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Implementing Disaster Risk Reduction in Municipalities

First Annual Conference in Disaster Risk Reduction

Dr. Herman Booysen

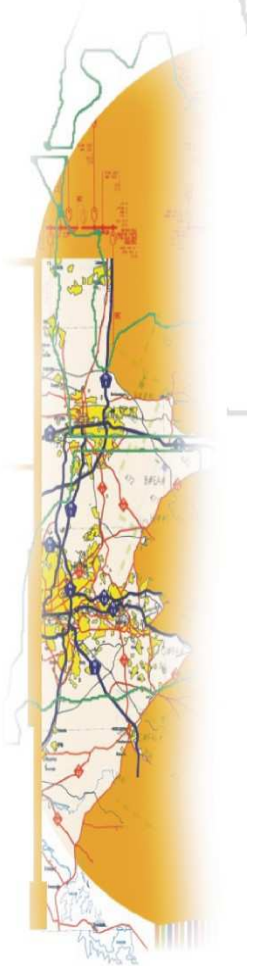
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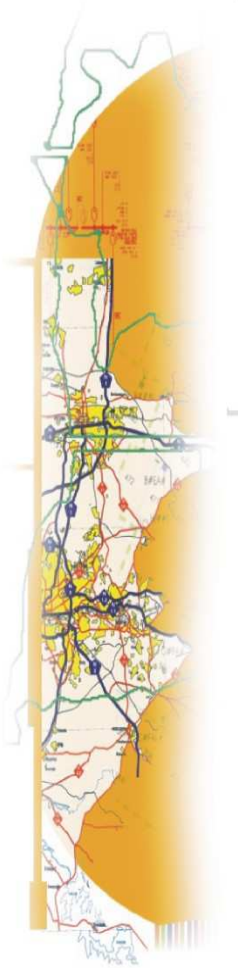
Contents



- Process of implementing Disaster Risk Reduction Measures
- Risk Reduction and Integrated Development Planning (IDP)
- Inputs for compiling disaster risk reduction measures



Process of implementing Disaster Risk Reduction Measures



District Disaster Management Advisory Forum (DDMAF)



Strategic

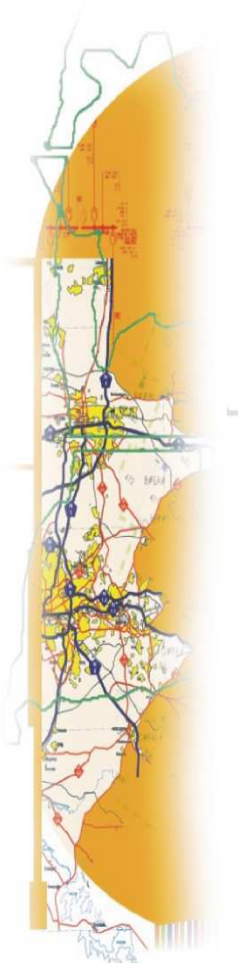
Disaster Risk Reduction Strategies

Prevention

Effective Land-use Planning
Basic Public Works
Effective Municipal Services

Mitigation

Structural Measures
Non-Structural Measures



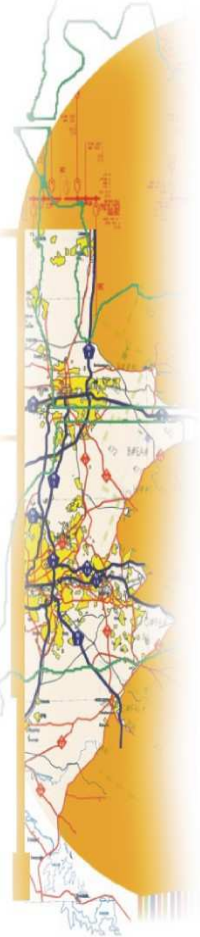
Inter-departmental Committee's (District & Local)



Tactical

Disaster Risk Reduction Plans, Projects and Programmes

Change Residential to Recreation
Disaster Aid and Relief
Building Regulation
Flood Wall



Municipal Disaster Management Advisory Forum (Local)

(MDMAC / F)

Operational

Disaster Risk Reduction Plans, Projects and Programmes

Implementation of above-mentioned plans, projects
and programmes

Align with Spatial Development Plan

Align with IDP



Disaster Risk Reduction Strategies



District Disaster Management Advisory Forum (DDMAF)

Strategic Level

Prevention

Effective Land-use Planning
Basic Public Works
Effective Municipal Services

Mitigation

Structural Measures
Non-Structural Measures

District Inter-departmental Disaster Management Committee (DIDMC) Local Inter-departmental Disaster Management Committee (LIDMC)

Tactical Level

Disaster Risk Reduction Plans, Projects and Programmes

Change Residential to Recreation
Disaster Aid and Relief
Building Regulation
Flood Wall

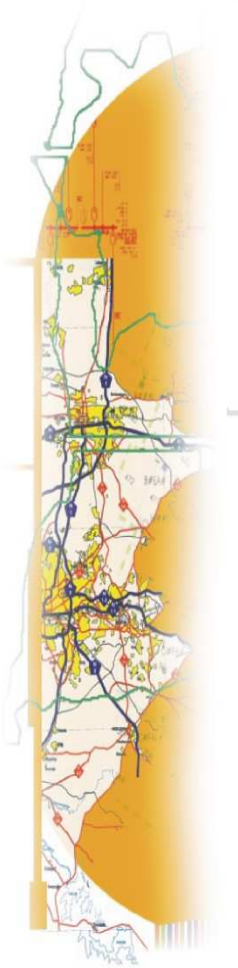
Municipal Disaster Management Advisory Forum (MDMAF)

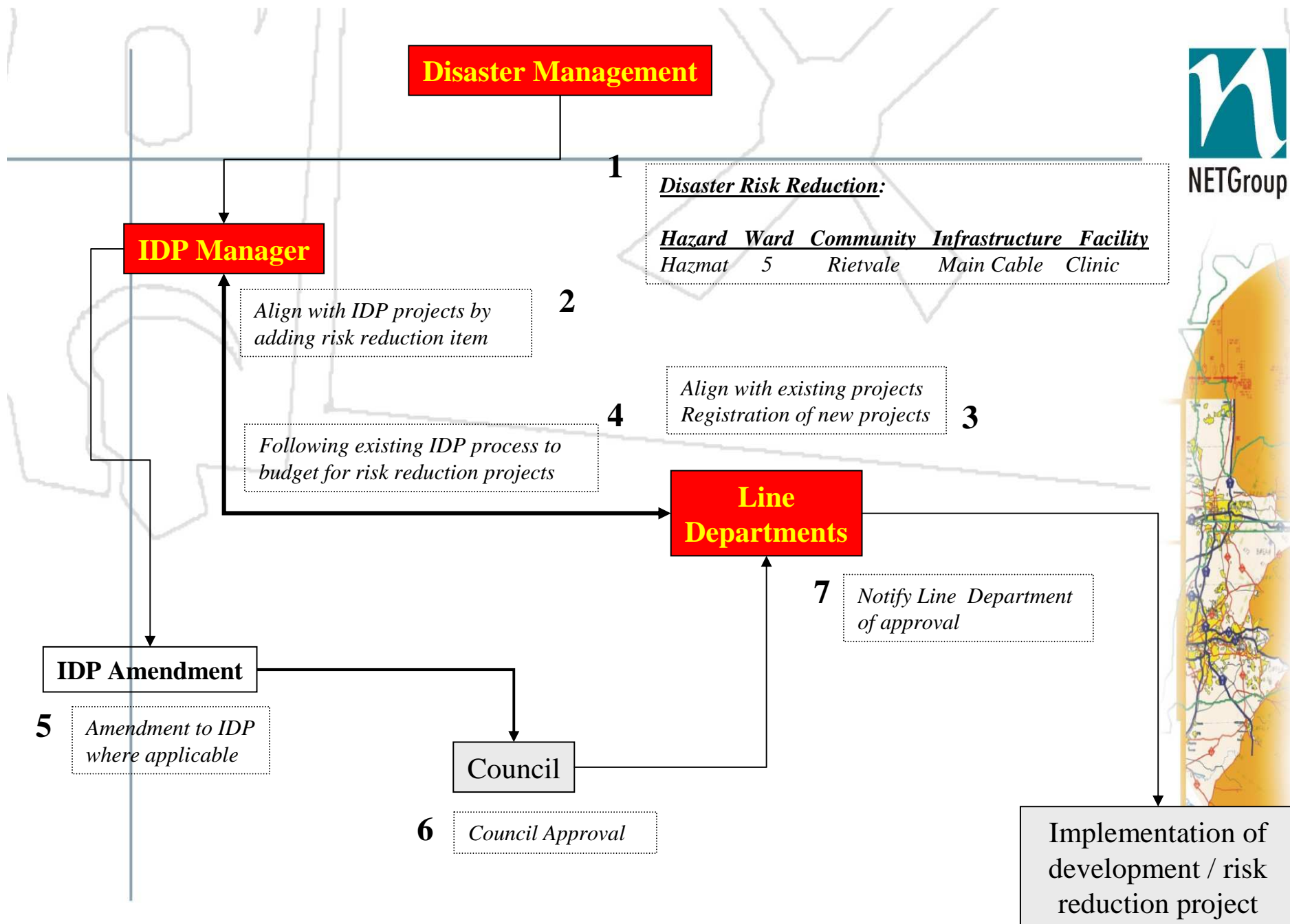
Operational Level

Implementing Disaster Risk Reduction Plans

Implementation of above-mentioned plans, projects
and programmes
Align with Spatial Development Framework
Align with IDP

Disaster Risk Reduction and IDP





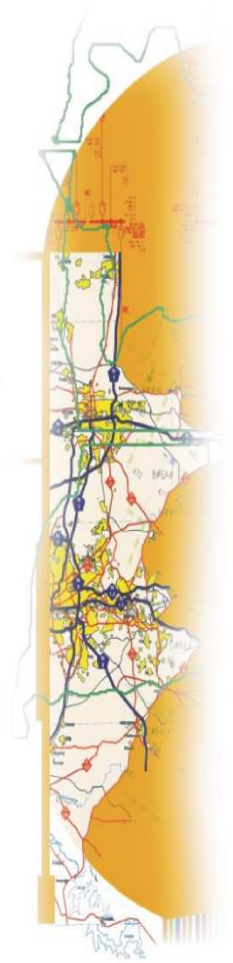
Inputs for compiling disaster risk reduction measures



- Line Department (Engineering, Planning, Security etc.)
 - Disaster risk assessment is executed for each hazard
 - Roles and responsibilities
- Risk reduction on ward level

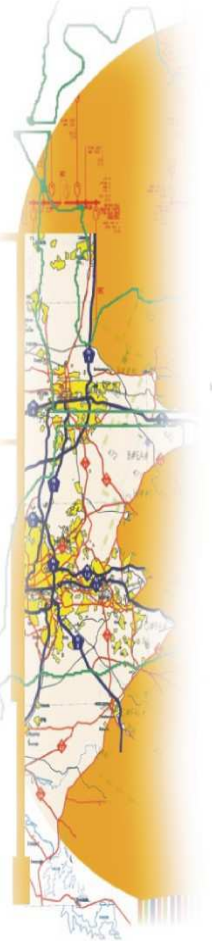


Hazard and risk assessment



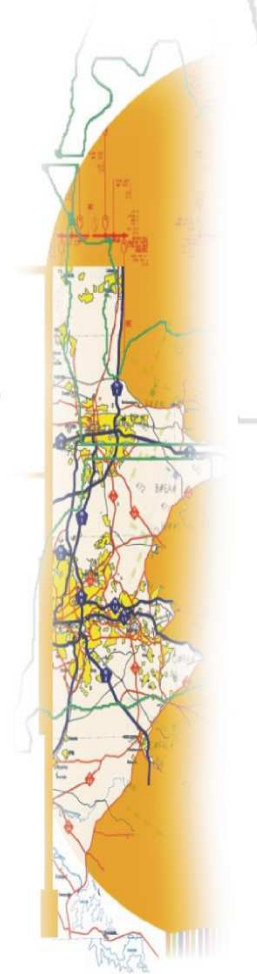
Identification of hazards

- Indigenous Knowledge
 - Create base maps from GIS data
 - During workshops location of historical events and possible hazards are captured
- Scientific methods
 - Relevant methodologies are used with GIS techniques to identify and analyse possible hazards



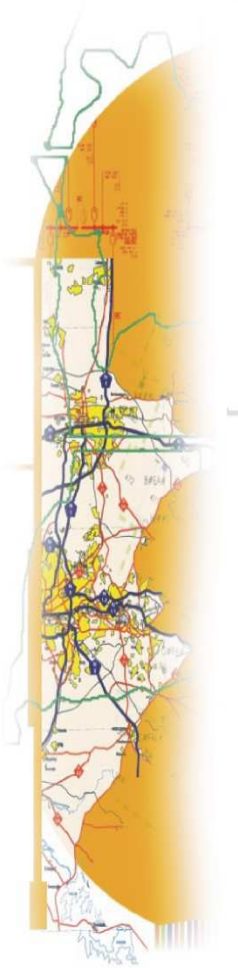
Hazard Assessment

Hazard	Data	Hazard Identification		Risk and vulnerability	
		Maps	Table	Maps	Table
Natural hazards					
<u>Hydrometeorological</u>					
Hydrological					
Floods					
Dam break					
Drought					
Coastal hazards					
Climate					
Extreme weather					
<u>Geological hazards</u>					
Seismic hazards					
Earthquake					
Rockfalls					
<u>Biological hazards</u>					
Veld fire					
Epidemics					
Diseases					
<u>Environment hazards</u>					
Air					
Air pollution					
Vegetation					
Agricultural practices					
Water					
Pollution					
Wetlands					
Soil					
Erosion assessment					
Hazards induced by humans					
<u>Environmental</u>					
<u>Social conflict</u>					
<u>Technological</u>					
Installations					
Hazmat					
Spills					
Emissions					
Toxic Cargo					
Marine discharge					
Transport					
Air					
Road					
Pedestrian Hazard					
Sea					
Rail					
<u>Social impacts</u>					
Water					
Sanitation					
Electricity					
Income					

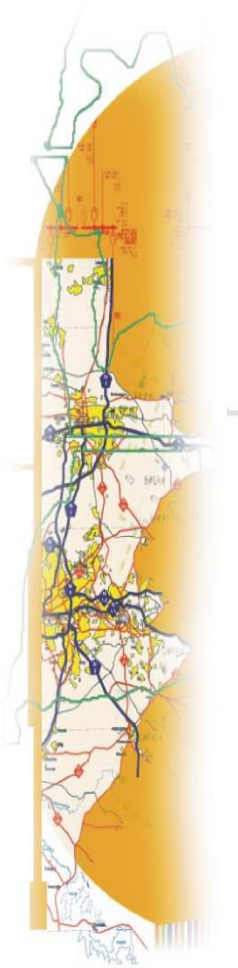


Profile maps

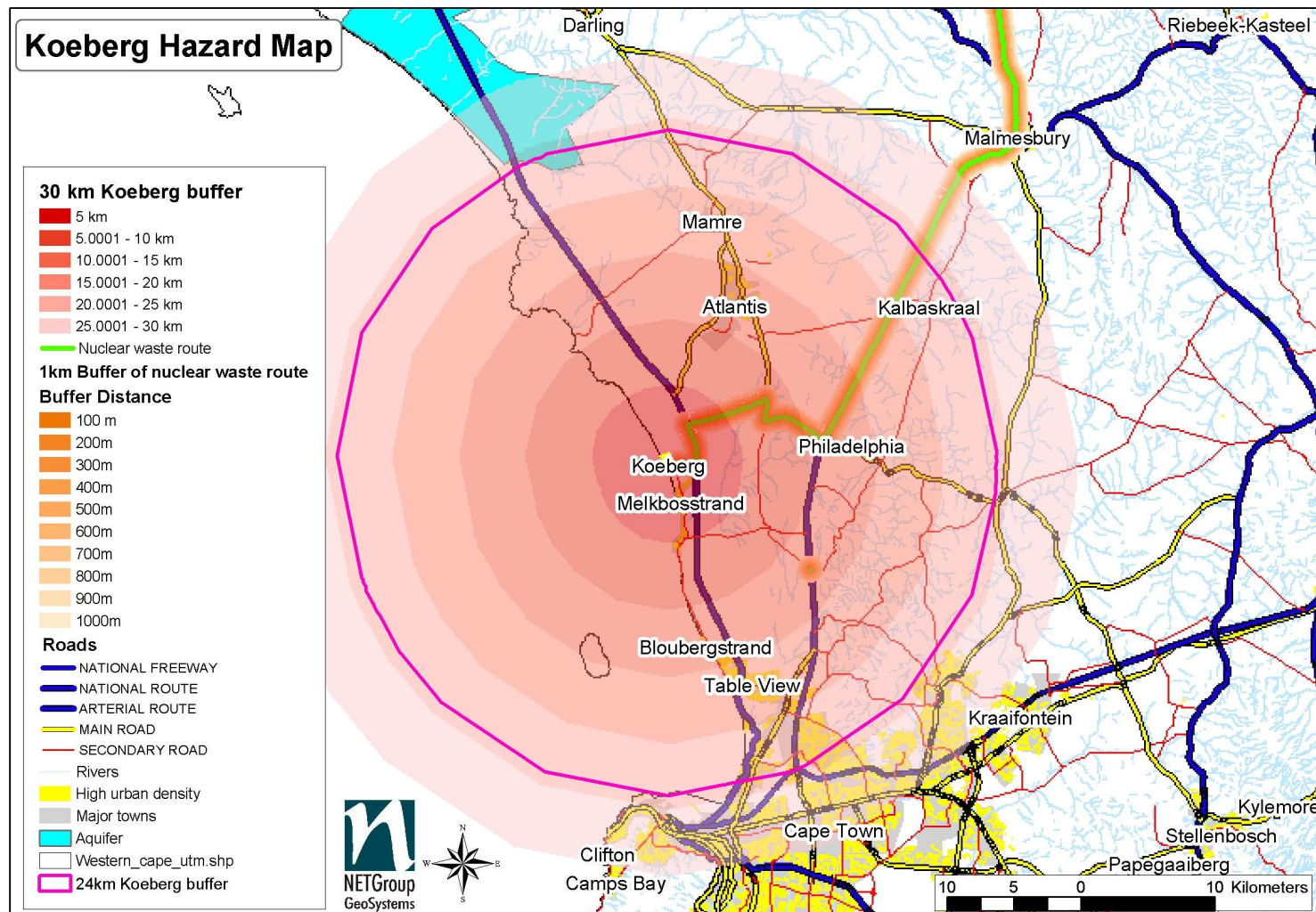
- Hazard Profile Map



Hazard Identification

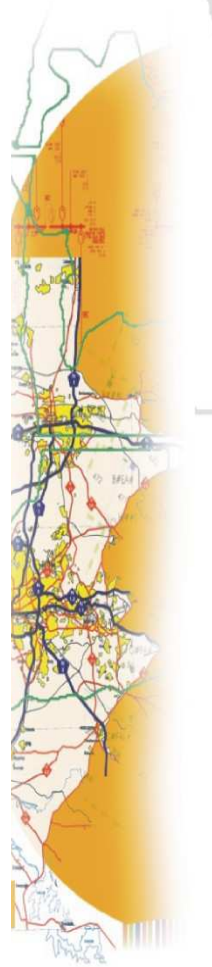
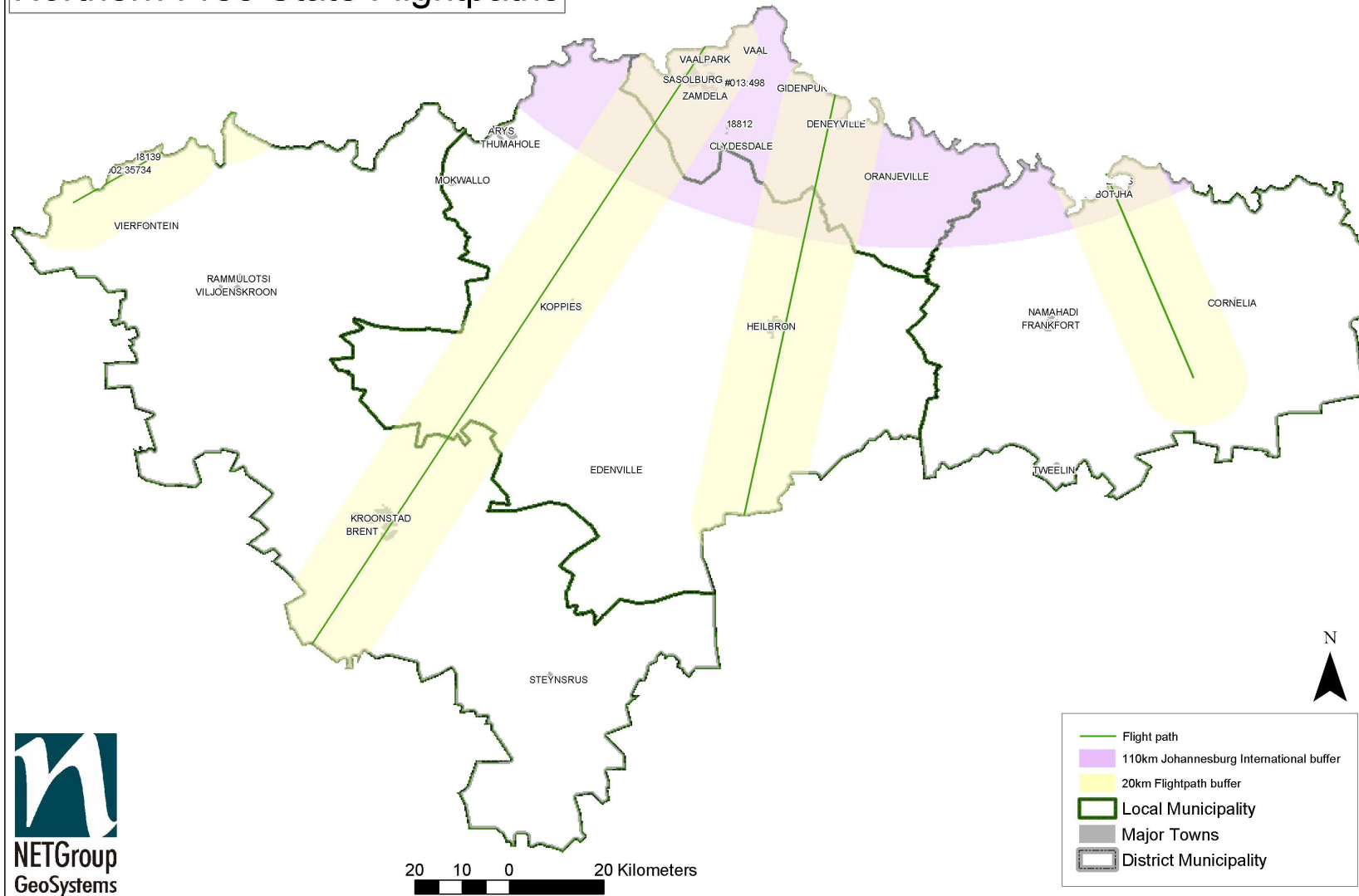


Provincial level

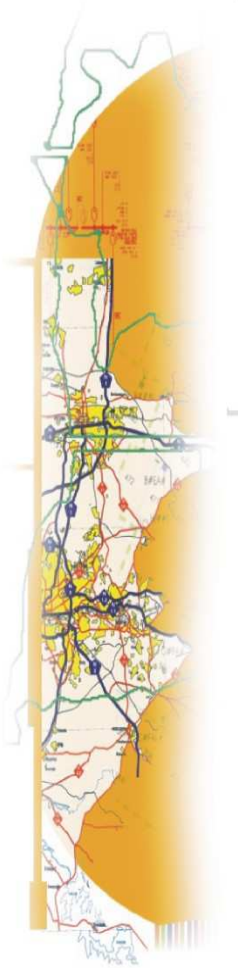


District

Northern Free State Flightpaths



Hazard Profile



Sol Plaatje Hazard Profile
Ward 20

Legend

Technical infrastructure

- Overhead 11kV
- Main Cable 11kV
- Main supply
- Main water line
- Overhead 66kV
- Sewage line
- Sewage water line

The map displays Ward 20 in the center, surrounded by other wards (8, 13, 14, 18, 19, 21, 23). Various land use zones are labeled, including Residential, Industrial, Commercial, and Agricultural. Infrastructure features like roads, railways, and public facilities are also shown. A compass rose indicates North is towards the top right.



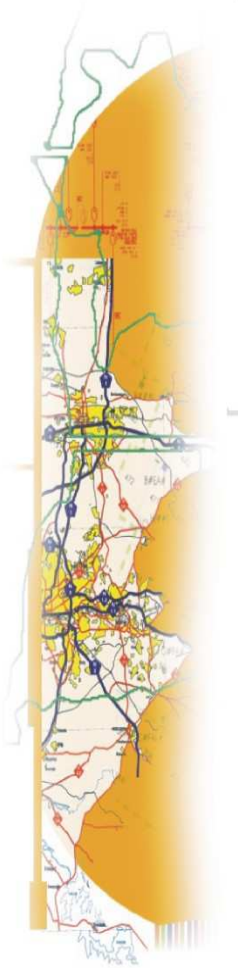
Hazards Per Planning Zones



- Census Area
- Ward
- Suburb
- Town

Study area: Sol Plaatje Municipality (Kimberley)

WARD Level



Sol Plaatje Aircraft Hazard Ward 14



Legend

- Rail river crossings
- Road river crossings

Flood Grid

Aircraft

- No
- High

Land Use

LAND_USE

- Agricultural
- Business
- Cemetery
- Commercial
- Industrial
- Institutional
- Mining
- Open Space
- Parking
- Recreational
- Residential
- Roadway
- Undetermined



0 0.1 0.2 0.3 0.4
Kilometers



[illegible]

Sol Plaatje Flood Hazard Ward 7



Legend

- Rail river crossings
- Road river crossings

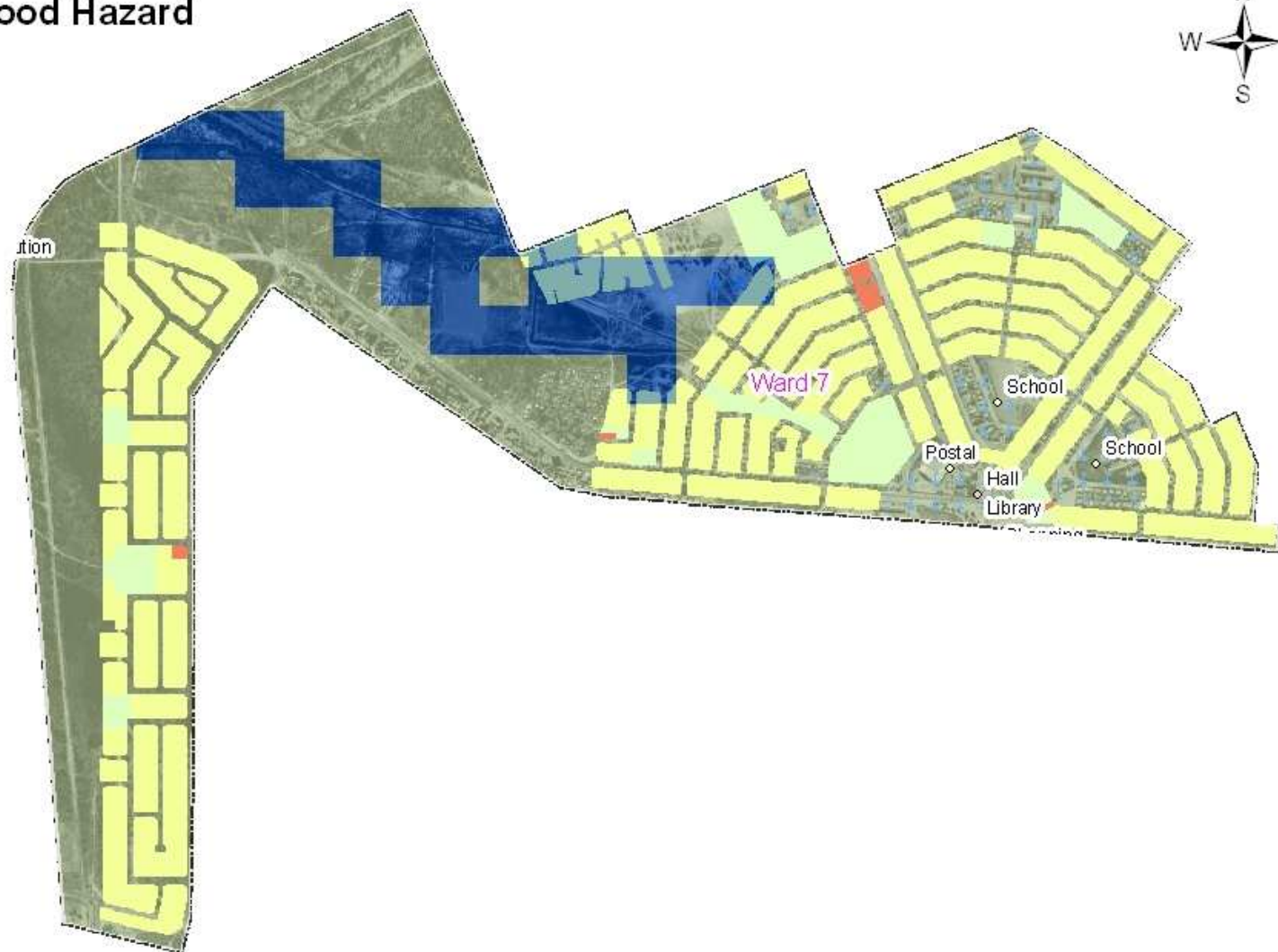
Flood Grid

- No
- High

Land Use

LAND_USE

- Agricultural
- Business
- Cemetery
- Commercial
- Industrial
- Institutional
- Mining
- Open Space
- Parking
- Recreational
- Residential
- Roadway
- Undetermined



0.0 0.1 0.2 0.3 0.4
Kilometers



Sol Plaatje Hazmat Hazard Ward 3



Legend

- Rail river crossings
- Road river crossings

Flood Grid

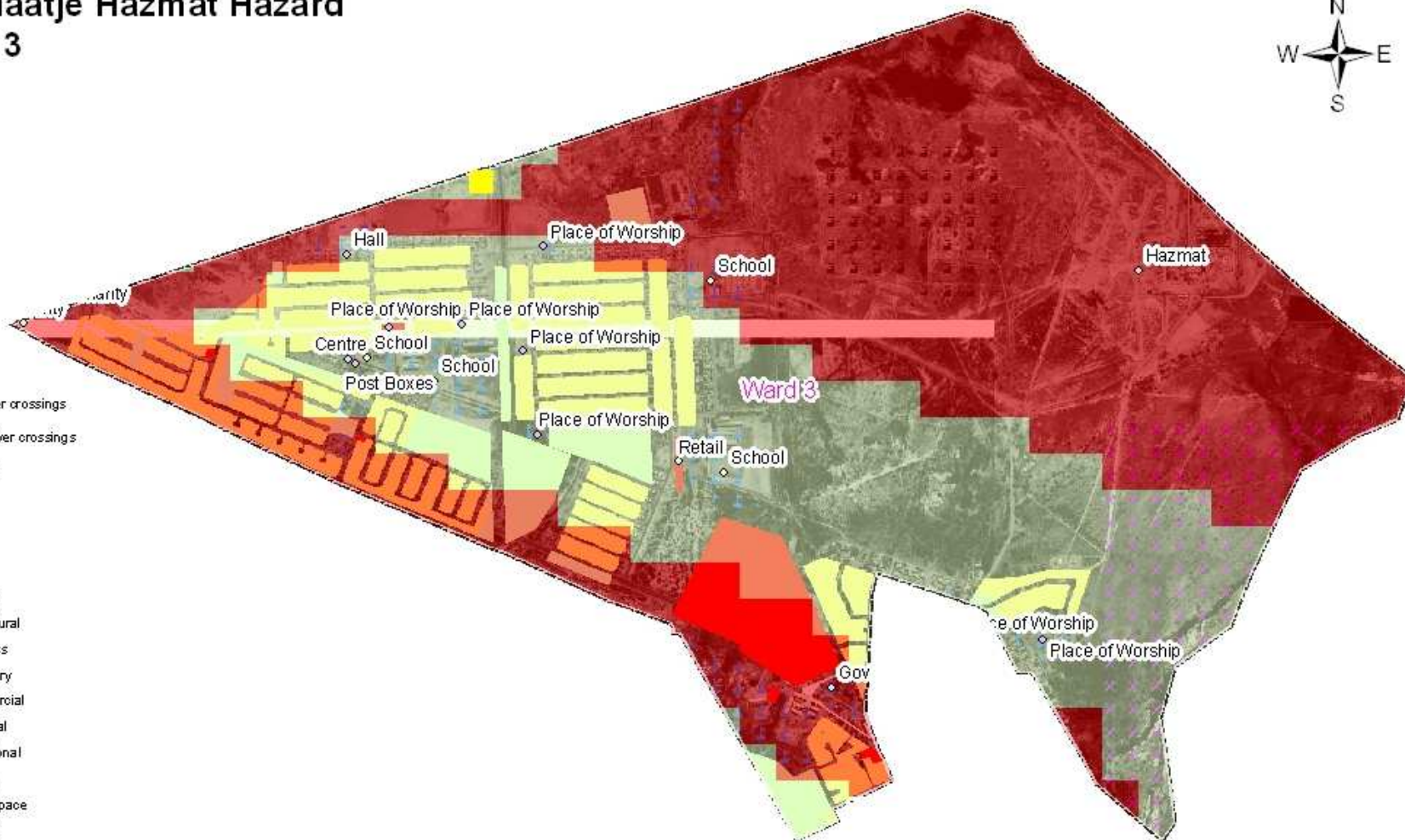
Hazmat

- No
- High

Land Use

LAND_USE

- Agricultural
- Business
- Cemetery
- Commercial
- Industrial
- Institutional
- Mining
- Open Space
- Parking
- Recreational
- Residential
- Roadway
- Undetermined



0 0.4 0.8 1.2 1.6 2.0 Kilometers

Kilometers



Hazard per Planning Zone Table



SUB_PLACE	WARD_NO	AIRCRAFT	BIG HOLE	DEGRADATION	EROSION	EXTREME WEATHER	FIRE	FLOODS	HAZMAT	LIGHTNING
Roodepan	0	✓			✓		✓		✓	✓
Roodepan SP	2	✓			✓		✓		✓	✓
Homelite	3	✓			✓		✓		✓	✓
Homevale	3	✓			✓		✓		✓	✓
Redinle	5	✓			✓		✓			✓
Thusano	5	✓					✓			✓
Boikhutsong	6	✓			✓		✓		✓	✓
Vergenoeg Ext 4	6	✓			✓		✓			✓
Vergenoeg Ext 9	6	✓			✓		✓			✓
Galeshewe	7	✓			✓		✓	✓		✓
Vergenoeg	7	✓		✓	✓		✓			✓
Vergenoeg Ext 1	7	✓			✓					✓
Vergenoeg Ext 2	7	✓			✓		✓			✓
Vergenoeg Ext 3	7	✓			✓					✓
Donkerhoek	8	✓			✓		✓			✓
Kirstenhof	8	✓		✓	✓		✓			✓
Mampe Ext 1	8	✓		✓	✓		✓			✓
Riviera	8	✓			✓		✓	✓	✓	✓
Verwoerd Park	8	✓			✓				✓	✓
Ipopeng	9	✓		✓			✓			✓
Phomolong	9	✓		✓	✓		✓			✓
Tshwaraganyo	10	✓		✓			✓			✓
Vergenoeg Ext 5	10	✓								✓
Vergenoeg Ext 7	10	✓								✓
Agisanang	11	✓		✓			✓			✓
Vergenoeg Ext 8	11	✓		✓			✓			✓
Galeshewe Ext 2	12	✓			✓					✓
Galeshewe Proper	12	✓			✓					✓

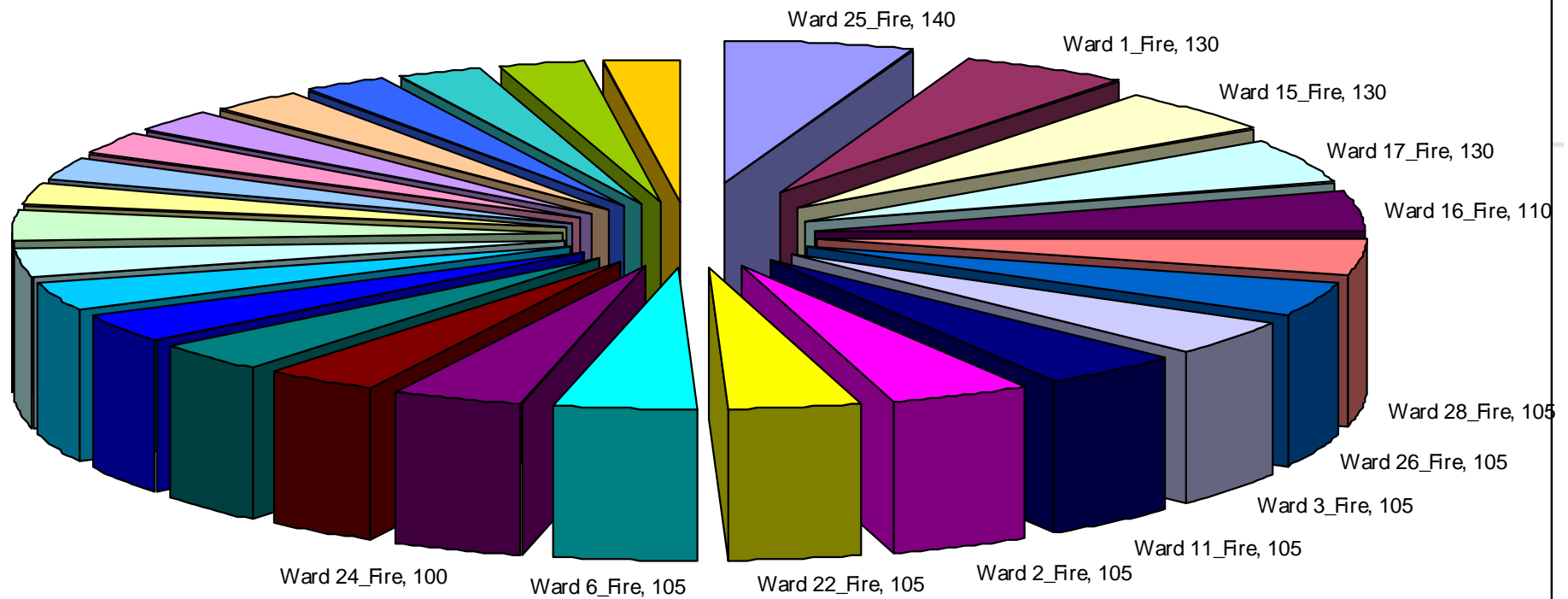
Hazard per Planning Zone Table Cont.

Fire	Ward	Infrastructure	Facilities	Communities
		1 Railway	Senior Centre	Kimberley NU
		Main water supply	Place of Worship	
			Clinic	
			Flats	
			Military Base	
			Resort	
			Service Utility	
			Park	
			Schools	
			Place of Worship	
			Hazmat	
		2 Main water supply	Dumpsite	Roodepan
		Sewage line	Filling Station	
		3 Main water line	Place of Worship x 2	Kimberley SP
		Main Cable 11kV	Retail	Homevale
		Overhead 66kV	School x 2	Northview
		Sewage line	Hall	Homestead
		Main supply	Hazmat	Homelite
		Sewage water line		
		6 Main Water Line	Medical Facility	Boikhutsong
		Sewage Line	School/Chreche	Vergenoeg Ext 10
				Vergenoeg Ext 2
				Vergenoeg Ext 9
				Vergenoeg Ext 4
		8 Sewage Line	Place of Worship	Riviera
			Shanty	
			Youth Centre	



Prioritising of Zone Table

Veld Fire Disaster Risk Assessment for SPM, 2008

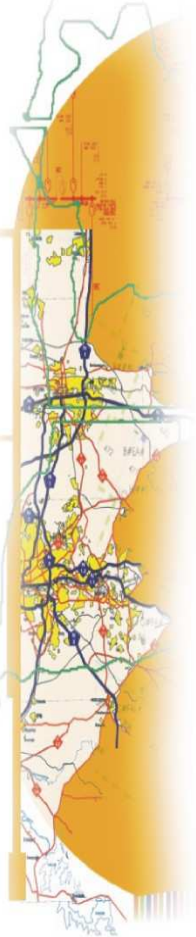


IDP



Disaster Risk Reduction:

<u>Hazard</u>	<u>Ward</u>	<u>Community</u>	<u>Infrastructure</u>	<u>Facility</u>
Hazmat	5	Rietvale	Main Cable	Clinic



Questions



www.watees.net

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