewerage system from 12.8% in 2001 to 76.8% by 2011. The table 7 below is evidence.

**2.7: Households flush toilets connected to sewerage**

Tswelopele local municipality has increased its refuse removal services to more households in the 2001 to 2011 period as reflected by table 8 below. It is significant that this service has been extended to almost 77% of the total Tswelopele stakeholders by 2011.

**Table 2.8: Weekly refuse removal services**
It is worth noting that the number of households using piped water inside the dwelling has not increased as significantly. Progress is however noted as shown by table 9 below. As at 2012, there are no households using stand pipes. Households with water in their dwelling and inside their stands have increased over 2001 – 2011 periods.

2.9: Piped water inside dwelling
• Economy

The contribution to the economy of the Tswelopele is captured in the Lejweleputswa District Municipality IDP for 2009 - 2010. The economy of Tswelopele is largely driven by the Agricultural sector.

Table 2.10: Sector contribution to Tswelopele economy

<table>
<thead>
<tr>
<th>Economic activity by sector</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>513 863</td>
<td>316 328</td>
<td>830 191</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>415 181</td>
<td>34 536</td>
<td>449 717</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1 182 292</td>
<td>555 864</td>
<td>1 738 156</td>
</tr>
<tr>
<td>Electricity; gas and water supply</td>
<td>75 658</td>
<td>24 277</td>
<td>99 935</td>
</tr>
<tr>
<td>Construction</td>
<td>640 756</td>
<td>93 322</td>
<td>734 078</td>
</tr>
<tr>
<td>Wholesale and retail trade</td>
<td>876 585</td>
<td>804 138</td>
<td>1 680 723</td>
</tr>
<tr>
<td>Transport; storage and communication</td>
<td>351 964</td>
<td>125 961</td>
<td>477 925</td>
</tr>
<tr>
<td>Financial; insurance; real estate and business services</td>
<td>784 798</td>
<td>553 530</td>
<td>1 338 328</td>
</tr>
<tr>
<td>Community; social and personal services</td>
<td>838 670</td>
<td>1 106 469</td>
<td>1 945 139</td>
</tr>
<tr>
<td>Other and not adequately defined</td>
<td>351 386</td>
<td>827 881</td>
<td>1 179 267</td>
</tr>
<tr>
<td>Unspecified/Not applicable/Institutions</td>
<td>8 983 774</td>
<td>11 578 944</td>
<td>20 562 718</td>
</tr>
</tbody>
</table>

Source: Statistics SA Community Survey 2007
Table 2.12: Unemployment rate and Youth unemployment rate

<table>
<thead>
<tr>
<th>Year</th>
<th>Unemployment Rate</th>
<th>Youth Unemployment Rate: 15-34 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>44.8%</td>
<td>57.5%</td>
</tr>
<tr>
<td>2011</td>
<td>37.4%</td>
<td>47.4%</td>
</tr>
</tbody>
</table>

Source: Statistics SA 2011

According to the table above, the level of unemployment has decreased since 2001 to 2011 from 37.4% to 34.8%. This decrease in the context of unemployment in general is not good enough to absorb possible labour force. The level of youth unemployed has generally been constant over the period from 2001 - 2011. Some of the youth may not be employed as they are of school going age. The need for sustainable economic development cannot be emphasised more as this high unemployment must be reduced.

Table 2.13: Education of aged 20+

<table>
<thead>
<tr>
<th>Year</th>
<th>Higher Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>15.7%</td>
</tr>
<tr>
<td>2011</td>
<td>26.1%</td>
</tr>
</tbody>
</table>

Source: Statistics SA 2011
The number of people with no schooling is decreasing as evidence by the drop from 25.8% to 13.2%. The percentage numbers of people with Matric has marginally increased to 5.1%, whereas those with higher education have significantly increased from 9.7% to 20.7%. The table 12 above shows that more people are entering the schooling system but do not complete Matric, whereas those who complete Matric go on to attend institutions of higher learning. Tswelopele has to appreciate this dynamic in terms of potential recruitment of skills from pool of locally produced human resources.

- **Economic Background**

All primary products produced in the within the Tswelopele local municipality are exported to other regions where they are processed to commercial products for distribution. The result is that one of the challenges for the region is to develop a diversified industrial and commercial base. This can be achieved through a beneficiation process with agriculture products. The process of value adding to our primary products is one of essential elements to broaden our industrial base.

3. **LEGISLATIVE COMPETENCE**

The Constitution of the Republic of South Africa 1996

The Constitution redefined local government as a sphere of government that is distinctive from, yet interdependent and inter-related with provincial and national government. Importantly, the Constitution conferred developmental duties to local government.

21
Public Finance Management Act No. 1 of 1999 (as amended by the Public Finance Management Amendment Act No. 29 of 1999)

To regulate financial management in the national and provincial governments; to ensure that all revenue, expenditure, assets and liabilities of those governments are managed efficiently and

**Effectively**; to provide for the responsibility of persons entrusted with financial management in those governments; and provide for matters connected therewith.

Municipal Systems Act of 2000

The Act introduces changes towards the manner in which municipalities are organized internally, the way they plan and utilize resources, monitor and measure their performance, delegate authority, deliver services and manage their finances and revenue. Critically, the Municipal Systems Act of 2000 formalises a range of alternative service delivery mechanisms that could be used to complement traditional service delivery mechanisms / arrangements used by municipalities.

Municipal Demarcation Act of 1998

The Municipal Demarcation Act of 1998 provides for the re-demarcation of municipal boundaries and this resulted in the rationalization of 843 municipal entities into 284 larger and possible economically viable entities.


The Act defined new institutional arrangements and systems for local government. Importantly, the Act laid a foundation for local government performance management and ward committee systems.


The White Paper on Local Government is a broad policy framework that proposes wholesale changes in the areas of political, administrative structures of local government, electoral systems, demarcations, finances, services, infrastructure development, planning and so forth. The White Paper maps out a vision of developmental local government that is committed to working actively with citizens to identify sustainable ways of meeting their social, economic and material needs and thereby improve their quality of life. Developmental local government envisages the transformation of municipal administrations into rationalized, representative, less bureaucratic, people-centred, efficient, transparent, accountable and responsive entities.
The Fund Raising Act No. 107 of 1978

The Act provides for the declaration of a disaster by the President in order to provide relief to the Victims of disasters such as drought and fire disasters.

Disaster Management Act 57 of 2002

Streamlines and unifies disaster management and promotes a risk reduction approach particularly at provincial and local levels. It eliminates the confusion around disaster declaration and addresses current legislative gaps.

National Disaster Management Framework (Notice 654 of 2005)

The framework provides guidelines for the development of the provincial and municipal disaster management frameworks.

Fire Brigade services Act No. 99 of 1987

Forms an element of disaster management in terms of norms and standards in the prevention of fires or any hazards leading to risks and or disasters.

National Veld and Forest Fires Act No. 101 of 1998

The Act emphasizes the formation of Fire Protection Associations for the purpose of predicting, preventing, managing and extinguishing veld fires.

The National Environmental Management Act of 1999

Provides for environmental management strategies so as to prevent and mitigate environmental disasters.


4. KEY PERFORMANCE AREA 1: INTEGRATED INSTITUTIONAL CAPACITY FOR DISASTER RISK MANAGEMENT
4.1 Institutional arrangements for integrated policy making, direction and the execution of policy and legislation

4.1.1 Objectives

- To establish procedures for the development, approval and implementation of integrated disaster risk management policy, including the making of by-laws, issuing directions and authorisations for the issuing of directives;
- To establish mechanisms which will provide clear direction and allocate responsibilities for the implementation of Disaster Management Act 57 of 2002 (hereinafter referred to as “the Act”);
- To develop a strategic plan for phasing in and maintaining the requirements of the Act and the national disaster management framework; and
- To establish and maintain effective institutional arrangements to ensure adequate operational capacity for the implementation of the requirements of the Act and to enable stakeholder participation which will promote an integrated and co-ordinated approach to disaster risk management in Council’s area.

4.1.2 Arrangements for integrated policy

4.1.2.1 The Council

Council is responsible to ensure the implementation of Disaster Management Act, 2002 for the area of Tswelopele Local Municipality as a whole and makes all policy decisions in relation to disaster risk management.

Having consulted with the district municipality in the area (Sections 55(1)(b) and 55(2) of Disaster Management Act, of 2002), Lejweleputswa District Municipality has primary responsibility for the co-ordination and management of local disasters threatening to occur or occurring within the area of the district municipality (section 54(1)).

1. Action to be taken:

Tswelopele LM and Lejweleputswa District Municipality must consult and determine primary responsibility as per sections 54 and 55 of Disaster Management Act for Tswelopele LM.
4.1.2.2 The policy making process

Action to be taken on matters relating to disasters and disaster risk management policy must be submitted to Tswelopele LM for consideration. DRMC will refer the Action to be taken Tswelopele LM Inter-departmental Disaster Risk Management Committee (IDRMC) for consideration before submitting them to the relevant portfolio committee prior to submitting them to the Council. Policy adopted by Council will then be referred back to DRMC for implementation.

Tswelopele LM DRMC must ensure that Action to be taken on policy include details of any financial, constitutional, human resource or interdepartmental implications before they are submitted to the relevant portfolio committee and the Council.

Figure 2: Tswelopele LM disaster risk management Policy-Making Framework
5. KPA 2: DISASTER RISK ASSESSMENT

5.1 Objective

Establish a uniform approach to assessing and monitoring disaster risk that will inform disaster risk management planning and disaster risk reduction undertaking by organs of state and other role players.

5.2 Monitoring Disaster Risks

Disaster risks are not static; they change seasonally and over time. Risk monitoring system involves:

- Hazard tracking: hazard-tracking systems monitor the physical phenomena that can trigger disaster events. They include systems that provide seasonal and early warning information on approaching adverse weather conditions.
- Vulnerability monitoring: this system tracks the ability of areas, communities, households, critical services and natural environments to resist and withstand external threats.
- Disaster event tracking: this system monitors changing patterns in disaster risk.

5.3 Risk Analysis

Table 2.14 – List of Major Hazards

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Potential Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Disease</td>
<td>Most animal disease emergencies present little direct threat to human health; however the cost in purely economic terms may be particularly significant. Many rural residents rely on their animals for subsistence, and there are a number of larger animal-based industries in the Province.</td>
</tr>
<tr>
<td>Flood/Severe Storm, Rainfall</td>
<td>Loss of life, (loss of breadwinner), severe injury, loss of homes, loss of stock, loss of income, increased risk of disease.</td>
</tr>
<tr>
<td>and Landslides</td>
<td></td>
</tr>
<tr>
<td>Hazardous Material</td>
<td>Loss of life, (loss of breadwinner), severe injury, evacuation of large areas, fires, explosions, ground and air pollution Road and rail transport travelling through the province carrying dangerous chemicals and corrosive substances poses the threat of a significantly dangerous accident.</td>
</tr>
<tr>
<td>Human Epidemic</td>
<td>Loss of life, (loss of breadwinner), extended illness, loss of employment because of absenteeism, over-taxing of the medical response capability.</td>
</tr>
</tbody>
</table>
### Major Infrastructure Failure
- Loss of electrical power, causing: lack of heating; lack of refrigeration; limited fuel supplies; loss of employment through closures of industry.
- Loss of communications, leading to severe impact on the Provincial disaster co-ordination ability. Loss of telephone, fax, computer (internet), automated teller machines, electronic sales.

### Major Transportation Failure
- Transport could involve aircraft, trains, tour coaches, school buses, taxis or heavy transport vehicles.

### Water Contamination
- Increased disease, loss of life, loss of stock, pressure on health facilities.

### Heat wave
- Excessive drought, loss of crops, diseases, loss of life.

### Extreme cold
- Loss of livestock, loss of crops, diseases.

### Snow
- Economic loss, loss of human life, livestock and infrastructure.

### Hazard mapping of the Area
- GIS-based mapping of possible flood levels
- Identification of areas susceptible to landslides
- Satellite and aerial photography
- Identification of areas susceptible to erosion
- Identification of areas most susceptible to fire
- Updated population information
- Identification of flood plane areas susceptible to flooding as a result of a dam failure

### 5.4 Risk Evaluation

The purpose is to rank the risks from highest to lowest so that a priority for treatment can be assigned.

### Key Steps

- Decide on risk acceptability utilising the risk rating and risk evaluation criteria
- Rank the risks in order of priority for treatment
- Document all unacceptable risk

### 5.5 Levels of risks
Table 3  Level of Risk – Qualitative Analysis Matrix

<table>
<thead>
<tr>
<th>Consequence/ Likelihood</th>
<th>Insignificant 1</th>
<th>Minor 2</th>
<th>Moderate 3</th>
<th>Major 4</th>
<th>Catastrophic 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (almost certain) 1:1</td>
<td>H</td>
<td>H</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>B (likely) 1:10</td>
<td>M</td>
<td>H</td>
<td>H</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>C (possible) 1:50</td>
<td>L</td>
<td>M</td>
<td>H</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>D (unlikely) 1:100</td>
<td>L</td>
<td>L</td>
<td>M</td>
<td>H</td>
<td>E</td>
</tr>
<tr>
<td>E (rare) 1:500</td>
<td>L</td>
<td>L</td>
<td>M</td>
<td>H</td>
<td>H</td>
</tr>
</tbody>
</table>

E: extreme risk; immediate action required  H: high risk; senior management attention needed
M: moderate risk; management responsibility must be specified  L: Low risk; manage by routine procedures
Table 3.1: Level of Risk –

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Vulnerable Sector</th>
<th>POTENTIAL RISK</th>
<th>Likelihood</th>
<th>Consequence</th>
<th>Level of risk</th>
<th>Risk evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Hazards</td>
<td>All Sectors</td>
<td>• Inadequate (or unidentified) disaster management experience or expertise within the district.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Inadequate response capability within the Emergency Services agencies in the district.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Inadequate response times to rural areas of the district.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lack of communication facilities in rural areas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lack of effective roads infrastructure in the more remote rural areas.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>• Misunderstanding by most agencies relative to the meaning of the term ‘disaster management’.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>• Traditional practices. (Traditional leaders allocating land for homes in areas devoid of infrastructure; non-use of sanitation facilities, leading to water pollution and disease; acceptance of the requirement to walk long distances to source water.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>These risks are generic, and have not been analyzed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural/Veld Fires</td>
<td>People</td>
<td>• Informal settlements have an increased vulnerability to fire because of the close quarters and lack of access.</td>
<td>B</td>
<td>4</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Economy</td>
<td>• Loss of stock</td>
<td>B</td>
<td>4</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td></td>
<td>People</td>
<td>• Loss of roofing, rendering housing uninhabitable</td>
<td>B</td>
<td>3</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Impact</td>
<td>Probability</td>
<td>Severity</td>
<td>Likelihood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-------------</td>
<td>----------</td>
<td>------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Pregnant women, young children, the elderly and the disabled unable to evacuate in time</td>
<td>B</td>
<td>3</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Economy</strong></td>
<td>Loss of crops</td>
<td>B</td>
<td>3</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Economy</strong></td>
<td>Loss of grazing land</td>
<td>B</td>
<td>2</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>Power transmission lines/poles may be damaged or destroyed.</td>
<td>C</td>
<td>3</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Air pollution causing extra people to seek medical care</td>
<td>B</td>
<td>3</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Death/severe injury</td>
<td>B</td>
<td>3</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>Loss of communication lines/poles, affecting disaster information and co-ordination</td>
<td>B</td>
<td>3</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>Power sub-stations may be damaged or destroyed</td>
<td>C</td>
<td>3</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Psychological well being of the community will be affected as a result of the losses suffered.</td>
<td>B</td>
<td>3</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Psychological well being of the community will be affected as a result of the losses suffered.</td>
<td>B</td>
<td>3</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Natural Environment</strong></td>
<td>Ground erosion due to loss of grass/vegetation cover</td>
<td>C</td>
<td>3</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crime</strong></td>
<td>Loss of power will see an increase in criminal activity</td>
<td>C</td>
<td>2</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>Destruction of schools affecting continuing education</td>
<td>C</td>
<td>2</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>Smoke will block transport routes</td>
<td>C</td>
<td>1</td>
<td>L</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flood, Storm Severe Rainfall, Landslide</strong></td>
<td>People</td>
<td>People will not be able to evacuate the area</td>
<td>B</td>
<td>4</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>Areas will be cut off by washed out roads, preventing access by response agencies.</td>
<td>A</td>
<td>3</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Informal settlement will be destroyed, leaving large numbers of people homeless.</td>
<td>B</td>
<td>4</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Sanitation and health problems.</td>
<td>A</td>
<td>3</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Women left to care for extended families with no means of transport out of the area.</td>
<td>A</td>
<td>4</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Death of breadwinner, causing long-term financial</td>
<td>C</td>
<td>4</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Problem</td>
<td>Severity</td>
<td>Impact</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-------------------------------</td>
<td>--------------------------------------------------------------------------</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economy</td>
<td>Significant stock losses.</td>
<td>C</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People</td>
<td>Loss of crops, affecting sustainability of subsistence food supply production</td>
<td>C</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economy</td>
<td>Significant crop losses.</td>
<td>C</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People</td>
<td>Psychological well being of the community will be affected as a result of the losses suffered</td>
<td>A</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Built Environment</td>
<td>Buildings and facilities destroyed or damaged.</td>
<td>B</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People</td>
<td>Overcrowding of medical facilities will increase disease.</td>
<td>B</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People</td>
<td>Overcrowding of people in evacuation centres may lead to further disease outbreaks</td>
<td>B</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People</td>
<td>Loss of income and assets.</td>
<td>C</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Loss of power</td>
<td>B</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Environment</td>
<td>Environmental damage, including due to inappropriate agricultural practices.</td>
<td>C</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People</td>
<td>Death or serious injury will occur from drowning, lightning strike, flying debris or structural collapse.</td>
<td>C</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Transport facility damage including road and rail bridges, roads, airfields and railways.</td>
<td>C</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Loss of communications.</td>
<td>C</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snow</td>
<td>People will not be able to evacuate the area</td>
<td>B</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>Areas will be cut off snow, preventing access by response agencies.</td>
<td>A</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economy</td>
<td>Significant crop losses.</td>
<td>C</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People</td>
<td>Loss of crops, affecting sustainability of subsistence food supply production</td>
<td>C</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economy</td>
<td>Significant livestock/game losses</td>
<td>C</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People</td>
<td>Psychological well being of the community will be affected as a result of the losses suffered</td>
<td>A</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Loss of communications.</td>
<td>C</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Power failure</td>
<td>C</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Drought

| People | ■ Sanitation and health problems | A | 3 | E |
|        | ■ Significant stock losses       | C | 4 | E |
| People | ■ Loss of crops, affecting sustainability of subsistence food supply production | C | 4 | E |
| Economy | ■ Significant crop losses | C | 4 | E |
| People | ■ Psychological well being of the community will be affected as a result of the losses suffered | A | 3 | E |
| People | ■ Loss of income and assets | C | 3 | H |
| Natural Environment | ■ Environmental damage, including due to inappropriate agricultural practices | C | 3 | H |

### Major Infrastructure Failure

| Water supply | ■ Water supply pumping facilities will be rendered inoperable. | A | 2 | H |
| Management | ■ Disaster communications facilities will be rendered inoperable. | A | 2 | H |
| People | ■ Fuel supply facilities will be rendered inoperable. | A | 2 | H |
| Management | ■ Telephone landline and cell communications will be rendered inoperable. | A | 2 | H |
| Management | ■ Base radio transmitter stations relying on power will be rendered inoperable. | A | 2 | H |
| Economy | ■ Electronic banking facilities will be rendered inoperable. | A | 2 | H |
| Infrastructure | ■ Business and industry refrigeration and cooling facilities will be rendered inoperable. | A | 2 | H |
| People | ■ Household refrigeration and cooling facilities will be rendered inoperable. | A | 2 | H |
| Economy | ■ Computer network facilities will be rendered inoperable. | A | 2 | H |
| Sewerage | ■ Sewerage pumping facilities will be rendered inoperable. | A | 2 | H |
| People | ■ Loss of power and communications facility will see an increase in crime. | C | 2 | M |

### Human Epidemic

<p>| People | ■ Substantial loss of life. | A | 4 | E |
| People | ■ Low immunization rates in | A | 4 | E |</p>
<table>
<thead>
<tr>
<th>Natural Environment</th>
<th>People</th>
<th>Psychological effects on the community.</th>
<th>A</th>
<th>4</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy</td>
<td>People</td>
<td>Loss of income within the province</td>
<td>B</td>
<td>4</td>
<td>E</td>
</tr>
<tr>
<td>People</td>
<td>People</td>
<td>Vector/vermin contact will spread the epidemic throughout the Municipality and beyond</td>
<td>B</td>
<td>3</td>
<td>H</td>
</tr>
<tr>
<td>Economy</td>
<td>People</td>
<td>Stigma being attached to the province accompanied by a tourist and visitor downturn.</td>
<td>C</td>
<td>2</td>
<td>M</td>
</tr>
<tr>
<td>Water Contamination</td>
<td>People</td>
<td>Contaminated water supplies will cause disease such as cholera and dysentery</td>
<td>A</td>
<td>4</td>
<td>E</td>
</tr>
<tr>
<td>People</td>
<td>People</td>
<td>Shortages of potable water supplies will aggravate the situation</td>
<td>A</td>
<td>3</td>
<td>E</td>
</tr>
<tr>
<td>Management</td>
<td>People</td>
<td>Resultant epidemics will place a great strain on the District’s health facilities</td>
<td>A</td>
<td>3</td>
<td>E</td>
</tr>
<tr>
<td>Hazardous Material</td>
<td>Natural Environment</td>
<td>Pollution of the water table.</td>
<td>B</td>
<td>4</td>
<td>E</td>
</tr>
<tr>
<td>Natural Environment</td>
<td>People</td>
<td>Human exposure to toxic chemicals resulting in serious harm or death.</td>
<td>B</td>
<td>2</td>
<td>H</td>
</tr>
<tr>
<td>Natural Environment</td>
<td>People</td>
<td>Pollution of the atmosphere will occur from the release of hazardous material.</td>
<td>A</td>
<td>2</td>
<td>H</td>
</tr>
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KPA 3: DISASTER RISK REDUCTION

6.1 Objective

The objective is to ensure that all disaster risk management stakeholders develop and implement integrated disaster risk management plans and risk reduction programmes in accordance with approved frameworks.

6.2 Disaster Risk Reduction Principles

6.2.1 Disaster Prevention

It refers to actions that provide outright avoidance of the adverse impact of hazards and related environmental, technological and biological disasters.

6.2.2 Disaster Mitigation

It refers to structural and non-structural measures that are undertaken to the limit the adverse impact of natural hazards, environmental degradation and technological hazards on vulnerable areas, communities and households.

HAZARD AND RISK REDUCTION STRATEGIES

Table 3.2. Hazard and Risk Reduction Strategies

<table>
<thead>
<tr>
<th>HAZARD</th>
<th>POTENTIAL RISK</th>
<th>RISK REDUCTION STRATEGIES</th>
</tr>
</thead>
</table>
| Human epidemics | Substantial loss of life. | - Awareness programmes: types of diseases e.g. malaria, cholera, HIV/AIDS, Disease surveillance, health programmes, mobile clinics, Social Welfare programmes  
- Ensure that service providers have contingency plans in place |
| Low immunization rates in the province will increase the likelihood of an epidemic occurring | - Health awareness, medical effects of non immunization e.g. polio, measles  
- Ensure that department of health has contingency plans in place. |
| Psychological effects on the community | - Awareness programme: Sensitize communities on the effects of epidemics, counseling and Rehabilitation. 
- Department of health to ensure contingency plans are in place. |
| Loss of income within the province | - Identify potential industry/commercial risk  
- Awareness programmes: address economic impact, train replacement employees.  
- Promote good health practices Effects and treatment of epidemic outbreaks.  
- Contingency planning e.g. Streamlining services to meet budgetary constraints. |
### Vector/vermin contact will spread the epidemic throughout the province and beyond.
- Awareness programmes: identification of diseases, Monitoring and surveillance.
- Preventing measures in respect of vermin,
- Pest control and good house keeping: clear breeding sites etc.

### Stigma being attached to the municipality accompanied by a tourist and visitor downturn.
- Awareness: People need to know the affects and facts.
- Good public relations and marketing programmes to be promoted.

### Major infrastructure failure

<table>
<thead>
<tr>
<th>Major infrastructure failure</th>
<th>Water supply pumping facilities will be rendered inoperable.</th>
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<tbody>
<tr>
<td></td>
<td>Awareness: Maximum use of available recourses, water sanitation, personal hygiene and health awareness Identify alternative safe water supplies e.g. bore holes, Farms dams, rivers and springs and ensure service providers have contingency plans in place Encourage installation of backup power.</td>
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<tr>
<td></td>
<td>Awareness programme: Maximize use of available fuel resources e.g. rationing, Encourage the use of public transport, rail etc Identify alternative suppliers Encourage strategic suppliers to provide emergency backup systems</td>
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<td>Service providers to have contingency plans in place for e.g. radio, satellite phones.</td>
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<th>Major infrastructure failure</th>
<th>Business and industry refrigeration and cooling facilities will be rendered inoperable</th>
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<td>Awareness programmes: contamination of foodstuffs Identify high risk areas e.g. meat storage, mortuary’s Identify alternative refrigeration facilities e.g. mobile refrigeration Maintain and upgrading of infrastructure</td>
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<th>Major</th>
<th>Accidents</th>
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<td>Awareness/law enforcement e.g. regular safe inspections.</td>
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</table>
| **Transportation Incident** involving aircraft, trains, coaches or taxi vehicles will result in death or serious injury to a large number of people. | - Road and vehicle safety principles to be adopted by drivers and passengers.  
- Local Municipalities and service providers to have contingency plans in place  
- Regular interaction between role players to identify risks.  
- Identify hospitals with the capacity and expertise to cope with such major incidents. |
| --- | --- |
| The bad mechanical condition of vehicles traversing Municipality roads will cause road accidents. | - Awareness programmes: Road and vehicle safety principles to be adopted  
- By drivers and passengers.  
- Co-ordination/Implementation of law enforcement Road and Vehicle safety principles to be adopted by drivers and passengers. |
| Inappropriate driver behavior will cause road accidents. | - Awareness programmes: Road and vehicle safety principles to be adopted  
- Adopted by drivers and passengers.  
- Co-ordination/Implementation of law enforcement. |
| Deteriorating road conditions will cause road accidents. | - Awareness e.g. Signage  
- Law enforcement to combat e.g. overloading  
- Planned Maintenance |
| **Water Contamination** Contaminated water supplies will cause disease such as cholera and dysentery | - Awareness programmes: Proper industrial and commercial water management procedures, good hygiene and sanitation practices, household water treatment options e.g. bleach  
- Responsible agencies DWAF department of environmental affairs, Health and water affairs to have contingency plans in place.  
- Regular monitoring and surveillance  
- Identify alternative of water. |
| Shortage of potable water supplies will aggravate the situation. | - Awareness e.g. purification of alternatives water resources. Encourage rain water harvesting.  
- Department of water affair/water authority to have contingency plans in place.  
- Identify alternative potential water resources e.g. boreholes, dams (database) spring protection. |
| Resultant epidemics will place a great strain on the District’s health facilities. | - Department of Health to have contingency plans in place e.g. identify district health facilities and call support from other agencies |
| **Animal Disease** Loss of export capability. | - Awareness programmes e.g. State controlled diseases, symptoms of animal disease  
- Ensure that Vetenary services have contingency plans in place.  
- Identify disposal sites and guard disposal sites |
| Cross contamination | - Awareness programmes e.g. Proper fencing, quarantine procedure  
- Ensure that Vetenary services have contingency plans in place. |
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<td>- Identify alternative potential water resources e.g. boreholes, dams (database) spring protection.</td>
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<td>- Department of Health to have contingency plans in place e.g. identify district health facilities</td>
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<td>- and call support from other agencies</td>
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### Tswelopele Disaster Risk Management Plan

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### Drought

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<tr>
<th>Reduction or loss of natural or reticulated water for human and stock consumption</th>
<th>Awareness programmes e.g. do not cultivate or drain wetlands and Vlei’s. Control of alien vegetation i.e. bug weed, wattle, lantana and paraffin weed. Protect springs. Encourage rainwater harvesting and investment in water tanks Planning (IDP) for alternative reliable water sources e.g. Dams, covered reservoirs, boreholes and springs Continuous maintenance of natural and reticulated water sources Departments of Agriculture and DWAF to have contingency plans in place</th>
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<tr>
<td>Loss of crops</td>
<td>Awareness programmes: Good farming practices, contour ploughing, minimum tillage, crop rotation. Encourage planting drought resistant varieties. Identify responsible agency and ensure to have contingency plans in place</td>
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<tr>
<td>Loss of grazing</td>
<td>Awareness programmes: Good farming practices e.g. back burning, fire breaks, crop rotation and prevention of soil erosion. Identify alternative grazing. Proper clearing of encroaching alien vegetation e.g. Back burning</td>
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<tr>
<td>Loss of livestock</td>
<td>Awareness programmes: e.g. Fire breaks, Good grazing practice</td>
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<td>Event</td>
<td>Plan</td>
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| Fire  | Establish fire services.  
  - Awareness programmes: Good House Keeping  
  - Encourage proper spacing, use of electrical equipment, use of cooking apparatus and storage of flammable liquid.  
  - Proper clearing of encroaching vegetation and disposal of refuse.  
  - Encourage specialized institution to present safety audits.  
  - Provide fire fighting training for volunteers and basic equipment  
  - Proper policing to avoid further influx  
  - Plan alternative accommodation e.g. include development of housing as priority in the IDP |
| Loss of stock and game | Awareness programmes: e.g. Agriculture advice to be give fire breaks, Good grazing practice e.g. Designated areas for grazing  
  - Training of fire fighting volunteers |
| Loss of roofing, thatch, rendering housing uninhabitable | Awareness programmes: Encourage good building practices  
  - e.g. use of proper roofing materials  
  - Proper clearing encroaching vegetation e.g. Back burning.  
  - Training of fire volunteers |
| Pregnant women, young children the elderly and the disable unable to evacuate in time. | Awareness programmes: Fire behavior e.g. Reading wind direction and evacuation procedures.  
  - Early warning systems e.g. Media broadcast, pamphlets and load halers  
  - Identification of places of safety.  
  - Identify alternative access routes  
  - Training of fire fighting Volunteers |
| Loss of crops | Awareness programmes: Good farming practices e.g. Back burning, fire breaks and crop rotation  
  - Training of fire fighting Volunteers |
| Loss of grazing land | Awareness programmes: Good farming practice e.g.  
  - Establishment of FPAS (Fire Protection Associations)  
  - Maintenance of gas pipes, Awareness campaigns fire protection systems contingencies plans for industries |
| Flood, Storm, Severe Rainfall, Landslip | Identify vulnerable sectors informal/formal  
  - Awareness programmes: Pre-identified high ground shelter, leave unnecessary item. Take food etc.  
  - Consider relocation of informal temporary shelter  
  - Pro-active measures of mitigation (gabion baskets)  
  - Early warning systems Pre-identify alternative accommodation  
  - Include in IDP for future development |
| People will not be able to evacuate the area | Identify vulnerable sectors informal/formal  
  - Awareness programmes (proper drainage ext)  
  - Identify alternative routes  
  - Planning, positioning and quality of roads  
  - Pre-identify alternative resources in terms of access (Rubber duck ext) for floods only  
  - Include IMS protocol in conjunction with department of transport  
  - Include IDP |
| Areas will be cut off by washed out roads, bridges etc, preventing access by response agencies. | Identify vulnerable sectors informal/formal  
  - Awareness programmes (proper drainage ext)  
  - Identify alternative routes  
  - Planning, positioning and quality of roads  
  - Pre-identify alternative resources in terms of access (Rubber duck ext) for floods only  
  - Include IMS protocol in conjunction with department of transport  
  - Include IDP |
| Building (Public and Private) and informal settlements will be destroyed, leaving large number of people homeless. | • Awareness in terms of building codes in rural areas. (Quality of homes) and (management of household possessions) • Pre-identify alternative accommodation/Maintain database of resources. Exp (Food distribution plan) • Include re-housing in development programme. (IDP) |
| Sanitation and health problems. | • Awareness programmes: Promote the treatment of available water resources and good personal hygiene practices. Prevention of water born disease. e.g. (Malaria, Cholera and diarrhea) • Identify responsible and ensure contingency plans in place |
| Women left to care extended families with no means of transportation out of the affected area | • Identify vulnerable sectors informal/formal • Identify alternative routes • Resources in terms of access |
| **Hazmat Incidents** | Pollution of the water table | • Awareness programmes: the effect of various chemical and precautionary measures, identify specialized and alternative treatment facilities and places of safety  
• Local Authority, Environmental affairs/DWAF to have contingency plans in place.  
• Identify Hazmat Task Team |
| --- | --- | --- |
| Pollution of the soil | • Awareness programmes: the effect of various chemical and precautionary measures, identify specialized and alternative treatment facilities and places of safety  
• Local Authority, Environmental affairs/DWAF to have contingency plans in place.  
• Identify Hazmat Task Team |
| Human exposure to toxic chemical resulting in serious harm or death. | • Awareness programmes: the effect of various chemical and precautionary measures, identify specialized and alternative treatment facilities and places of safety  
• Local Authority, Environmental affairs/DWAF to have contingency plans in place.  
• Identify Hazmat Task Team |
| Pollution of the atmosphere will occur from the release of hazardous material. | • Awareness programmes: the effect of various chemical and precautionary measures, identify specialized and alternative treatment facilities and places of safety  
• Local Authority, Environmental affairs/DWAF to have contingency plans in place.  
• Identify Hazmat Task Team |
| **Snow** | People will not be able to evacuate the area | • Identify vulnerable sectors informal/formal  
• Awareness programmes: Pre-identified high ground shelter, leave unnecessary item. Take food etc.  
• Consider relocation of informal temporary shelter  
• Pro-active measures of mitigation (gabion baskets)  
• Early warning systems Pre-identify alternative accommodation  
• Include in IDP for future development |
| Areas will be cut off by washed out roads, bridges etc, preventing access by response agencies. | • Identify vulnerable sectors informal/formal  
• Awareness programmes Identify alternative routes  
• Planning, positioning and quality of roads  
• Pre-identify alternative resources in terms of access Include IMS protocol in conjunction with department of transport  
• Include IDP |

**INTERGRATION OF DISASTER RISK REDUCTION INTO IDP AND SDP**

- Disaster risk reduction efforts are medium to long-term multi-sectoral efforts focused on vulnerability reduction and must be incorporated into ongoing IDP projects, processes, programmes and structures.
- Municipal Disaster Management Unit will establish mechanisms in association with spatial planners to ensure that relevant spatial information informs disaster risk reduction planning.
6. KPA 4: RESPONSE AND RECOVERY

7.1 Objective

The objective of response and recovery is to ensure effective and appropriate disaster response and recovery by the Municipality.

FIG. 2. DISASTER RESPONSE AND RECOVERY
7.2 Roles and Responsibilities

The reaction units are responsible for specific duties and tasks on a day-to-day basis and during an event or disaster. The responsibilities mentioned below are broad and more detail will have to be given to each reaction unit as soon as the Disaster Management Plan is finalized. The following roles and responsibilities have been identified:

<table>
<thead>
<tr>
<th>SAFETY AND SECURITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>To ensure the safety and rights of all residents</td>
</tr>
<tr>
<td>- Law enforcement</td>
</tr>
<tr>
<td>- Crowd control</td>
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<tr>
<td>- Investigating of crime</td>
</tr>
<tr>
<td>- Reporting to responsible chief</td>
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</tbody>
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<table>
<thead>
<tr>
<th>ACCOMMODATION</th>
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<tbody>
<tr>
<td>Establishment of collection points and provision of accommodation Emergency accommodation</td>
</tr>
<tr>
<td>- Establishing of collection points and maintenance thereof</td>
</tr>
<tr>
<td>- Investigation of houses, schools, hail, etc. that can be utilized as emergency accommodation</td>
</tr>
<tr>
<td>- (contract + cost)</td>
</tr>
<tr>
<td>- Registering of people to whom accommodation was provided</td>
</tr>
<tr>
<td>- Report to responsible chief</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ESSENTIAL SERVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>To provide water, electricity and sanitation to all</td>
</tr>
<tr>
<td>- Provision of water at collecting points and control centre Pumping of water in case of power failure</td>
</tr>
<tr>
<td>- Organizing and receiving of equipment borrowed</td>
</tr>
<tr>
<td>- Return of borrowed equipment</td>
</tr>
<tr>
<td>- Removal of refuse</td>
</tr>
<tr>
<td>- Organize additional teams to render services like sewerage and refuse removal</td>
</tr>
<tr>
<td>- Contacting Eskom and the Defence Force for assistance Report to responsible chief</td>
</tr>
<tr>
<td>- Involve unions</td>
</tr>
<tr>
<td>- Identify all resources in area (water, equipment)</td>
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<tr>
<td>- Water level</td>
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</tbody>
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<table>
<thead>
<tr>
<th>TRAFFIC CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>To do traffic control during emergency situations</td>
</tr>
<tr>
<td>- Control of traffic</td>
</tr>
<tr>
<td>- Determining alternative routes</td>
</tr>
<tr>
<td>- Closing of roads’ streets</td>
</tr>
<tr>
<td>- Communicating with provincial traffic</td>
</tr>
<tr>
<td>- Controlling visitors at hospital and key points</td>
</tr>
<tr>
<td>- Report to responsible chief</td>
</tr>
<tr>
<td>- Control at JOC</td>
</tr>
<tr>
<td>- Cleaning of roads</td>
</tr>
<tr>
<td>- Fire fighting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HEALTH SERVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>To provide medical treatment and care to the injured</td>
</tr>
<tr>
<td>- Organize with nearby areas for the assistance of First Aid groups</td>
</tr>
<tr>
<td>- To arrange for transfer of injured people to the medical points or hospitals - EMS</td>
</tr>
<tr>
<td>- Survey of qualified people</td>
</tr>
<tr>
<td>- Arrangements with private doctors</td>
</tr>
</tbody>
</table>
SPIRITUAL CARE

Spiritual care and condolence to people of community

- Caring and rehabilitation of the needy, disabled and injured people and their families
- Registering of mentioned people
- Establishing of teams to assist in caring
- Conducting of funerals
- Conducting of church services
- Visits to injured and grieved people
- Spiritual care and rehabilitation
- Report to responsible chief
- Close co-operation with health & acc. and food & clothing

COMMUNICATION

Responsible for the establishment and maintenance of all prescribed communication channels between the control centre and other sections.

- Receive and installation of radios — education
- Maintaining of telephone lines
- Testing of alarm systems
- Receive of all information and distribution thereof
- Reports to media, radio and TV after approval by Chief Disaster Management
- Informing councilors and community about situation
- Compilation of statistics and reports
- Reporting to Chief Disaster Management

EDUCATION

To educate the community towards the prevention of disasters and the mitigation thereof.

- Collecting disaster related material and information.
- Integration of community education programme
- Report to responsible chief
- Incorporating data in material
- Lessons learned
- Providing accommodation

FINANCES

The collection of funds and the control thereof,

- Establishment and control of finance centre within joint operational centre.
- Liaisons with higher tier government, private organizations and NGO’s for funding.
- Agreements with service providers
- Negotiate prices

EVACUATION

To ensure that transport is being provided during a time of emergency and assist with the evacuation of premises

- Transport of ragged people to collection points
- Transport of food and clothing to medical posts and places identified for accommodation
- Report to responsible chief

EMERGENCY SERVICES

To ensure that, during an emergency situation or a disaster, all essential services are maintained, within the area of jurisdiction of the municipality, especially at the collection points.

- Establishing and training of emergency personnel
- Transport of patients
- Avail information regarding medical emergency recourses.
- Identifying medical stations, together with accommodation officer
- Report to responsible chief
- Co-ordinate air support
- Providing rescue services

### FOOD AND CLOTHING

To provide care and rehabilitation to community in times of emergency
- Securing food and clothing donations
- Establishment of dispensing centre
- Registration of beneficiaries
- Strict control over stock
- Replenishing stock
- Reporting to responsible chief
- Delivery of welfare services
- Validation of beneficiaries

### ANIMAL CARE

Ensure the safety, protection and movement of animals
- Records of animal migration
- Care for injured animals
- Securing feed and emergency camps
- Reporting to responsible chief

### 7.3 Disaster Management Role-players

Churches,
Civil aviation,
Department of Agriculture (DoA)
Department of Education,
Department of Foreign Affairs,
Department of Health (DoH),
Department of Home affairs,
Department of Housing,
Department of Land Affairs,
Department of Local Government and Housing,
Department of Safety and Security
Department of Social Welfare,
Department of Transport (DoT),
Department of Water Affairs and Forestry,

District Municipality,
Tswelopele Municipality,
Emergency services,
Eskom,
Farm workers,
Organised Agriculture
Fire Brigade,
Traditional healers,
2. Action to be taken:
Tswelopele LM Council should agree on the above policy-making framework and pass a Council resolution in this regard.

10.1.1 Arrangements for direction and execution of policy
10.1.2 Tswelopele Local Municipality Disaster Risk Management Centre (Tswelopele LM DRMC)

Although the Act does not require a disaster risk management centre (DRMC) to be established within a local municipality, it is recommended in the national framework that all local municipalities identify appropriately qualified staff in their employ to serve as their disaster risk management focal point. The framework further suggests that this person serve on the relevant IDP structures due to the relationship between disasters and development.

In order to ensure continuous monitoring of progress with regard to the execution of the provisions of the Act the centre responsible for disaster risk management (Disaster risk management Centre) within the municipality must also submit reports in an agreed format on its performance for consideration to every meeting of the Public Safety Portfolio Committee and Lejweleputswa District DRMC.

10.1.3 Establishment and physical location of the office

In terms of the Act there is no requirement for local municipality to establish a disaster risk management centre or office. It is however recommended within the National Disaster Management Framework that disaster risk management focal points be appointed or identified to deal with issues pertaining to disaster risk management.

10.1.4 Location of the disaster risk management function within Council’s administration

In terms of section 45(1) (b) of the Act the district disaster risk management centre exercises its powers and performs its duties in accordance with the directions of the municipal council and in accordance with the administrative instructions of the Municipal Manager. On this basis, it is recommended that Tswelopele LM DRMC be handled in a similar manner.

The proposed location of the centre within Council’s administration and reporting lines for direction and administrative purposes are illustrated in the chart below:
Figure 4: Proposed (2012) placement of disaster risk management function within the structure of Tswelopele LM

10.1.5 Key responsibilities of Tswelopele LM DRMC

Key responsibilities of Tswelopele LM DRMC will be as follows:

- Establish and maintain adequate institutional capacity to enable the implementation of the requirements of the Act which will promote an integrated and co-ordinated approach to disaster risk management in Council’s area subject to the agreement on primary responsibility with Lejweleputswa District DRMC (see section 54 of the Disaster risk management Act);
- Implement measures to conduct comprehensive and progressive assessments which will contribute to the development of disaster risk profiles which are current and relevant, and which will inform planning and the implementation of risk reduction strategies;
- Facilitate the development, implementation and maintenance of disaster risk management plans, programmes and practices for strategic disaster risk reduction which will ensure that individuals, households, communities, infrastructure and the environment in council’s area are resilient to disaster risk;
- Facilitate the development and implementation of contingency plans to ensure rapid, appropriate and effective disaster response and recovery to disasters which occur or are threatening to occur in council’s area;
- Develop, establish and maintain a comprehensive information management system, an effective communication system and an accessible public awareness and information service;
- Make provision for accessible training, education and research opportunities for disaster risk management stakeholders in the municipality;
- Make action to be taken regarding the funding for disaster risk management in the council’s area of jurisdiction and initiate and facilitate efforts to make such funding available;
- Develop, implement and maintain dynamic mechanisms for monitoring, evaluating and continuously improving disaster risk management practice, projects and programmes;
- Commissioning the development and maintenance of a disaster risk profile for council’s area which is current and relevant;
- Ensuring the development, implementation and maintenance of comprehensive disaster risk reduction planning and implementation for council’s area by the relevant municipal organs of state and other municipal entities/departments within council’s administration, and other municipal entities operating within council’s jurisdiction;
• Identifying cross boundary disaster risks which pose a threat to council’s area or to neighbouring jurisdictions and facilitating the development, implementation and maintenance of plans to manage such risks;

• Establishing and maintaining an information management system which includes the development and maintenance of a database linked to a Geographical Information System (GIS); hazard maps and risk maps informed by the disaster risk profile; a register of volunteers; a communication directory and a record of available resources;

• Serving as a conduit and repository for information concerning disasters, impending disasters and disaster risk management in general;

• Acting in an advisory and consultative capacity on issues concerning disasters and disaster risk management in the area by the establishment of Tswelopele LM Disaster risk management Advisory Forum;

• Establishing and maintaining ward disaster risk management structures to deliver services in terms of all of the activities associated with disaster risk management to communities in the areas of the thirty one (31) wards; and to integrate them into the disaster risk management arrangements for the municipality;

• Establishing and maintaining co-operative partnerships with multi-sectoral role players including the private sector in accordance with Chapter 3 of the Constitution and the Integrated Development Plan objectives;

• The establishment, management and maintenance of a unit of volunteers;

• Ensuring adequate capacity to deal with rapid, co-ordinated and effective disaster response and recovery by:
  - facilitating the development, implementation and maintenance of contingency plans for disasters which have been identified in the risk profile as priority risks for council’s area;
  - facilitating the development and implementation of standard operating protocols and field operations guides for the various activities associated with disaster response and recovery based on joint standards of practice amongst all relevant role players to ensure rapid and effective responses;
  - developing and maintaining a disaster response and recovery plan incorporating the contingency plans, response and recovery protocols and field operations guides;
  - developing guidelines and the capacity to assess the magnitude and severity or the potential magnitude and severity when a disaster occurs or threatens to occur and determining whether the event should be classified as a local disaster;
  - developing guidelines and the capacity (including in communities known to be at risk to disasters) for conducting initial assessments of damage and adverse effects and the immediate humanitarian needs of those affected;
  - mobilising the necessary resources to provide immediate humanitarian assistance and to restore or make temporary arrangements to maintain critical
lifeline services, mission critical systems and business continuity during and immediately after a disaster occurs or when a disaster is threatening to occur; and

- Providing and co-ordinating physical support to communities and the mission critical systems on which they depend, in the event of those disasters which are classified as local disasters.

- Maintaining comprehensive records, documentation and reports of disaster response and recovery operations.

10.1.6 The Internal departments (municipal organs of state) and other municipal entities within the administration of Tswelopele LM

Each department and other municipal entity within Council’s administration must, in terms of section 2 of the Act, assess any national legislation applicable to its function and must advise Tswelopele LM DRMC on the state of such legislation. Disaster risk management activities must be incorporated into the routine activities of each municipal department and of any other municipal entities and their substructures.

10.1.7 Assignment of responsibilities

Disaster Manager and the heads of each department in council’s organisational structure will serve as the assigned disaster risk management nodal/focal point for the department and as such will represent the department on Tswelopele LM Inter-departmental Disaster Risk Management Committee (Tswelopele LM IDRMC) and will be responsible for all aspects of planning and operations relevant to the functional area in that department or entity.

The responsibilities of heads of departments in this regard include:

- facilitating and co-ordinating the relevant department or entity’s disaster risk management planning and operational activities for risk reduction and for response and recovery;
- ensuring that the planning and operations are consistent with the requirements of the Act and Lejweleputswa District disaster risk management framework;
- ensuring the integration and alignment of the entity’s planning and operations with that of the district, provincial and national organs of state and other institutional role players;
- ensuring the integration of the risk reduction and response and recovery planning and operations with councils Integrated Development Planning process, the Spatial Development Framework and Environmental Management Framework;
- ensuring the regular review of plans and that planning remains dynamic and relevant in accordance with developmental changes taking place within, or which may impact on council’s area; and
submitting a copy of the entity’s disaster risk management plan and any amendments thereof to the disaster risk management centre for forwarding to the disaster risk management centre of Lejweleputswa District, Free State Province and to the National Disaster risk management Centre.

In terms of Sections 47 and 52 of the Act each municipal entity must establish its role and responsibilities in terms of the Act and must assess its capacity to fulfil those requirements. Where capacity is lacking it must be augmented by the sharing of resources between departments, organs of state in the other spheres of government and by entering into partnerships with the private sector, non-governmental organisations and community-based organisations. In this regard mutual assistance agreements and memoranda of understanding must be concluded in which the detail, extent and ramifications of such support are recorded.

### 3. Action to be taken:

Tswelopele LM must provide clear guidelines as to the roles and responsibilities of municipal entities in disaster risk management and sign appropriate mutual assistance- or service level agreements for this purpose.

Entities must ensure that their disaster risk management plans are co-ordinated and aligned with those of other organs of state and institutional role players.

In order to give further effect to the requirements of Sections 47 and 52 of the Act, primary responsibility for the co-ordination and management of disaster risk management planning and operations for the following functional areas in Tswelopele LM is assigned as follows:

10.1.8 The Municipal Manager

The Municipal Manager is responsible to ensure the effective implementation of the requirements of the Disaster risk management Act, 2002 within the departments and other municipal entities within Tswelopele LM and for the integration of disaster risk management plans with the IDP Process.

10.1.9 Department: Community Services

The Director Community Services,

- is the Disaster Risk Management focal point for the department;
- will serve on Tswelopele LM IDRMC; and
- is responsible for the co-ordination of all relevant aspects of disaster risk management planning and operations in respect of matters related to fire, traffic, licensing, community service and security related matters.
• Is responsible for the co-ordination of all relevant aspects of disaster risk management planning and operations in respect of health, and social related matters.

10.1.10 Department: Technical Services

Director: Technical Services
• is the Disaster Risk Management focal point for the department;
• will serve on Tswelopele LM IDRMC; and
• is responsible for the co-ordination of all relevant aspects of disaster risk management planning and operations in respect of matters related to civil works and infrastructure.
• is responsible for the co-ordination of all relevant aspects of disaster risk management planning and operations in respect of matters related to emergency housing and reconstruction.

10.1.11 Department: Corporate Services

Director: Corporate Services
• is the Disaster Risk Management focal point for the department;
• will serve on Tswelopele LM IDRMC; and
• is responsible for the co-ordination of all relevant aspects of disaster risk management planning and operations in respect of matters related to business continuity, legal services, transport and human resource management.

10.1.12 Department: Finance

The Chief Financial Officer:
• is the Disaster Risk Management focal point for the department
• Will serve on the Tswelopele LM IDRMC.
• is responsible for the co-ordination of all relevant aspects of disaster risk management planning and operations in respect of financial management and procurement.

4. Action to be taken:
Municipal Manager in consultation with the managers and Heads of all departments and other municipal entities must identify all other statutory functionaries in each of the relevant departments or entities who have disaster risk management responsibilities and the responsibilities in this regard must be recorded in the job descriptions of such functionaries together with key performance indicators. The functionaries so identified will serve as indicated on Tswelopele LM Interdepartmental Disaster risk management Centre (IDRMC).
10.1.14 Tswelopele Local Municipality Interdepartmental Disaster risk management Committee (Tswelopele LM IDRMC)

10.1.14.1 Purpose of IDRMC

In order to promote interdepartmental relations and to achieve a co-ordinated, integrated and common approach to disaster risk management by the departments and other internal units in the administration of the municipality (Section 44(1)(b)(i) of the Act) in the development and implementation of appropriate disaster risk reduction methodologies, emergency preparedness and rapid and effective disaster response and recovery capabilities, the Head of the Centre is responsible to establish and sustain an Interdepartmental Disaster Risk Management Committee (IDRMC).

In order to ensure that DRMC implements disaster risk management in a manner consistent with the Act, as well as practical to involve all the necessary role players, the head of DRMC will establish an IDRMC with the functionaries as identified.

The committee comprises heads of departments and key personnel with specific technical expertise who have disaster risk management responsibilities. It facilitates integrated and co-ordinated planning by providing the forum for collaboration on joint cross departmental plans and programmes aimed at disaster risk reduction and other relevant activities associated with disaster risk management as required by section 52 of the Act. It acts in support of Tswelopele LM DRMC and assists with supervising the preparation, co-ordination, monitoring and review of disaster plans and their integration with the IDP processes.

The committee is chaired by the Head of DRMC and shall meet at least quarterly, but is not precluded from meeting more frequently according to current circumstances.

10.1.14.2 Composition of IDRMC

IDRMC comprises key personnel and relevant role players of the various departments and other internal units in the administration of council who have disaster risk management responsibilities in their functional area. The permanent members of IDRMC are as follows:

**Office of the Municipal Manager**

- Municipal Manager
- Director: Community Services
- Director: Corporate Services
The composition of the committee does not preclude the co-option of additional key council personnel with disaster risk management responsibilities to the IDRMC, if prevailing circumstances demand it. Nor does it preclude the ad hoc co-option of specialised expertise for specific purposes.

Each Director will serve as the Focal Point for Disaster risk management for their department’s functional area and accordingly is expected to attend meetings of IDRMC (see section 2.1.6 above).

The job descriptions of the permanent members serving on IDRMC must include a description of their disaster risk management responsibilities.

10.1.14.3 Responsibilities of IDRMC

For the purposes of implementing the requirements of the Act and in particular, Sections 47 and 48 the responsibilities of IDRMC include:

For disaster risk reduction planning and operations:

- monitoring, assessing, and co-ordinating council’s disaster risk management planning and implementation, placing particular focus on risk reduction policies, practices and strategies;
- collaborating, co-ordinating and monitoring progress on joint projects and programmes and their integration into the IDP process;
- annually reviewing the council’s disaster risk management framework, departmental disaster risk management plans, the plans of other internal units within council’s administration and the plans of other municipal entities in council’s area to ensure that the plans are integrated, current, and consistent with the disaster risk management framework;
- promoting joint standards of practice within and between the departments and other entities within council;
- monitoring progress on the implementation of priority projects aimed at risk reduction;
- participating in desk top exercises bi-annually to remain current on roles and responsibilities in the activation and operation of Disaster Operations Centre to ensure rapid and efficient response and recovery in the event of a disaster occurring or threatening to occur in council’s area; and
- Making Action to be taken to council regarding disaster risk management policy and related disaster risk management matters.
For contingency planning and disaster response and recovery:

- when a disastrous event occurs or is threatening to occur in the area of a municipality, on receipt of an activation alert from the Head of DRMC (or designate), report immediately to the District Disaster risk management Centre Disaster Operations Centre (DOC);
- conducting initial and specialist post disaster assessments for the department’s or entities’ functional area;
- ensuring that departments respond rapidly to disasters;
- ensuring efficient and co-ordinated disaster response and recovery operations;
- monitoring progress with, and ensuring that, post disaster reconstruction and rehabilitation projects include measures to reduce risk to similar events in the future;
- ensuring that regular reports on progress with disaster recovery are continuously submitted to council as well as to DRMC of Free State Province and Lejweleputswa DRMC; and
- Ensuring that all documentation and records relating to the disaster are retained and placed in safe-keeping for the purposes of post disaster investigation, inquiry or review.

10.1.14.4 Project Teams and Planning Clusters

IDRMC may convene project teams to address specific joint risk reduction priorities including post disaster projects. Teams so convened will act as sub-committees of IDRMC for the duration of their task and will determine their terms of reference and outcomes in consultation with the Head of the Centre and the IDRMC; will plan and manage such multi-disciplinary projects; and will report back to IDRMC.

In the context of emergency preparedness, planning clusters will also be convened to address contingency plans for specific priority risks posed by hazards such as storms, floods, drought, fires, epidemics, transportation accidents, oil spills, hazardous material spills, Xenophobic attacks crowd related events. These contingency plans will include strategies and procedures to ensure the implementation of an incident management system, which will establish joint standards of practice and inter-disciplinary co-operation for rapid and effective disaster response capabilities. Such plans will also be subject to consultation within,

**The Department: Community Services**
- Manager : Community Development
- Housing Officer

**Technical Services**
- Electrical Engineering Services
- Project Management Officer
Department of Finance

- Chief Financial Officer
- Budget Officer

Department: Corporate Services

- Executive Manager: Corporate Service
- Senior Manager: HR/LR

10.1.15 Integration with the IDP Process

In order to facilitate the integration of disaster risk management into the IDP process, the Head of DRMC must serve on both IDP Steering Committee and IDP Representative Forum. All development projects must be referred to the IDP Manager. Tswelopele LM, DRMC for comment and input before their submission to council for approval.

10.1.16 Monitoring and evaluation

Tswelopele LM DRMC is responsible to ensure that the Office; the departments and other entities within the administration of council and IDRMC, and any other decentralised structures conduct self assessments and peer reviews at least twice a year. Assessment and review reports must be prepared in accordance with the reporting guideline to be developed by Tswelopele LM. Copies of the reports must be submitted to DRMC. Copies of the reports must be submitted to DRMC of Free State Province as well as DRMC.

10.1.17 Arrangements for stakeholder participation and technical advice

10.1.17.1 Objectives

To establish and cooperate with mechanisms, which will provide for the active participation of all role players and stakeholders, including technical experts, the community and the private sector in disaster risk management planning and operations in the district.
10.1.18 Lejweleputswa District Municipality Disaster Risk Management Advisory Forum (Lejweleputswa DM DRMAF)

Disaster risk management focal point of Tswelopele must serve as an active member on Lejweleputswa DM DRMAF. The focal point must report to DRMC on matters pertaining to Lejweleputswa DM DRMAF.

10.1.19 Community/Ward participation

In terms of risk reduction, the local sphere is the first line of defence and in the event of a disaster occurring (or threatening to occur) the community is in reality the first responder.

Disaster Risk Management Centre is responsible to facilitate and co-ordinate the establishment of a disaster risk management structure such as a committee or forum in each municipal ward to serve as the leadership and co-ordinating element for the purposes of disaster risk management in the ward. This process is to be initiated and managed in consultation and co-operation with the disaster risk management co-ordinating structure of Tswelopele Local Municipality. Ward Disaster risk management structures will adopt a Ward Disaster Risk Management Constitution which will include terms of reference, the allocation of portfolios; operating protocols in terms of disaster risk reduction planning; early warnings; emergency preparedness; emergency communication; data collection; disaster response and recovery; and the recruitment and management of ward volunteers.

Ward DM structures will actively participate in and promote:

- awareness programmes amongst communities in the ward;
- to develop a culture of risk avoidance behaviour to commonly encountered hazards;
- the development of a disaster risk profile, a strategic risk reduction strategy, contingency plans for priority disaster risks and a response and recovery operational guide for their ward; and
- Training and capacity building programmes for residents in the ward.

Ward disaster risk management structures must also be capacitated to conduct initial assessments in accordance with the assessment guidelines when disasters occur or are threatening to occur in their ward and to transmit such information to Lejweleputswa Disaster Risk Management Centre.
10.1.20 Disaster risk management Volunteers

In accordance with Sections 44(1) (g) and 58 of the Act, a local municipality might resolve to establish a unit of volunteers. The unit must be established in accordance with the regulations and the policy and procedures as set out in an operational guide pertaining to the recruitment, training and participation of volunteers.

10.1.21 Key Performance Indicators

- Ward structures have been established in the wards and are operating effectively.
- Minutes, records and reports of Ward structures’ activities are prepared, maintained and submitted to Tswelopele LM.
- Unit of Volunteers must be established and operate effectively.
- Provision must be made for the necessary funding to give effect to the arrangements.
- Minutes, records and reports of the activities of the volunteer reserve are prepared maintained and submitted to Tswelopele LM.

10.1.22 Monitoring and evaluation

Tswelopele LM is responsible to ensure that any established structures (e.g. Ward Forums and the volunteer unit) conduct self-assessments and peer reviews at least twice a year. Assessment and review reports must be prepared in accordance with the reporting guideline to be developed by Tswelopele LM DRM. Copies of the reports of Lejweleputswa DM must be submitted to PDRMC of Free State as well as NDMC through Lejweleputswa District DRMC.

10.1.23 Arrangements for local, provincial, national and international co-operation

10.1.23.1 Objective

To establish mechanisms to give effect to the principles of co-operative governance and to ensure the alignment of council's approach to disaster risk management with that of the other spheres and with that of neighbouring authorities; and to establish international links for the purposes of joint standards of practice and keeping pace with global initiatives.

10.1.23.2 Co-operation with the district municipality

The following diagrammatic representation indicates the mechanisms established to ensure that the provisions of the Act in terms of consultation and co-operation with the District Municipality are complied with.
10.1.23.3 Co-operation with National Disaster Management Centre and Disaster Risk Management Centre of Free State Province and Lejweleputswa District Disaster Risk Management Centre

In terms of the legislation, communication must be maintained at all times between council’s disaster risk management centre, National Centre, Disaster Risk Management Centre of Free State Province and Lejweleputswa District DRM Centre.

Council’s responsibilities in this regard will be to assist the District, National and Provincial centre to:

- identify and establish communication links with disaster risk management role players in the municipal area;
- develop and maintain an electronic database; and
- develop guidelines for the preparation of and regular review of disaster risk management plans and strategies including contingency plans and emergency procedures and the integration of the concepts and principles of disaster risk reduction with development plans and programmes

Submit to Lejweleputswa District DRMC:

- a report at least annually containing the information as prescribed in Section 50 of the Act; and
- a copy of council’s disaster plan and any amendment thereto.
• Immediately inform Lejweleputswa District DRMC of any disaster which occurs or threatens to occur in council’s area; provide information regarding the assessment of the disaster and make Action to be taken regarding the classification of the disaster as may be appropriate.

10.1.23.4 Joint co-operation with neighbouring authorities through the DRMAF and DCC

In order to facilitate joint co-operation between council and the neighbouring authorities of:
• Nala Local Municipality
• Machabeng Local Municipality
• Tokologo Local municipality and
• Masilonyana Local Municipality.

Provision must be made for the representation on Disaster Risk Management Advisory Forum as well as the DDRMC of Lejweleputswa for the purposes of:
• the identification of potential cross boundary threats;
• sharing information on disasters and important risk reduction issues;
• participative disaster risk planning;
• joint contingency planning;
• developing and establishing joint standards of practice;
• information sharing including disaster risk management plans and the dissemination of early warnings;
• clear identification of roles and responsibilities in the event of cross boundary disasters which occur as well as responsibilities for the issue of advisories or early warnings of the potential spread or progress of a significant event or disaster into one or more neighbouring jurisdictions;
• concluding mutual assistance agreements, bilateral and multilateral agreements with clearly defined protocols for the purposes of shared risk reduction initiatives, emergency preparedness and cross boundary response and recovery efforts;
• sharing expertise and the development of disaster assistance response teams;
• establishing strategic communication links, procedures and protocols; and
• Creating opportunities for conducting research.

10.1.23.5 Mutual Assistance Agreements

Tswelopele LM, District municipalities, Municipal organs of state, and any other entities operating within the administrations of municipalities must assess their capacity to meet their
responsibilities for disaster risk reduction, emergency preparedness and response and recovery in terms of the Act. Where required they must enter into partnerships and conclude mutual assistance agreements with other organs of state, the private sector, communities and non governmental organisations to augment their capacity. Such agreements must be in accordance with the national guidelines.

10.1.23.6 Key performance indicators

- Arrangements for giving effect to the principles of co-operative governance are established and functioning effectively.
- Provision has been made for the necessary funding to give effect to the arrangements.
- Correct procedures and protocols are followed in establishing the arrangements.
- Mutual assistance agreements and memoranda of understanding, which conform to the national guideline, have been concluded.
- Maintaining accurate records of correspondence, proceedings, meetings and plans.

10.1.23.7 Monitoring and evaluation

Tswelopele LM DRMC must conduct self-assessments and peer reviews at least twice a year to establish whether the key performance indicators in respect of the arrangements for local, provincial, national and international co-operation are being met. Assessment and review reports must be prepared in accordance with the reporting guideline to be developed by Tswelopele LM DRMC. Copies of the reports must be submitted to Lejweleputswa District DRMC.

11. Key Performance Area 2: Disaster Risk Assessment

11.1 Disaster risk assessment

11.1.1 Objective

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

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

### 11.1.3 Disaster risk assessment

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

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

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

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

- Prior to the implementation of any municipal disaster risk reduction, preparedness or recovery program;
- As an integral component of the planning phase for large-scale housing, infrastructure or commercial/industrial developments of significance in the municipality;
- As an integral component of the planning phase for significant initiatives that affect the natural environment in the municipality;
- When social, economic, infrastructural, environmental, climatic or other indicators suggest changing patterns of risk that increase the likelihood of significant disaster impacts in the municipality; and
- All proposed risk assessments and related studies must be reviewed and approved by TLM prior to implementation to ensure consistency in approach.

### 11.1.4 Situations requiring risk assessments

**Risk assessments must be undertaken to:**
- ensure that development initiatives maximize their vulnerability reduction outcomes; and
- Anticipate and plan for known risks or disasters to prevent losses and limit endangering impacts.

### 11.1.5 Maximising vulnerability reduction outcomes

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

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

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

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

11.1.7 Methodology for conducting a disaster risk assessment for Tswelopele Municipality.

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

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

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

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

- the type of hazard being assessed;
- the characteristics of the area, infrastructure, service or business concerned;
• the urgency of the assessment; and
• the availability of relevant hazard and vulnerability information.

11.1.7.1 Key research questions

The research aim to establish:

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

11.1.7.2 Method of investigation

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

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

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

### 11.1.8 Community-based disaster risk assessment

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

### 11.1.9 Consolidation and classification of disaster risk information

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

<table>
<thead>
<tr>
<th>ORIGIN</th>
<th>PHENOMENA/EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geological hazards</td>
<td>• surface collapse, geological fault activity</td>
</tr>
<tr>
<td>Hydrometeorological hazards</td>
<td>• Floods, debris and mudflows</td>
</tr>
<tr>
<td></td>
<td>• Tropical cyclones, storm surges, thunder / hailstorms, rain and windstorms, and other severe storms</td>
</tr>
<tr>
<td></td>
<td>• Drought</td>
</tr>
<tr>
<td></td>
<td>• Desertification</td>
</tr>
</tbody>
</table>
Vulnerability must be assessed as social, economic, political, environmental or physical (infrastructural). As vulnerability factors are often the major drivers of disaster risk, rather than external hazard processes, it is critical to identify these during a risk assessment. This provides important insights for developing vulnerability reduction interventions that lower the levels of disaster risk.

11.1.10 Key performance indicators

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

11.2 Monitoring, updating and disseminating risk information

11.2.1 Objectives

To establish an effective risk monitoring system for priority risks.

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

- Risk monitoring systems for TLM must involve:
  - hazard tracking;
  - vulnerability monitoring; and
  - Disaster event tracking.

11.2.2.1 Hazard tracking

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

11.2.2.2 Vulnerability monitoring

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

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

11.2.2.3 Disaster event tracking

Disaster event tracking systems monitor changing patterns in disaster risk. Increasing or decreasing frequencies of unclassified disaster incidents are sensitive indicators of changing risk patterns in at-risk areas. For instance, a rising incidence pattern of small and medium-size informal settlement fires may represent an early warning of accumulating risks, which may result in a more serious and destructive fire event. It also signals a call for urgent measures to avert the impending disaster.
Information on small and medium ‘undeclared’ events can be found in many different sources, including local newspapers, fire and disaster management reports, and records of Social Services and local NGO’s such as the South African Red Cross Society.

11.2.3 Updating the comprehensive disaster risk assessment for Tseloapele of Local Municipality

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

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

11.2.4 Responsibility for monitoring and updating risk information

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

- accessing and updating relevant hazard and vulnerability information on risks specific to their functional areas; and
- Making this information available to TLM.

In addition TLM must:

- establish clear mechanisms for accessing, consolidating and updating relevant hazard, vulnerability and disaster occurrence information from specialist government and non-governmental partners responsible for monitoring specific risks, including fire, coastal threats, drought and epidemics;
• develop and implement clear mechanisms for disseminating risk assessment and monitoring information for ongoing planning, as well as for managing conditions of heightened risk;

• establish clear procedures for accessing, interpreting and disseminating timely weather information, particularly when this is associated with potentially endangering rapid-onset storm or cyclone processes, hot dry temperatures, strong winds, heavy rainfalls or snow, ice or fog conditions; and

• Ensure that the disaster risk information systems are managed by skilled individuals with both information technology capabilities and disaster risk analytic skills.

11.2.5 Key performance indicators

• TLM has established and documented clear mechanisms for accessing, consolidating and updating relevant hazard, vulnerability and disaster occurrence information from partners responsible for monitoring specific risks, including fire, drought and epidemics;

• TLM has established and documented clear mechanisms for disseminating Hazard Risk and Vulnerability (HRV) assessment and monitoring information for ongoing planning, as well as for managing conditions of heightened risk; and

• TLM has established and documented clear procedures for accessing, interpreting and disseminating timely weather information, particularly when this is associated with potentially endangering rapid-onset storm or cyclone processes, hot dry temperatures, strong winds, heavy rainfalls or snow, ice, hail or fog conditions.

11.3 Ensuring quality control

11.3.1 Objective

To ensure that disaster risk assessments undertaken for priority risks are robust and can reliably inform risk reduction planning.

11.3.2 Capabilities for conducting disaster risk assessments

A disaster risk assessment almost always requires specialist input. This applies to both the process of characterising the hazard conditions that can trigger loss, as well as understanding the vulnerability factors that increase the severity of the impact.

However, when working with technical specialists, the commissioning organ of state must define terms of reference that specify feedback, consultation and capacity-building
requirements by the specialists commissioned. This is particularly important given the complex character of hazard and risk science for non-specialists, and the serious legal and other implications of disseminating incorrect or unverified disaster risk assessment findings, which then inform planning decisions. In South Africa, disaster risks are more significantly shaped by social, economic and environmental conditions than by external threats. It is therefore critical that HRV assessments should be reality-based (that is, based on the actual situation ‘on the ground’), with field consultations in areas and communities most at risk.

Field consultation increases the accuracy of the HRV assessment findings, provides insight into the vulnerability conditions that can potentially be reduced, and builds a greater sense of responsibility for ‘sharing the risk’ among the communities affected. In this context, it is critical that the assessment process includes respectful pre-assessment consultation with the affected communities prior to the arrival of external assessment teams, to build a co-operative partnership.

11.3.3 Measures to establish the accuracy of future HRV assessments

Two mechanisms can be used to ensure the accuracy of the disaster risk assessment undertaken to inform area planning:

- establishment of a technical advisory committee external validation; or
- External peer review of methods and findings.

11.3.4 Technical advisory committee

A technical advisory committee, comprising recognised specialists in the hazards, vulnerabilities and risks being assessed, is particularly necessary when complex risk assessments are being carried out. Such a committee can assist with the development of terms of reference, the monitoring of progress, and the validation and/or interpretation of the findings.

11.3.5 Key performance indicators

Disaster risk assessments undertaken show documented evidence of:

- capacity building with respect to the commissioning authority;
• reality-based (that is, based on the actual situation 'on the ground' or verified by those being assessed), through field consultations in the areas and with communities most at risk from the threat(s) being assessed; and
• Consultation with appropriate governmental and other stakeholders about the design and/or implementation of the assessment, as well as the interpretation of the findings.

There is documented evidence in disaster risk assessments undertaken of external validation prior to:

• the publication or dissemination of hazard, vulnerability or risk maps and/or reports for planning purposes; and
• The implementation of risk reduction or other initiatives based on the assessment results.

Disaster risk assessments undertaken show documented evidence of technical consultation with TLM prior to implementation.

11.4 Disaster Risk Assessment of the Tswelopele Local Municipality

11.4.1 Introduction

The data presented here is the product of a workshop conducted with disaster management staff members from TLM and LDM. As this is a level one plan, the product should be considered and indicative risk profile. It is based on the perceptions of group key informants and not on rigorous fieldwork. A comprehensive risk assessment will make part of a level two and level three DRMPs drafted in the future.

Generally, Risk (R) is described as a function of Hazard (H), Vulnerability (V) and Capacity (C), according to the following formula:

\[
R = \frac{H \times V}{C}
\]

TLM and LDM staff members were asked to identify hazards and name the areas most at risk to these hazards. In addition they were asked to explain why these areas are at risk to the identified hazards and to assess current levels of vulnerability and coping capacity for each identified area in relation to the identified hazards. The following discussion provides an overview of the results.
11.4.1.1 Hazard Assessment

Table below indicates the hazards experienced annually in TLM. The probability of a hazard occurring in a given month is indicated as high, medium or low. This aspect is also colour coded:

<table>
<thead>
<tr>
<th>Probability</th>
<th>Abbreviation</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>H</td>
<td>Red</td>
</tr>
<tr>
<td>Medium</td>
<td>M</td>
<td>Orange</td>
</tr>
<tr>
<td>Low</td>
<td>L</td>
<td>Yellow</td>
</tr>
</tbody>
</table>

In addition the normal severity in a given month is indicated with a score on the following five-point scale:

<table>
<thead>
<tr>
<th>Score</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Catastrophic</td>
</tr>
<tr>
<td>4</td>
<td>Major</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
</tr>
<tr>
<td>2</td>
<td>Minor</td>
</tr>
<tr>
<td>1</td>
<td>Insignificant</td>
</tr>
</tbody>
</table>
Table 4: Seasonal hazard calendar for Tswelopele Local Municipality

<table>
<thead>
<tr>
<th>Priority risk</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APL</th>
<th>MAY</th>
<th>JUN</th>
<th>JLY</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind storms</td>
<td>H4</td>
<td>H4</td>
<td>H4</td>
<td>M3</td>
<td>L1</td>
<td>L1</td>
<td>L1</td>
<td>L1</td>
<td>M3</td>
<td>H4</td>
<td>H4</td>
<td>H4</td>
</tr>
<tr>
<td>Flooding</td>
<td>H3</td>
<td>H3</td>
<td>H3</td>
<td>M2</td>
<td>L1</td>
<td>L1</td>
<td>L1</td>
<td>L1</td>
<td>M2</td>
<td>H2</td>
<td>H3</td>
<td>H3</td>
</tr>
<tr>
<td>Pandemic/Epidemic Cholera</td>
<td>H2</td>
<td>H2</td>
<td>H2</td>
<td>M2</td>
<td>L2</td>
<td>L2</td>
<td>L2</td>
<td>L2</td>
<td>M2</td>
<td>H2</td>
<td>H2</td>
<td>H2</td>
</tr>
<tr>
<td>Structural Fires (formal)</td>
<td>M2</td>
<td>M2</td>
<td>M2</td>
<td>M3</td>
<td>M3</td>
<td>M3</td>
<td>M3</td>
<td>M3</td>
<td>M2</td>
<td>M2</td>
<td>M2</td>
<td>M2</td>
</tr>
<tr>
<td>Structural Fires (informal)</td>
<td>L3</td>
<td>L3</td>
<td>L3</td>
<td>H3</td>
<td>H3</td>
<td>H3</td>
<td>H3</td>
<td>H3</td>
<td>M3</td>
<td>L3</td>
<td>L3</td>
<td>L3</td>
</tr>
<tr>
<td>Veld fires</td>
<td>M2</td>
<td>M2</td>
<td>L2</td>
<td>M2</td>
<td>H4</td>
<td>H4</td>
<td>H4</td>
<td>H4</td>
<td>H5</td>
<td>H5</td>
<td>M2</td>
<td>M2</td>
</tr>
<tr>
<td>Road accidents</td>
<td>H3</td>
<td>M2</td>
<td>H3</td>
<td>M2</td>
<td>M2</td>
<td>M2</td>
<td>M2</td>
<td>M2</td>
<td>M2</td>
<td>H2</td>
<td>H3</td>
<td>H3</td>
</tr>
</tbody>
</table>
The table above indicates a host of annual hazards. From these, those with the highest probability seem to be severe weather events, flooding and epidemics in the summer months. Structural fires in informal settlements are highly likely in the winter months while road accidents are a concern around specific dates, in particular school holidays in November to January as well as March.

The following table indicates hazards experienced approximately every five, ten, twenty and fifty years. One in five years hazards are industrial fires and transport accidents involving hazardous materials. Drought is considered a one in ten year hazard, while seismic events were identified as one in twenty years hazards. Urban flooding and dam failures were identified as one in fifty years hazards.

Table 5: One in five, ten, twenty and fifty year hazards for the Tswelopele Local Municipality

<table>
<thead>
<tr>
<th>Priority risk</th>
<th>1:5</th>
<th>1:10</th>
<th>1:20</th>
<th>1:50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial fires</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>HAZMAT transport/incidents</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Drought</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Urban flooding</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dam failure</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

11.4.1.2 Vulnerability Assessment

The above risks impact on local communities in various ways. This section briefly outlines the type of impact each of these hazards may have on affected areas. Severe weather events have an adverse effect on infrastructure such as houses. This is exacerbated by poor building standards in places. Severe weather events may also lead to the displacement of people, psychological trauma, injuries and increases in crime, as people lose their homes and means of income. Severe weather events lead to negative publicity. Areas may be labelled as “disaster prone”. This in turn might spark population growth in other areas. In extreme cases severe weather events might spark political unrest, as authorities are blamed for the situation.

Flooding may have similar impacts to the above. In addition, it might also pose health issues as waterborne diseases spread. It might also damage crops and have an adverse impact on the environment, for example by leading to soil erosion.

Epidemics may have similar effects. Large-scale public health concerns may impact on the local economy as residents have passed away or are ill and thus are not able to work. In extreme cases the coping capacity of medical facilities may be exceeded.
Structural fires in formal areas damage infrastructure. The impact on the local economy and may lead to increases in insurance claims and premiums for those occupying the buildings. Damage to municipal buildings may impact on service delivery.

Structural fires in informal settlements may lead to the displacement of residents as victims are relocated. In addition to a loss of physical assets (homes), these fires may also lead to fatalities and a loss of income, as fires may have destroyed places of work. Veld fires can lead to a loss in biodiversity. It can also directly impact on local livelihoods by destroying crops and animal fodder. Herds may also be reduced. Road accidents may lead to injuries and deaths. Pollution may occur, should hazards chemical be spilt. Accidents may also damage roads and surrounding infrastructure and properties.

Mass events in extreme cases may become violent. People may be injured or die in stampedes. This may also have an economic impact, as many human hours may be lost.

The following table indicates levels of vulnerability and coping capacity for selected settlements regarding annual hazards. Settlements were identified as those most at risk to these hazards. Vulnerability scores were assigned based on the following scale:

<table>
<thead>
<tr>
<th>Level of vulnerability</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely vulnerable</td>
<td>5</td>
</tr>
<tr>
<td>Highly vulnerable</td>
<td>4</td>
</tr>
<tr>
<td>Moderately vulnerable</td>
<td>3</td>
</tr>
<tr>
<td>Low vulnerability</td>
<td>2</td>
</tr>
<tr>
<td>Insignificant vulnerability</td>
<td>1</td>
</tr>
</tbody>
</table>
Capacity scores were assigned based on the following scale:

The table above indicates that the area’s most vulnerable to various hazards. Amongst these, Phahameng, Tikwana and Informal Settlement at Phahameng seem to be most vulnerable. These areas are also least well endowed in terms of coping capacity.

The following table indicates vulnerability and capacity scores for the most at risk settlements and areas, regarding one in five year events. Vulnerability to these hazards for the most part seems to be low to moderate. Similarly capacity scores seem to be limited or moderate for the most part.

Table 6 : Vulnerability and capacity scores for one in ten year events

<table>
<thead>
<tr>
<th>Priority risk</th>
<th>Settlement</th>
<th>Vulnerability score</th>
<th>Capacity score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought</td>
<td>Rural areas around Bultfontein &amp; Hoopstad.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Will be focussed on during comprehensive risk assessment in 2016.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12. KEY PERFORMANCE AREA 3: DISASTER RISK REDUCTION

12.1 A guiding framework for disaster risk management

Although TLM Disaster Risk Assessment (TLMRA) has identified a wide range of risks posing a potential threat to its area, it is not practical nor is it financially achievable to address all the risks simultaneously. Effective and focused disaster risk management planning by all municipal organs of state and other municipal entities can only be achieved through the identification of priority disaster risks and by the identification of the areas, communities and households most at risk to disasters in council's area. It is therefore necessary to adopt a carefully considered process, which will enable this prioritisation.

Part of the prioritisation process will also be to adopt a three-phased approach to disaster risk management planning over a period of two years from the date of implementation of the Act. This does not however imply that once the third phase is completed that the planning process is over. It must be clearly understood that disaster risk management planning is not a stop/start activity or project but a continuous process which of necessity must produce dynamic, real time plans, which remain current in a continuously changing environment. This is of particular relevance in respect of disaster risk reduction plans.

The process of prioritisation for disaster risk planning is also critically informed by the disaster risk assessment findings for the Southern District Municipality.

The disaster management plan of TLM must focus on the development of plans and the implementation of explicit programmes, projects and practices which give priority to building resilience and reducing the impact of a wide range of different disaster risks in areas, communities and households known to be prone to risk in its area of jurisdiction.

12.1.1 Disaster Risk Management Planning Framework

This section aims to establish a structure for effective management of disasters in TLM. All aspects of disaster risk management can be covered by Disaster Management Planning Framework (DMPF), as in Figure 5: Disaster Management Planning Framework: Future assessments and planning below. DMPF includes Disaster Risk Reduction (DRR) planning as well as Contingency planning.

12.1.1.1 Disaster risk reduction planning

On the left-hand side of the framework, ‘Disaster Risk Reduction Planning’, consist of Vulnerability Reduction Planning and Specific Risk Reduction Projects. Vulnerability
Reduction Planning focuses on the general vulnerabilities that are present in the municipality as a whole. Specific Risk Reduction Projects include on one hand future developments (planned for though the IDP) that should be assessed and on the other hand any area where a combination of vulnerabilities, hazards and/or a lack of capacities pose a specific (or combination of) high risk(s) to the population, infrastructure and environment.

12.1.1.2 Contingency planning

The right-hand side of the framework focuses on contingency planning. This type of planning has two components: for the most prevalent hazards, the municipality should have contingency plans in place that can be activated before or during the impact of a specific hazard (‘Hazard Specific Contingency Plans’).

As it is impossible to plan for every hazard, the contingency planning should also include generic plans. For the purpose of drawing up such plans, the most important issues have been listed in the framework (public health, command and control, shelter etc.)
Figure 5: Disaster Management Planning Framework: Future assessments and planning
Risk of a certain hazard can change over time. It is therefore necessary that all aspects of the framework are adapted accordingly. Continuous assessment is necessary for a sound and ground-truthed disaster risk management planning.

The six most prevalent threats are listed in the contingency planning section (see Figure 3 above). When contingency plans are written, tested and updated for these plans, TLM should strive to also cover ‘less prevalent risks’ in the ‘Hazard Specific Contingency Plans’. Contingency plans should also be tested and evaluated regularly, and updated accordingly.

5. Recommendation:
   a. Hazard specific contingency plans for all priority risks should be developed as a matter of urgency through a participatory process.
   b. Generic response and recovery plans should be identified and development.

12.1.3 Integration with IDP

In accordance with National Disaster Management Framework, Disaster Management Act as well as the Municipal Systems Act, disaster risk management plans developed by municipalities must be incorporated into the IDP, funding and implementation processes.

At the same time, the IDP should take into account the findings of the municipal disaster management structures. All current and future IDP and development plans should be evaluated by TLM DMO for the following purposes:

- To assess their consistency with TLM Disaster Management Plan;
- To determine the disaster risk inherent to the project;
- To determine the possible risk and vulnerability reduction inherent to the project; and
- To assess their relevance as to the priorities of the disaster risk assessment.

No IDP project should be allowed to continue without the assessment and approval of the disaster risk management officer. Council should take into account the comments made by the disaster risk management officer, and has full accountability for any decisions not in line with the Action to be taken of the disaster risk management officer.

6. Recommendation:
   TLM Council should establish a mechanism for the assessment of all current and future development projects in terms of their disaster risk.

12.2 Inputs to the planning process
From the DMPF above, it becomes clear that a prerequisite to all planning is the Disaster Risk Assessment. Not mentioned in the DMPF – but equally important - are the other inputs to the planning process, such as:

- Lejweleputswa District Disaster Management Framework and Disaster Management Plan,
- Free State Provincial Disaster Management Framework and Disaster Management Plan,
- National Disaster Management Framework and Disaster Management Plan;
- Disaster Management Act, 57 of 2002; and
- IDP of the Tswelopele Local Municipality Memoranda of Agreement and Memoranda of Understanding with role-players;
- cooperation with other disaster management structures (such as the DMCs of neighbouring municipalities, the district and the province); and
- Any other relevant data and information pertaining to developmental initiatives.

Furthermore, disaster risk management should take into account people’s needs and priority issues (in line with section 53.1 (b) of the Act): the perception of what people experience as ‘disasters’, ‘hazards’, ‘vulnerabilities’ or a ‘lack of capacity’ should be one of the major inputs to the planning process.

12.3 Phased approach in DM Planning

As mentioned above, it is impossible to cover all aspects of disaster risk management at once, therefore a three-phased (levels) approach is proposed.

12.3.1 Levels of planning

National Disaster Management Framework proposes three levels of Disaster Management Plans. The three phases/levels in the process are the following:

12.3.1.1 Level 1 Disaster Management Plan

A Level 1 Disaster Management Plan applies to national or provincial organs of state and municipal entities that have not previously developed a coherent disaster management plan. It focuses primarily on establishing foundation institutional arrangements for disaster risk management, putting in place contingency plans for responding to known priority threats, identifying key governmental and other stakeholders and developing the capability to generate a Level 2 Disaster Management Plan.
12.3.1.2 Level 2 Disaster Management Plan

A Level 2 Disaster Management Plan applies to national, provincial and municipal organs of state that have established the foundation institutional arrangements, and are building the essential supportive capabilities needed to carry out comprehensive disaster risk management activities. It includes establishing processes for a comprehensive disaster risk assessment, identifying and establishing formal consultative mechanisms for development of disaster risk reduction projects and introducing a supportive information system and emergency communications capabilities.

12.3.1.3 Level 3 Disaster Management Plan

A Level 3 Disaster Management Plan applies to national, provincial and municipal organs of state that have established both the foundation institutional arrangements for disaster risk management and essential supportive capabilities. The plan must specify clear institutional arrangements for coordinating and aligning the plan with other governmental initiatives and plans of institutional role players. It must also show evidence of informed risk assessment and ongoing risk monitoring capabilities as well as relevant developmental measures that reduce the vulnerability of disaster-prone areas, communities and households.

The visits in the Municipality by the ACDS have established the necessary capacity in the municipality; it is the responsibility of TLM Council and the DRMC to sustain and expand this capacity, and to put it to use for the implementation of the next levels.

The Level 2, mainly focusing on the DRA, is discussed below in Key Performance Area 2. It should again be stressed that the DRA is a continuous process to be taken further by DRMC and the relevant stakeholders. The Level 2 also comprehends the formalisation of the consultation of and cooperation with stakeholders and DMAF and DMC.

The third level of Disaster Management Planning includes all other processes and planning as mentioned in the framework.

12.3.2 Implementation of the levels of Disaster Management Plans

National Disaster Management Framework foresees that within one year of the commencement of the Act (on 1 July 2004), all municipal organs of state will have submitted to the NDMC at a minimum, Level 1 Disaster Management Plans (by 1 July 2005). Within two years of the commencement of the Act (1 July 2006), all municipal organs of state will have submitted at a minimum, Level 2 Disaster Management Plans. Within four years of the
commencement of the Act (1 July 2008), all municipal organs of state will have submitted Level 3 Disaster Management Plans.

Municipal organs of state must specify which one of three specified Disaster Management Planning Levels is most appropriate for their respective capabilities, experience and functional responsibilities. They must also indicate proposed steps that will allow progress to more advanced planning levels.

13. **Key Performance Area 4: Response and recovery**

In order to achieve the requirements of the Act calling for an integrated and co-ordinated policy that will provide for rapid and effective response to disasters and to post disaster recovery, it is imperative that mechanisms are put in place which leaves no room for confusion when a significant event or disaster occurs or is threatening to occur in council’s area. This requires clear allocation of roles and responsibilities and concisely defined procedures and protocols for all operational personnel, other relevant role players, communities at risk, and the public in general. This key performance area seeks to ensure that disaster response and recovery planning for TLM achieves these objectives.

13.1 **Preparedness and early warning**

13.1.1 **Objectives**

To establish effective early warning systems in TLM that will ensure:

- rapid and effective actions by essential and emergency services;
- that households, communities and areas at risk are able to respond timely and appropriately; and
- In order to avert or reduce the potential impacts on people in terms of health, personal injury, loss of life, damage to property, infrastructure or environments.

TLM is primarily responsible to ensure that it has the technical capacity to identify and monitor hazards and must ensure that mechanisms are in place for the receipt, dissemination and appropriate responses to standard early warnings issued by organs of state tasked with primary responsibility for a specific hazard.

TLM is responsible to prepare and issue hazard warnings of significance for the municipal area in a timely and effective manner and to ensure that the warnings are disseminated to those communities known to be most at risk to the hazard including those in isolated and/or
remote areas. Warnings must include information and guidance that will enable those at risk to increase their safety and take risk avoidance measures to reduce losses.

TLM must identify and establish strategic inter-sectoral, multidisciplinary, and multi-agency communication mechanisms for the purpose of disseminating warnings including emergency communication systems accessible to communities at risk (CARs). Communication mechanisms must include protocols to ensure appropriate institutional reactions to early warnings as well as protocols for reporting by essential and emergency services of significant events, which occur or are threatening to occur in council’s area to TLM. This will enable TLM to track developments so that timely and effective actions can be taken in the event of a situation deteriorating. TLM must in turn further disseminate the information to LDM DRMC for further dissemination to any neighbouring DRMCs and/or authorities, which may be affected as well as to Free State Province DRMC and NDMC.

TLM must provide support to vulnerable communities within their area of jurisdiction and facilitate the implementation of programmes in CARs to make them aware of the hazards to which they are exposed and the specific actions they should take to reduce the impact. Programmes of this nature must take into account and add value to indigenous knowledge.

8. Action to be taken:
   a). TLM must assess its current capacity to deliver multi-hazard early warnings to communities most at risk in line with its risk profile and priorities.
   b). TLM to develop and implement appropriate early warning systems in conjunction with Lejweleputswa District DRMC.

13.2 Key Performance Indicators

- Technical capacity has been developed to implement early warning systems that will enable an alert, informed and self-reliant public in TLM.
- Mechanisms have been implemented to enable strategic intersectoral, multidisciplinary, and multi-agency communication mechanisms for Council’s area including emergency communication systems accessible to communities at risk (CARs).

13.2.1 Disaster Assessment

13.2.2 Objective
To establish clear procedures to be followed to ensure immediate and appropriate response and relief operations when significant events and disasters occur or are threatening to occur in TLM.

13.2.3 Disaster Assessment

Uniform methods and guidelines for conducting initial on site assessments of both damage and needs when significant events or disasters occur or are threatening to occur are critical tools for informed decision making to:

- establish what resources are necessary to ensure the delivery of immediate, effective and appropriate response and relief to affected areas and communities; and
- Ensure business continuity.

Municipal organs of state tasked with primary responsibility for dealing with disasters\(^1\) as a result of a particular hazard must therefore ensure that mechanisms are developed and implemented which will enable rapid and meaningful initial assessments to be conducted when a significant event or disaster occurs in TLM in order to determine the extent of the area affected, population, damage to critical infrastructure, lifeline facilities, property, and the environment; and that such assessments are conducted in accordance with national operational guidelines.

Those agencies in TLM tasked with primary responsibility for co-ordinating specific activities associated with disaster response and relief such as emergency medical care, search and rescue, evacuation, shelter, and humanitarian relief must prepare operational guidelines which will ensure that immediate and meaningful initial assessments are conducted in respect of immediate needs of those affected.

TLM must ensure that the information contained in the guidelines is also disseminated to the relevant role-players in communities and/or areas at risk. TLM must ensure that the dissemination of the guidelines must be complimented by training and capacity building to ensure their correct application.

Protocols must be developed and implemented to ensure that the results of initial assessments are included in the situation reports of significant events and disasters, which are transmitted to, LDMRMC, FS PDRMC and NDMC.

9. Action to be taken:

\(^1\) As per section 55 of the Disaster Management Act.
TLM to develop standard checklists and guidelines for disaster assessment in line with national, provincial and district guidelines.

14. Key Performance Indicators

TLM has developed and implemented mechanisms for disaster assessment in accordance with national guidelines.

14.1 Integrated Response and Recovery Plans

14.1.1 Objective

To ensure integrated response and recovery operations when significant events and/or disasters occur or are threatening to occur in the area of TLM.

14.2 Contingency plans

The various annexures to this plan contains generic contingency plans as developed by a multi-stakeholder workshop within TLM. These plans include integrated response to:

- Search and Rescue;
- Evacuation and Sheltering;
- Relief and Logistics;
- Industrial Accidents; and
- Access Control and Security.

Each of these plans contains a number of generic actions, which will remain the same for any response to any given hazard. It remains imperative that these plans are tested through desktop exercises in 2009 in order to refine and align these plans with the development of the hazard specific contingency plans.

9. Action to be taken:

DRMC must ensure that the generic contingency plans are tested and aligned with the development of hazard specific contingency plans.

TLM is further responsible to ensure the development of contingency plans for specific known hazards of rapid onset, which have been identified in the findings of the disaster risk assessment as priority risks in the area of TLM. These include:

- Severe weather events
The purpose of such plans is to integrate and co-ordinate multidisciplinary efforts to minimise or limit the potential impact of such events on communities and areas at risk; damage to infrastructure; and the interruption of essential services and business continuity.

Specific responsibility for the development of such plans must be allocated to the specific organ of state or municipal entity, which has been identified as the lead agency and is assigned primary responsibility for that particular risk. For example fire response and recovery would involve the combined efforts of many stakeholders but the primary responsibility must be allocated to a specific organ of state with the other stakeholders assuming secondary responsibilities. In the case of floods for example the Department of Water Affairs and Forestry would be the lead agency assigned primary responsibility; whereas in the case of other types of flooding and extreme weather events TLM would be the lead agency.

In the event of slow onset events the responsibility rests with the organ of state allocated primary responsibility to establish and co-ordinate multidisciplinary efforts to minimise potential loss. For example in the case of drought the Department of Agriculture would be the lead agency. In order to facilitate the planning process, and in keeping with the already developed contingency plans, Annexure 1-5 can be utilised in this regard, as templates for additional plans.

10. Action to be taken:
TLM in cooperation with Lejweleputswa District through the respective DRMCs and DMAFs should determine lead agencies for the prioritised hazards in TLM.

14.3 Operational plans for disaster response and recovery

TLM responsible to ensure the development of operational plans for disaster response and recovery when a disaster occurs or threatens to occur in TLM area of jurisdiction and the facilitation of rehabilitation and reconstruction programmes and projects. Such plans must be prepared consistent with the national guidelines.
TLM must ensure effective strategic co-ordination and management of response and recovery operations for its area.

TLM has primary responsibility to facilitate:

- the development of a standard operational guide for the establishment of Joint Operations Centres (JOCs) to ensure the effective tactical co-ordination and management of response and recovery operations for major incidents and significant events which occur or threaten to occur in the area of TLM.

- and to ensure that each response agency identified in TLM which can contribute to the response and recovery efforts – whether it be an essential service; an emergency service; community volunteer; a non-governmental organisation; a community based organisation; or a private sector agent – prepares and submits an operational plan applicable to their particular functional area which is in accordance with the national field operation guidelines (FOGs).

Operational plans must include SOPs, which must be formulated within the relevant legislation, regulations and standards.

11. Action to be taken:
   (a). TLM must ensure that clear guidelines in line with national requirements are provided to all organs of state, which must compile operational disaster response, and recovery plans.
   (b) TLM must ensure that primary and secondary responsibilities are allocated for the performance of on site operational activities associated with disaster response. In this regard lead agents must be identified and tasked with the primary responsibility for the overall control of specific on site operations such as evacuation, shelter, search and rescue, emergency medical services, fire fighting, and other response activities.

14.3.1 Incident Management System (IMS)

Incidents and emergencies handled on a daily basis by emergency and essential services personnel are routinely managed by an Incident Commander of a particular agency. On the other hand however, in the case of significant events and disasters, which occur or are threatening to occur, an incident management system must be implemented to ensure a systematic approach to the effective application of facilities, personnel, equipment, resources, procedures and communication. An incident management system provides for a participative approach to the management of the event; the clear allocation of responsibilities; and includes mechanisms for strategic, tactical as well as operational direction.
Accordingly TLM must introduce an incident management system in its area of jurisdiction, which ensures that all response and recovery planning and operations comply with the regulations and is consistent with the National Standard Incident Management System (IMS) introduced by NDMC in terms of National Disaster Management Framework. Apart from the identification and assignment of specific roles and responsibilities for each activity associated with response and recovery, the system must provide mechanisms to determine the level of implementation according to the magnitude and the capacity of the agency to deal with it. Provision must be made for the development of partnerships between agencies, which facilitate the involvement of the private sector, NGOs, traditional leaders, technical experts, communities and volunteers.

The system must take into account the conditions in South Africa where frequent significant events occurring on a daily basis require extraordinary measures but which do not necessarily justify the declaration of a local state of disaster. In order to track escalation of incidents ‘trigger’ indicators must be clearly identified for reporting of incidents to TLM. For example routine reporting to TLM of all veld fire incidents when fire danger rating indices are at certain levels or reporting of all incidents which require a predetermined level of response.

Terminology included in the IMS for the identification of stakeholders responsible for direction, control and co-ordination of an event at the operational, tactical and strategic levels as well as for the title used for each level must be in accordance with the national IMS.

12. Action to be taken:
A. TLM must introduce an incident management system, which ensures that all response and recovery planning and operations comply with the regulations and is consistent with National Standard Incident Management System (IMS).
B. TLM must identify clear trigger events and thresholds in order to provide response activation.

14.3.2 Activation and mobilisation

TLM must ensure that mechanisms for the activation and mobilisation of all resources including the deployment and application of volunteers must be clearly set out in the operational plans.
13. **Action to be taken:**
Mechanisms for the activation and mobilisation of resources should be clearly indicated in the respective contingency plans of TLM.

14.3.3 **Delegation of responsibility**

Response and recovery plans must make provision for the delegation of responsibilities of the Municipal Manager of TLM and the assignment of alternate arrangements for TLM as a contingency in the event that TLM itself is affected and unable to continue to operate.

14. **Action to be taken:**

a). TLM should ensure that alternative arrangements for the continuous operation of

b). TLM are made with neighbouring municipalities through Lejweleputswa District DRMC.

14.3.4 **Emergency communication**

In view of the critical role of *inter-agency* communication in the management of incidents, significant events and disasters, TLM must give priority attention to the development of an emergency communication system for this purpose.

15. **Action to be taken:**
TLM in partnership with Lejweleputswa District DRMC must develop an effective and robust emergency communication system.

14.3.5 **Media relations**

Responsibilities and protocols for the issue of media liaison press releases, media interviews in the event of a disaster occurring or threatening to occur must be predetermined by TLM.

16. **Action to be taken:**
TLM in cooperation with the Department: Corporate Services must develop clear guidelines for media and press liaison.
15. **Key Performance Indicators**

- Primary responsibility for contingency planning and co-ordination of known priority risks has been assigned and those agencies in supporting roles have been identified and responsibilities have been assigned.
- Contingency plans for known priority risks have been developed by municipalities, municipal organs of state and other municipal entities in TLM and are current.
- Mechanisms for the annual review and updating of contingency plans have been established.
- Field Operation Guides (FOG) for the various activities associated with disaster response and recovery for TLM have been developed and implemented.
- Mechanisms for the annual review and updating of FOGs have been established.
- An Incident Management System has been introduced and is operating effectively.
- Mechanisms for monitoring and reviewing the effective application of the IMS in TLM and for making consequential adjustments are established and implemented.

15.1 **Relief measures**

15.2.1 **Objective**

To ensure that relief operations following significant events and/or disasters, which occur in the area of TLM, are co-ordinated and equitably distributed.

TLM must ensure that all relief operations are managed in accordance with the national guidelines in term of standards, practices and regulating mechanisms.

TLM must develop a FOG, which clearly allocates responsibilities and sets out the procedures for:

- the release of appeals for donations;
- standards of relief;
- the duration of relief efforts; and
- the acceptance of external assistance.

**17. Action to be taken:**

TLM to develop a FOG for the management of disaster relief.
15.3 Key Performance Indicators

- A FOG for the management of relief operations in TLM, which conforms to national guidelines, has been developed and implemented.
- Progressive monitoring and review of the guidelines is undertaken annually, based on lessons learnt.

16.1 Rehabilitation and Reconstruction Process

16.2 Objective

To ensure that all rehabilitation and reconstruction strategies conducted following a disaster in TLM are implemented in an integrated and developmental context.

16.3 Establishing project teams for integrated rehabilitation and reconstruction

In order to ensure a holistic approach to rehabilitation and reconstruction following a significant event or a disaster in TLM, Lejweleputswa DRMC, and the organ of state tasked with primary responsibility for a known hazard must facilitate the establishment of project teams for specifically for this purpose. Checks and balances must be affected to ensure that projects and programmes maintain a developmental focus.

Project Teams established for this purpose will determine their own terms of reference and performance indicators and will report on progress to Lejweleputswa District DRMC and/or TLM.

16.3.1 Key Performance Indicators

- Mechanisms for the establishment of post disaster project teams for rehabilitation and reconstruction are in place and implemented.
- Mechanisms for monitoring rehabilitation and reconstruction projects are established.
- Progress reports on rehabilitation and reconstruction projects are prepared and submitted to Lejweleputswa DRMC, DRMC of the Free State Province and NDMC.
16.3.2 Monitoring of incidents and significant events, disaster reviews and reports

16.3.3 Objective

To establish mechanisms for monitoring and reviewing incidents and significant events to facilitate early warnings and to review disasters to evaluate effectiveness and for the purposes of improved planning and operations.

16.3.4 Monitoring incidents and significant events

TLM must establish mechanisms and harness the necessary expertise to enable the monitoring of trends and tracking patterns of major incidents and significant events as well as minor incidents, which could serve as early warnings. For example by monitoring a series of smaller incidents the identification of an increase of the scale and frequency of the incidents could serve as an early warning of more significant events of the same nature.

18. Action to be taken:
TLM should establish a mechanism for the continuous monitoring of different events. Also see section 3.1 above.

16.3.5 Disaster reviews and reports

In order to learn lessons from previous experience and to improve performance TLM must ensure that reviews are conducted routinely following all significant events and disasters occurring in its area. Such reviews are in addition to the reports required in terms Section 50 of Disaster Management Act, 2002 and must be fully documented as they will also serve as valuable training aids.

Reviews must be conducted in accordance with the review programme developed by NDMC.

TLM must ensure that resources are made available and that organs of state tasked with primary responsibility for specific known hazards make provision in budgets for conducting reviews.

16.3.6 Key Performance Indicators
- Mechanisms for progressive monitoring and research of incidents and significant events for the purposes of identifying trends and patterns which could serve as early warnings have been developed and provision has been made for funding.
- Review and research reports on significant events and trends are prepared in accordance with the national review programme and are routinely submitted to Lejweleputswa District DRMC, DRMC of Free State and NDMC.
- Review and reports on actual disasters are routinely submitted to Lejweleputswa District DRMC, DRMC of Free State Province and NDMC.

<table>
<thead>
<tr>
<th>TYPE OF HAZARD</th>
<th>This plan will be an overarching plan to deal with contingencies affecting the Community in Tswelopele Municipality</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAD DEPARTMENT</td>
<td>Community Services</td>
</tr>
<tr>
<td>RESPONSIBLE OFFICIALS</td>
<td>Municipal Manager : TL Mkhwan e Disaster Management Officer: Joshua Mambalo</td>
</tr>
</tbody>
</table>
| CONTACT DETAILS | 051 853 1111 / 083 5876 701 / 079 160 9875  
Fax: 051 853 1332 Email: mambaloj@tswelopele.org |

<table>
<thead>
<tr>
<th>FUNCTION FOR CONSIDERATION</th>
<th>ACTION</th>
<th>RESPONSIBLE DEPARTMENT AND PERSON</th>
<th>GENERAL INFORMATION</th>
</tr>
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<tbody>
<tr>
<td>Command and Control</td>
<td>Service in overall command at Disaster incident site</td>
<td>Sub Directorate Emergency Services.</td>
<td>JJJ.vn Rensburg (DA Maleho Clinic) 084 585 4111</td>
</tr>
<tr>
<td>Location of [Joint] Forward Command Post</td>
<td>To be determined, will be decided depending on the location of the incident</td>
<td>Col. Molise 082 4460 997</td>
<td></td>
</tr>
<tr>
<td>Location of Command Posts for individuals</td>
<td>Command post will be established in TLM</td>
<td></td>
<td>Technical Dept.: D.Wittes 083 573 2316</td>
</tr>
<tr>
<td>Vehicle Park</td>
<td>Staging areas will be established in accordance with the evaluation of the scene and the specific incident.</td>
<td></td>
<td>Mr A.Kaibe 072 204 0527 / 051 853 1111</td>
</tr>
<tr>
<td>Joint Operation Centre</td>
<td>The JOC can be at the technical department, JOC Vehicles is also available.</td>
<td></td>
<td>Mr Kobus Keyser 083 684 8383 / 051 853 1111</td>
</tr>
<tr>
<td>Warning instruction to Public</td>
<td>Public address systems (emergency</td>
<td></td>
<td>Municipal Manager 051 853 1111 or Senior</td>
</tr>
</tbody>
</table>

- D A Maleho Clinic: 051 853 1384  
Phahameng Clinic : 051 853 1384
<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
<th>Contact Person</th>
<th>Phone Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media Liaison</td>
<td>Sub Directorate Communication</td>
<td>M. January or Municipal Manager</td>
<td>073 666 451</td>
</tr>
<tr>
<td>Evacuation</td>
<td>Assembly Point</td>
<td>Mr. A. Kaibe 072 204 0527</td>
<td>051 853 1111</td>
</tr>
<tr>
<td>Transport from Assembly Point</td>
<td></td>
<td>Mr. A. Kaibe</td>
<td>051 853 1111</td>
</tr>
<tr>
<td>Details of Evacuees</td>
<td>Information of all evacuees to be captured on data files for future references and enquiries.</td>
<td>Mr. J. Mambalo</td>
<td>083 5876 701</td>
</tr>
<tr>
<td>Patrolling of Evacuated Area</td>
<td>SAPS</td>
<td>Lt. Col. Ngcotholozi</td>
<td>082 453 0800</td>
</tr>
<tr>
<td>Access Control of Evacuated Area</td>
<td>SAPS and Traffic and Security Committee.</td>
<td>Lt. Ramosili</td>
<td>051 853 1222/ 082 4666 717</td>
</tr>
<tr>
<td>Emergency Housing/Shelter</td>
<td>Individual requests are dealt with by the Sub Directorate Housing. Bigger incidents will require the input from the Property and land Management as well as Special Development Unit</td>
<td>I. Moletsane 051 853 1111</td>
<td>051 853 1111</td>
</tr>
<tr>
<td>Emergency Water</td>
<td>Dealt with the Water and Sanitation Sub directorate.</td>
<td>Mr. Polori</td>
<td>083 684 8383 / 051 853 1111</td>
</tr>
<tr>
<td>Emergency Power Supply</td>
<td>Dealt with by Technical Dept.</td>
<td>Mr. JJ. Moahlodi</td>
<td>082 928 1935</td>
</tr>
<tr>
<td>Emergency Housing Units/Tents/Caravans/Schools, etc.</td>
<td>Purchase and rental of units/tents/caravans to be done by Supply Chain Management. Utilization of municipal halls will be done in co-operation with Facilities Management.</td>
<td>Mr. Nelson Makwetla SCM 073 785 0174 / 051 853 1111</td>
<td></td>
</tr>
<tr>
<td>Emergency Feeding</td>
<td>SOCIAL DEVELOPMENT AND NGOS</td>
<td>JJJ. vn Rensburg</td>
<td>083 3575 324</td>
</tr>
<tr>
<td>Emergency Clothing</td>
<td>SOCIAL DEVELOPMENT</td>
<td>NG Moedergemeente</td>
<td>051 853 1872 / 051 853 1002</td>
</tr>
<tr>
<td>Health Clinic (DA Maleho Clinic)/ Phahameng Clinic</td>
<td>DEPT. OF HEALTH AND EMS</td>
<td>JJJ. vn Rensburg</td>
<td>083 3575 324</td>
</tr>
<tr>
<td>Registration of Evacuees</td>
<td>EMERGENCY SERVICES / DISASTER</td>
<td>Disaster Management Officer MR. J. Mambalo</td>
<td>083 5876 701</td>
</tr>
<tr>
<td>Role</td>
<td>Contact Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Control to Emergency Housing Centre</td>
<td>SAPS AND TRAFFIC AND SEC. COMM. 051 853 1332</td>
<td></td>
<td></td>
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| Lejweleputswa District Municipality/District Disaster Centre | DDMC | 082 515 5593 |

| **DISASTER MANAGEMENT:** | **DISASTER MANAGEMENT:** | **N.J.Mambalo** |
| Tswelopele Municipality | | 083 5876 701 |

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17 Enabler 1: information management and communication

Knowledge management, although a very broad term, relates to all the information needs and applications in order for TLM to effectively reduce disaster risk. This KPA will be addressed by focussing on information management and communication, education and training, public awareness and research.

17.1 Information management and communication

17.1.1 Objective

- To develop a comprehensive disaster risk management information system.

17.1.1.1 Tswelopele Local Municipality Disaster Risk Management Information System (DRMIS)

Disaster management is a collaborative process that involves all spheres of government, as well as NGOs, the private sector, a wide range of capacity-building partners and communities. It also requires capabilities to manage risks on an ongoing basis, and to effectively anticipate, prepare for, and respond to a diverse range of natural and other threats.

Effective, co-ordinated and integrated disaster risk management is dependent on an adequate and reliable information system. It is a critical instrument to ensuring that TLM has the capabilities to manage risk on a continuous basis; to effective monitor disaster and risk trends and patterns for the municipality for the purposes of planning and preparedness. It is also key to ensuring rapid and effective decision making and response to disasters and major incidents.

TLM must ensure that DRMC has the necessary capacity and appropriately skilled human resources to manage and maintain such a system and that TLM DRMIS is consistent with the national guideline for a disaster management information system.

19. Recommendation:

TLM to consider implementing a basic database of information relating to all matters of disaster risk management and its' role players as per chapters 16 and 17 of Disaster Management Act.
17.1.2 Strategic Communication

In order to implement effective disaster risk management, TLM DRMC must establish and maintain an integrated communication system for the municipality, which will enable effective communication links amongst disaster risk management role players and stakeholders.

The communication system must include a directory of role players, which is in accordance with section 16 of the Act as well as telecommunication capabilities. The system must be compatible with that of the district and provincial DRMC’s systems and must comply with the national guidelines. For the purposes of effective incident management and joint operations it must have the capacity to enable interagency communication amongst essential and emergency services.

The communication system must also make provision for the ongoing identification and engagement of innovative and meaningful locally-based communication and early warning methods, especially in remote, technologically isolated areas. These modes of communication must include the use of volunteers from local communities, the employment of indigenous knowledge and practices as well as co-operation with NGOs and CBOs.

TLM must establish mechanisms for the receipt, evaluation and dissemination of early warnings on a 24 hour basis. These mechanisms must include capabilities to enable two way emergency communications with communities at risk and must take into account the difficulties associated with communication with remote and technologically isolated areas.

TLM must ensure that DRMC has the necessary capacity and appropriately skilled human resources to manage and maintain such a system.

TLM and LDM DRMC, operating a central communication centre in partnership, should jointly evaluate their capacities and needs, and design and implement a strategic communication system.

17.1.3 Key Performance Indicators

- Disaster risk management information system has been established in accordance with the national framework and is functional.
- Mechanisms have been established to ensure that the disaster management information system including the electronic database is updated, maintained and tested at regular intervals.
Functional communication links between all necessary role players and systems to support the activities of DRMC have been established and are maintained.

17.1.4 Monitoring and Evaluation

In order to ensure that an effective communication system is maintained TLM DRMC must develop and implement mechanisms for ongoing testing of the communication system and the preparation and submission of reports in this regard. The mechanisms must include regular communication exercises and test calls.

A continuous system of updating the information in the database must also be implemented to ensure the data is up to date and relevant.

ENABLER 2: EDUCATION, TRAINING, PUBLIC AWARENESS AND RESEARCH

18. Education and Training

18.1 Objectives

- To promote and facilitate non-accredited and accredited education and training opportunities for all disaster risk management stakeholders in TLM.
- To identify and implement appropriate disaster risk management training programmes for schools in the area to increase knowledge and capacity.
- To identify and implement appropriate disaster risk management training programmes for the communities to increase knowledge and capacity.
- To ensure that traditional knowledge and coping strategies are included in the training programmes where appropriate.

18.2 Schools Programmes

Efforts should be made to implement disaster risk management training programmes in schools, for the purposes of disseminating information on disaster risk management and risk avoidance. The creation of programmes in schools, focusing on relevant and appropriate aspects of disaster risk management, must be encouraged.
20. Recommendation
TLM DRMC to approach the local Department of Education and relevant Schools Governing Bodies in order to jointly implement schools awareness programmes focussing on the most prevalent hazards in the particular areas.

18.3 Dissemination and use of traditional knowledge

All training and awareness programmes undertaken within TLM must take into account indigenous knowledge relating to disaster risk management, as per section 7(2) (j).

21. Recommendation
All traditional leaders in TLM area of responsibility to be made aware of disaster risk management issues, co-opted to DMAF (where applicable) and traditional knowledge must be incorporated into TLM disaster risk management planning and awareness programmes.

18.4 Community training programmes

Education and training programmes for communities must focus on risk awareness, risk reduction and preparedness. Where appropriate, communities must be given the opportunity to modify and enhance training programmes through the inclusion of indigenous knowledge, practices and values, and the incorporation of local experience of disaster and disaster risk management. Cognisance of the risk assessment for the area must be taken when such programmes are developed.

22. Recommendation
TLM to utilise the envisaged ward disaster risk management structures to serve as a mechanism for community training.

18.5 Government Officials and relevant role players

Training programmes for government officials and policy makers must include modules on planning, hazards, prevention, risk reduction and preparedness.
18.6 Key Performance Indicators

- An assessment of disaster risk management education and training needs is conducted annually.
- Appropriate courses have been identified for the relevant interest groups.
- A disaster risk management education and training programme is developed for each financial year and is implemented.
- Comprehensive reports on education and training conducted in the municipality are submitted annually to the District and Provincial DRMCs.

18.7 Monitoring and Evaluation

TLM DRMC must establish mechanisms for reporting progress with the disaster risk management education training programmes in the municipality and must submit reports annually to District and Provincial DMCs.

23. Recommendation

TLM should develop a policy with regards to education and training in the field of disaster risk management, and that the necessary funding is made available.

18.8 Public Awareness

18.8.1 Objective

- To develop and implement a public awareness programme which insures an alert, informed and self-reliant public in TLM.

18.9 Public Awareness Policy

An integrated public awareness strategy to promote a culture of risk avoidance among all role players and across all departments must be developed and implemented. Such a strategy is necessary for the promotion of an informed, alert and self-reliant society capable of playing its part in supporting and co-operating with the municipality in all aspects of risk and vulnerability reduction.

The ability of the public to understand the nature of commonly encountered hazards in their communities to manage and reduce risks; to develop risk avoidance behaviour patterns; and
to respond appropriately and timeously when disasters occur or are threatening to occur, is dependent on knowledge and access to reliable information.

In order to inculcate risk-avoidance behaviour by all stakeholders, public awareness campaigns aimed at raising consciousness about disaster risks must provide information on how to reduce vulnerability and exposure to hazards.

Public information should be disseminated through the media, schools, and public gatherings and through any other suitable network.

19. Media involvement

The local print and radio media should be involved in efforts to increase community awareness and therefore should be included in the public awareness campaigns as far as possible.

19.1 Key Performance Indicators

- A public awareness policy with specific focus on risk reduction has been developed and implemented.
- Risk reduction is the focus of all disaster risk management awareness programmes.
- Awareness of disaster risk management is widespread and risk avoidance behaviour is an integral part of the daily lives and activities of the public of TLM.

19.2 Monitoring and Evaluation

TLM must conduct regular surveys and introduce other innovative mechanisms to evaluate the effectiveness of the public awareness programmes and must compile reports on the findings. The outcome of such initiatives must be used to inform future planning.

24. Recommendation

That TLM develop a policy with regards to a public awareness programme, and ensure that the necessary funding is available.
19.3 Research

In order to stay abreast with a dynamic changing environment, TLM must ensure a continued research agenda is developed in order to better disaster risk management practices and information.

19.3.1 Objective

- Promotion and facilitation of disaster risk management research.

19.3.2 Research Programmes

TLM DRMC must establish mechanisms to promote and support disaster risk management research in the municipality. In this regard TLM DRMC must enter into discussions with institutions of higher learning and other technical experts to identify appropriate research mechanisms.

All research programmes should firstly be focussed on the risk profile of TLM and to address critical issues of vulnerability. In the light of the fact that scientific research is a specialised field, TLM should engage institutions of research as partners to address identified issues.

19.3.3 Evaluations and feedback

TLM DRMC must ensure that relevant information identified through the research process is incorporated into the necessary planning and awareness processes of TLM, with a view of reducing disaster risk.

19.3.4 Key Performance Indicators

- Mechanisms are established for promoting and facilitating disaster risk management research in the municipal area.

19.3.5 Monitoring and Evaluation
TLM DRMC must establish mechanisms for reporting progress with the disaster risk management research programmes in the municipality and must submit reports annually to the district and provincial disaster management centres.

25. Recommendation

That TLM develop networks with institutions of higher learning and other role-players involved with research in the area, in order to pool information and to include relevant information in training, education and awareness programmes.

20. ENABLER 3: FUNDING ARRANGEMENTS FOR DISASTER RISK MANAGEMENT

Section 7(2)(k) of the DMA requires that the national disaster management framework makes provision for “a framework within which organs of state may fund disaster risk management with specific emphasis on preventing or reducing the risk of disasters, including grants to contribute to post-disaster recovery and rehabilitation and payment to victims of disaster and their dependants”. Given the provisions of the Act, funding arrangements must be designed in a manner that ensures that disaster risk management activities are funded adequately and in a sustainable way. This enabler describes the disaster risk management funding arrangements for TLM departments.

20.1 Objective

The objective of Enabler 3 is to establish mechanisms for the funding of disaster risk management in TLM.

20.1.1 Legislative framework for funding arrangements

The following primary legislation provides the context within which funding arrangements for disaster risk management should be designed:

- Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996);
- Disaster Management Act, 2002, (Act No. 57 of 2002);
- Public Finance Management Act, 1999 (Act No. 1 of 1999) (PFMA);
- Municipal Finance Management Act, 2003 (Act No. 53 of 2003) (MFMA); and

The Constitution assigns exclusive or concurrent functions to different spheres of government. Schedule 4 of the Constitution designates disaster risk management as a concurrent national and provincial competence. However, the Act places the responsibility for
certain disaster risk management activities squarely within the local government sphere. For example, section 23(7) of the Act states that until a disaster is classified as either a national or a provincial disaster, it must be regarded as a local disaster.

In terms of section 10A of the Municipal Systems Act as amended, the disaster risk management function imposes new constitutional obligations on local government. These obligations are that the responsible Cabinet member, MEC or other organ of state must take appropriate steps to ensure sufficient funding and capacity-building initiatives as may be needed for the performance of the assigned function. Since disaster risk management at municipal level encompasses a wide range of activities (including disaster risk reduction, preparedness, response and recovery), funding mechanisms must be designed to allocate optimal resources to each of these activities.

Chapter 6 of the Disaster Management Act outlines two principles that should be applied to funding the cost of a disaster when such an event is declared. Firstly, section 56(2) of the Act states that in the event of a disaster, ‘national, provincial and local organs of state may financially contribute to response efforts and post-disaster recovery and rehabilitation’. Secondly, the Act assigns the responsibility for repairing or replacing infrastructure to the organ of state responsible for the maintenance of such infrastructure. Section 57 of the Act, however, provides some leeway for a municipality government to request financial assistance for recovery and rehabilitation from provincial and/or national government.

The Act attempts to encourage budgeting for disaster recovery and rehabilitation through threshold funding. Section 56(3) allows the Minister to prescribe a percentage of the budget of a municipal department and entities as a threshold for accessing national funding for disaster response efforts. The extent to which an organ of state has implemented disaster risk reduction efforts will be taken into account when requests for disaster response and post-disaster rehabilitation funding are considered.

The broad funding guidelines set out in sections 56 and 57 of the Act make access to disaster recovery and rehabilitation funding contingent on organs of state earmarking funds for disaster risk reduction activities. This principle reduces the risk of moral hazard behaviour on the part of municipal departments and entities by ensuring that they budget for all disaster risk management activities. In this way, national government does not implicitly guarantee the provision of financial assistance to organs of state for disasters that could have been reasonably prevented or reduced in some way.

Apart from the Act, there are other legislative provisions that govern the release of funds for disaster recovery and rehabilitation. Sections 16 and 25 of the PFMA allow the Minister of Finance or relevant MEC to appropriate funds from their respective revenue funds for use in
emergency situations. Funds released in terms of these provisions must be reported to the provincial legislature and to the Auditor-General within 14 days of their authorisation. In addition, these funds must be attributed to a vote when the adjustments budget is passed.

Similarly, section 29 of the MFMA allows the Mayor of a municipality to authorise unforeseeable and unavoidable expenditure in an emergency. Such expenditure must be ratified by the council in an adjustments budget within 60 days of the expenditure having been incurred. Furthermore, section 29(2)(b) of the MFMA states that unforeseeable and unavoidable expenditure may not exceed a percentage of the budget. This restricts the amount of funds available to respond to emergencies. This percentage must be prescribed by National Treasury in regulations.

20.2 Principles underpinning funding arrangements

Any funding arrangement must be consistent with the principles set out in DMA and any other related legislation. It should be borne in mind that disaster risk management has certain unique characteristics which differ markedly from public services such as education and street lighting. Disasters are by their very nature unpredictable and require an immediate and decisive response. It is vital, therefore, that a balance is struck in the financing framework between the need for financial controls and oversight and the need to ensure that rapid response and recovery are not compromised. Section 214(2)(j) of the Constitution explicitly mentions ‘the need for flexibility in responding to emergencies or other temporary needs’ as one of the criteria for the equitable division of nationally collected revenue among the three spheres of government.

20.3 Overview of funding arrangements

Funding arrangements for disaster risk management must be based on the legislative framework outlined in section 10.1 above and take into account the various criteria for an optimal funding mechanism.

20.3.1 Funding options for disaster risk management

The responsibilities imposed by the Act on municipal departments and entities require substantial start-up costs, including both investments in infrastructure for municipal disaster risk management centres as well as funding for capacity building. The start-up costs associated with LDRMC must therefore be covered by the normal budgeting process of TLM. The incorporation of disaster risk management within other TLM departments should also
enjoy attention and provision should be made for any costs incurred in this institutional capacity building exercise.

DMA assigns responsibility for the management of local disasters to municipalities. If municipalities are unable to perform this function because of a lack of institutional capacity, then responsibility for managing the disaster is escalated to provincial level. However, the relevant municipality is generally the organ of state closest to the disaster, and can often therefore respond the fastest. The option of providing no funding will thus create inefficiencies in the system by limiting the ability of municipal departments and entities to engage in disaster risk reduction activities and also respond effectively to disasters.

### 20.3.2 Funding arrangements in Tswelopele Local Municipality

Each municipality department must include disaster risk management activities as part of their annual budget. All aspects and responsibilities described in this plan must be taken into consideration when budgeting for disaster risk management. Each department and division should ensure that their budgets for disaster risk management are aligned with the strategic objectives of TLM. Such alignment must also aim towards the reduction of duplication and/or address the lack of appropriate budgeting for disaster risk management.

#### 20.4 Key performance area 1: Integrated institutional capacity for disaster risk management and Enabler 1: Information management and communication

KPA 1 focuses on creating the institutional capacity within all TLM departments for the purpose of disaster risk management. It describes the various intergovernmental structures that facilitate consultation on issues relating to disaster risk management; key responsibilities of LDRMC and the minimum infrastructural requirements for the establishment of LDRMC.

Enabler 1 focuses on the establishment of a comprehensive information management and communication system to ensure that all role-players have access to reliable hazard and disaster risk information for the purposes of effective disaster risk management and risk reduction planning. NDMF requires that the cost of developing an information management and communication system is included in the start-up costs for disaster risk management centres.

#### 20.4.1 Funding options

To establish integrated institutional capacity to enable the effective implementation of disaster risk management policy and legislation, funding will be required for the ongoing operations of LDRMC. This will be budgeted for through the normal municipal budgeting process.
20.4.2 Key performance indicators

- LDRMC has an adequate allocated budget for ongoing disaster risk management activities in TLM according to legislative requirements and municipal policies.

20.5 Key performance area 2: Disaster risk assessment

20.5.1 Funding options

Disaster risk assessments should be funded through the budgets of the relevant municipal department and entity. Section 20 of the Act requires NDMC to provide guidance to organs of state on ways of determining levels of risk and vulnerability. Similarly, section 33 enjoins PDMC to provide guidance to organs of state on disaster risk assessments. In the same manner LDRMC must provide guidance to municipal departments and entities on conducting disaster risk assessments. The use of a standard format for disaster risk assessments will contribute towards reducing the variability of costs across the various municipal departments and entities. Costs involved in updating disaster risk assessments must be budgeted for on a regular basis.

Expenditure incurred in monitoring disaster risk must be part of the routine operation of the relevant municipal department and entity and LDRMC, and must be budgeted for accordingly.

20.5.2 Imperatives

Disaster risk assessments must be funded through the recurrent budgets of municipal departments and entities. The costs of initial disaster risk assessments undertaken by municipal departments and entities must be included in the start-up costs and funded through the local government conditional grant.

20.5.3 Key performance indicators

- Disaster risk assessment is a budgeted for and is a cost item on the budget of each municipal department and entity.

20.6 Key performance area 3: Disaster risk reduction
In terms of funding arrangements, this KPA can be separated into disaster risk management planning and disaster risk management implementation. The Act requires all spheres of government to plan and implement disaster risk reduction projects and programmes in line with the IDP of the municipality.

### 20.6.1 Funding options

Disaster risk management planning must be included in the IDP of TLM. Sectoral plans must also include specific disaster risk management plans for the relevant departments within the municipality. These planning processes must be funded through the budgets of the relevant municipal departments and entities. If disaster risk management planning is integrated into general IDP processes, then little or no additional budgetary allocation for disaster risk management will be required.

Municipal departments and entities must include risk reduction as part of a broader strategy to reduce the overall risk and fiscal exposure of their organisations. In addition, risk reduction activities, including preparedness, must be part of the operational activities of the various municipal departments and entities and must be reflected in their plans and budgets. Any new infrastructure developments should include the costs of structural mitigation measures.

When additional expenditure is required to develop structural mitigation infrastructure, municipal departments and entities must establish whether they could fund such projects from their own resources. If they lack funds to implement these projects, they must include the costs of structural mitigation infrastructure in their three-year capital plans. TLM must prioritise these projects in its IDP.

Section 19 of the MFMA requires that a municipality conduct a feasibility study before it can budget for a capital project. The feasibility study must include disaster risk assessment findings and Action to be taken for disaster risk reduction. If the project goes ahead, the cost estimate of mitigation infrastructure or measures should be included in the total cost of the project. Funds can be accessed either through the B component grant for basic services infrastructure, or through the P component grant for any additional funds required to reduce risks associated with existing infrastructure. The benefit of this option is that the conditionality of the grant can help to ensure that disaster risk reduction is integrated into infrastructure development, thus reducing the risk of disasters in the long term.

In the case of activities or projects aimed at preventing or reducing a national priority disaster risk, municipal departments and entities may apply for additional funding from NDMC. NDMC may choose to place a limit on the funding available per project.
20.6.2 Preparedness

In terms of the Act, section 53(j) states that municipal disaster management plans ‘must facilitate maximum emergency preparedness’. The Act prescribes one of the means through which this can be done in section 58(1), which provides metropolitan or district municipalities with the option of establishing units of volunteers to participate in disaster management. The FFC has noted that there are costs involved in emergency preparedness, such as the costs of recruiting, training and mobilising volunteers. Since disaster management is deemed to be a new constitutional function for local government, strong arguments can be made for funding the costs associated with preparedness, including the recruitment and training of volunteers, through an increase in the equitable share. Alternatively, the costs may be funded through the budgets of municipal departments and entities. However, a drawback of this option is that preparedness activities may be underfunded. In addition, municipalities may not have sufficient resources to fund the extra costs associated with preparedness.

20.6.3 Imperatives

Cost expenditure on routine disaster risk management activities must be funded through the budgets of the relevant municipal department or entity.

Preparedness must be funded through the budgets of municipal departments and entities as part of their routine disaster risk management activities.

Additional structural mitigation infrastructure must be funded through local government conditional infrastructure grants.

20.6.4 Key performance indicators
- Budgets in all municipal departments and entities include the costs of routine disaster risk reduction measures and activities.
- Preparedness actions are funded through the recurrent budgets of all relevant municipal departments and entities.
- Feasibility studies for capital projects include information drawn from disaster risk assessments and appropriate disaster risk reduction measures.
- Capital budgets clearly reflect the cost of disaster risk reduction.

20.7 Key performance area 4: Response and recovery

Chapter 6 of the Act governs the funding arrangements for disaster response and recovery and rehabilitation and reconstruction. Section 56(3) requires that organs of state set aside a percentage of their budgets for post-disaster recovery efforts. Access to national funding is
dependent on whether the organ of state affected by the disaster had taken sufficient risk reduction measures to reduce the severity and magnitude of the disaster.

20.7.1 Funding options

The main activities within the broad scope of disaster response and recovery include:

- Early warnings;
- Disaster response and recovery operations;
- Relief measures; and
- Rehabilitation and reconstruction.

20.7.1.1 Early warning

Development, implementation and dissemination of early warnings form part of the routine planning processes undertaken by municipal departments and entities and must therefore are funded through their existing budgets. LDRMC plays a significant role in identifying and monitoring potential hazards and disseminating early warnings. These activities must be funded through LDRMC budget.

20.7.1.2 Disaster response and recovery operations

The importance of rapid response in the event of a disaster cannot be underestimated. Funds need to flow quickly to support response and recovery efforts. Rescue efforts, provision of immediate basic services, emergency health services and critical infrastructure repair all form part of response and recovery.

Currently there are no dedicated funding mechanisms for disaster response and recovery operations, and resources are not released quickly enough to maximise the effectiveness of response activities. The use of section 16 of the PFMA as a mechanism to release emergency funds from the central contingency fund is problematic as it requires ministerial authorisation, which increases the lead time between the declaration of a disaster and access to emergency funds.

20.7.1.3 Funding response and recovery

The fundamental principle underpinning provisions relating to funding in the Act is that all municipal departments and entities must budget for costs involved in disaster response and recovery. This principle places the onus for funding the initial costs associated with a disaster on the municipal departments and entities involved in response and recovery operations. Once budgets for response and recovery activities have been exhausted, the relevant municipal departments and entities may request financial assistance from provincial and/or
national government. Financial assistance will only be provided after taking into account the disaster risk reduction measures taken prior to the onset of the disaster.

The Act entrenches this principle of self-funding by allowing the Minister designated to administer the Act to prescribe a percentage of the budget of a municipal department and entity that will act as a threshold for accessing future funds from the central contingency fund.

The National Disaster Management Framework suggests that Tswelopele Local Municipality allocates a threshold of 1% of its own revenue to funding response and recovery (see Table 7.2 in the National Disaster Management Framework).

This threshold must be viewed within the context of the magnitude and extent of a disaster. The threshold must be reviewed at least two years after the publication of the framework, once information on the costs of different disasters are available.

Once TLM has exhausted its thresholds, it should then request financial assistance from the Free State Provincial Government. If the equitable share increases, then the basis for determination of the threshold percentages can be changed to the total revenue received by the municipality.

The department must ensure mechanisms are put in place by which funding can be accessed from TLM central contingency reserve. Such mechanisms must be linked to strict guidelines and should only be accessible once a disaster has been declared in terms of DMA.

20.7.1.4 Relief measures

The aim of relief measures is to provide immediate access to basic necessities for those severely affected by disasters. The National Disaster Fund disburses funds for emergency relief to communities.

These funds are budgeted for in the Department of Social Development's vote. Provincial departments of social services and poverty alleviation also provide relief to affected communities.

20.7.1.5 Rehabilitation and reconstruction

The Act places the onus for rehabilitation and reconstruction of infrastructure on the municipal departments and entities responsible for maintaining such infrastructure. However, rehabilitation is not only limited to infrastructure repair, it also includes rehabilitation of the environment and communities. Rehabilitation and reconstruction projects can be funded through:

- Own budgets;
- Conditional grants;
- Reprioritisation within existing capital budgets; and
• Access to the central contingency fund.

The methods of funding rehabilitation and reconstruction are complementary rather than competing. Ideally, municipal departments and entities should fund their expenditure on rehabilitation and reconstruction from their budgets up to the threshold. The next alternative should be to reprioritise within their capital budgets. The use of funds from the contingency reserve should be considered only as a last resort.

• Own budgets
Thresholds are applicable not only to response and recovery operations but also to rehabilitation and reconstruction. Depending on the extent of infrastructural damage, municipal departments and entities may be able to fund rehabilitation and reconstruction costs from their own budgets up to the threshold. Rehabilitation and reconstruction costs are generally high, so municipal departments and entities may need to fund these costs from a combination of sources, including own budgets, reprioritisation and the central contingency fund.

• Conditional grants
Municipalities can access funding through Municipal Infrastructure Grant (MIG). The MIG formula differentiates between new and rehabilitated infrastructure in a ratio of 80:20. Since MIG augments the capital budget as a whole and is not a project-by-project grant, it is possible for municipalities to use part of the allocation for post-disaster rehabilitation purposes.

20.7.2 Imperatives

The dissemination of early warnings must be funded through the budgets of municipal departments and entities as part of their routine disaster risk management activities.

Measures need to be implemented to ensure that disaster response and recovery operations are funded through the budgets of municipal departments and entities up to the prescribed threshold. Once the threshold is reached, additional funding would be needed to be accessed through the central contingency fund.

Funding mechanisms for relief measures need to be reviewed in order to reduce the time it takes victims of disasters to gain access to relief assistance.

As far as possible municipal departments and entities must fund rehabilitation and reconstruction projects from their own budgets and conditional grants.
Mechanisms for the rapid release of funds from the central contingency reserve for the reconstruction of basic service infrastructure where infrastructure is needed to safeguard lives and livelihoods must be developed.

20.7.3 Key performance indicators

- Development, implementation and dissemination of early warnings are funded through the recurrent budgets of the relevant municipal department and entities.
- The percentage of the budget of a municipal department and entity as a threshold for accessing additional funding from provincial and national government for response and recovery efforts has been established and implemented.
- Response and recovery efforts are funded through budgeted threshold allocations.
- A mechanism has been developed to ensure rapid access to national funds for disaster response.
- Municipal departments and entities have budgeted for threshold allocations.
- People, households and communities affected by a disaster have immediate access to relief measures.
- Financial thresholds for rehabilitation and reconstruction funding have been set.
- Rehabilitation and reconstruction efforts are funded through a combination of own budgets, reprioritisation, budgeted threshold allocations and conditional grants.

20.8 Enabler 2: Education, training, public awareness and research

Education, training, public awareness and research are crucial to the success of disaster risk management and disaster risk reduction strategies. It is envisaged that education, training and research initiatives as well as broad-based public awareness programmes will be undertaken by a range of municipal departments and entities and other institutions.

20.8.1 Funding options

The various initiatives within the scope of this enabler are broadly grouped as follows:

- Education and training;
- Integrated public awareness; and
- Research programme and information and advisory services.

- Education and training

Tswelopele DRMC must make budgetary provision for the implementation of a national needs and resources analysis to determine the disaster risk management education, training and
research needs of those involved in disaster risk management across sectors, levels and disciplines in TLM.

- **Integrated public awareness strategy**

Tswelopele DRMC is responsible for developing an integrated public awareness strategy to encourage a culture of risk avoidance in all municipal departments and entities and in communities. In addition, municipal departments and entities are required to formulate appropriate public awareness campaigns within the framework of the integrated public awareness strategy. LDRMC must budget for the development and implementation of such a strategy.

Line departments involved in public awareness programmes must budget for the development and implementation of programmes relevant to their functional areas. In addition, they must be able to access funds for specific programmes aimed at creating awareness around municipal priority disaster risks from LDRMC. TLM must include public awareness campaigns in community participation processes. In this way, they will not require additional funds for these programmes.

TLM should also forge links with CBOs, NGOs and the private sector in order to share costs for dedicated public awareness programmes that focus on priority risks.

- **Research programme and information and advisory services**

Once Tswelopele DRMC has developed its research agenda, it should approach various other government departments, international donor organisations, private companies, research foundations and NGOs to fund disaster risk management research. Tswelopele DRMC must also allocate a portion of its budget to research activities and routine post-disaster reviews. Technical line departments that are regularly affected by disasters must budget for research on priority risks and disaster risk reduction.

The content of the information management database must be electronically accessible to any person free of charge. The cost of information provision and advisory services should be kept to a minimum and funded through the budget of Tswelopele DRMC awareness programmes that focus on priority risks.

**20.8.2 Imperatives**

The costs associated with accredited education and training must be recovered through SETAs. This should be seen as the funding mechanism of choice. The costs associated with
education and training programmes that are not accredited must be funded through the budgets of the relevant municipal department and entity.

The cost of research must be funded through the budgets of LDRMC and by the private sector, research foundations, NGOs and donors.

20.8.3 Key performance indicators

- There is documented evidence of an increase in expenditure on accredited education and training programmes.
- Municipal departments and entities recover their expenditure on accredited education and training from the relevant SETAs.
- The conditions of the MSIG have been extended to cater for disaster risk management education and training programmes.
- All municipal departments and entities involved in public awareness budget for integrated public awareness programmes.
- Partnerships between municipal departments and entities and the private sector, NGOs and CBOs, exist for the purpose of funding public awareness programmes and projects.
- Funds are available from government departments, international donor organisations, private companies, research foundations and NGOs for research programmes.