



Draft Dolomite Risk Management Policy 2020

MIDVAAL LOCAL MUNICIPALITY: DRAFT DOLOMITE RISK MANAGEMENT POLICY

1. PREAMBLE

Parts of Midvaal Local Municipality area of jurisdiction is located on dolomite land including areas of intense residential, commercial and industrial development. Dolomite land is susceptible to sinkhole and subsidence formation, primarily through groundwater level drawdown and ingress of water. Dolomite land is defined as land underlain by dolomite at depths of no more than:

- a) 60m in areas where no dewatering has taken place and the local authority has jurisdiction, is monitoring and has control over the groundwater levels in the areas under consideration; or
- b) 100m in areas where de-watering has taken place or where the local authority has no jurisdiction or control over groundwater levels.

Cognisant of the fact that pro-active dolomite risk management can reduce the incidence of sinkhole and subsidence formation, the Midvaal Local Municipality commits itself to the implementation and ongoing maintenance of a comprehensive Dolomite Risk Management Strategy to ensure sustainable development and the safety of its inhabitants.

A Dolomite Risk Management Strategy refers to the process of using scientific, planning, engineering and social processes, procedures, policies, By-Laws, Dolomite Risk Management Plan, Ground Water monitoring, and measures to manage an environmental hazard and to reduce the likelihood of sinkholes and subsidences occurring on dolomite land.

The Dolomite Risk Management Policy is to incorporate the establishment of a Dolomite Risk Management Plan and Function.

It is resolved that the structure and content of the Dolomite Risk Management Policy should serve to meet the legal obligations of the Midvaal Local Municipality with respect to safe development of dolomite land and the management of the associated risks.

This policy document outlines the Midvaal Local Municipality's approach to Dolomite Risk Management and gives effect to the associated procedural requirements as outlined in the South African National Standard, SANS 1936, titled: "Development of dolomite land, Parts 1 to 4, published on the 12 October 2012.

The aforesaid applies to new areas of development, existing developments and informal settlement areas located on dolomite land.

2. DOLOMITE RISK MANAGEMENT FUNCTION

The Midvaal Local Municipality resolves that:

- 2.1 A system and procedures of managing developments on Dolomite land is created and maintained within the Midvaal Local Municipality's area of jurisdiction.
- 2.2 The Dolomite Risk Management Function will be housed in the Development and Planning Department but may be relocated from time-to-time, based on the administrative requirements of the Municipality.
- 2.3 When financing and resources permit, an individual/s should be appointed to undertake the Dolomite Risk Management Function for the municipality to meet current and evolving statutory requirements in this regard.
- 2.4 The Dolomite Risk Official should be a suitably experienced person who may be an official of Municipality or externally appointed to perform such functions and duties for and on behalf of the Midvaal Local Municipality. The person should be qualified by virtue of his/her experience, training, in-depth contextual knowledge of development on dolomite land and be able to comprehend the contents of dolomite stability reports. The person should be capable of translating such reports into executable dolomite risk management strategies and/or suitable engineering design and/or precautionary measures, inspect the construction design or implement precautionary measures and monitor development in its entirety for safe development to take place. Due to the level of specialisation involved in aspects of the tasks to be performed, it is noted that the Dolomite Risk Official may require external support by specialist Competent Persons (dolomite), as required, to fulfil the Municipality's legal and technical obligations.
- 2.5 The Dolomite Risk Management Function is tasked with establishing and maintaining a Dolomite Risk Management Plan and supporting systems.
- 2.6 The Dolomite Risk Management Function is authorised to select, from time-to-time, the relevant standards and specifications to be adhered to in land use planning, infrastructure design, construction, groundwater monitoring, maintenance and mitigation of dolomite risk, etc. The selected minimum standards and specifications will immediately be made known to the Departments that are responsible for the design and approval of developments and infrastructure
- 2.7 Appropriate ancillary structures such as inter-departmental task teams or steering committees, may be created, as required from time-to-time to successfully manage the risk of sinkhole and subsidence formation on an ongoing basis.

- 2.8 As parts of the Midvaal Local Municipality area of jurisdiction are located on dolomite land, it is essential that the Dolomite Risk Management Function should be provided with the resources and means to effectively and efficiently execute dolomite risk management.

3. DOLOMITE RISK MANAGEMENT POLICY

The Midvaal Local Municipality resolves that:

- 3.1 The Municipality shall maintain a Dolomite Risk Management Policy to ensure sustainable development and the safety of its inhabitants. This Dolomite Risk Management Policy will be implemented incrementally within budgeting constraints and the availability of financing and resources.
- 3.2 Dolomite risk management is to be undertaken in accordance with current industry standards and subsequent amendments which at the time of this policy publication includes SANS 1936, Parts 1 to 4 published in October 2012.
- 3.3 Applications in terms of land control legislation will be consistent with and give effect to the principles contained in the Dolomite Risk Management Strategy.
- 3.4 The Dolomite Risk Management Function shall develop procedures for authorising and clearance of township layout plans, site development plans (where required) and all building plans on dolomite land.
- 3.5 Building Control Officers shall apply the Dolomite Risk Management Function's policy requirements, standards and precautionary measures in areas underlain by dolomite. Regular meetings should be convened between the Dolomite Risk Management Function and the Building Control Officers operating in dolomite areas, on at least a six monthly basis or as and when required. The purpose of these meetings is to exchange information concerning problems encountered by inspectors, technical and policy matters, latest standards, etc. A register of problems and issues arising, is to be kept and tabled at the meetings
- 3.6 Dolomite risk management is to be undertaken by the Midvaal Local Municipality in public areas, on municipal property, within its servitudes and along its infrastructure. Although collective risk management is applied, it is in no way implied that the Midvaal Local Municipality is responsible for Dolomite Risk Management on private property. Individual home owners, registered land owners, recognised mandated land management bodies or their nominees, shall be responsible for risk management on their

properties. With respect to recognised, mandated land management bodies or their nominees it is resolved that structures are created for this risk management process and data to be reported to the Midvaal Local Municipality at time-intervals to be determined by the Dolomite Risk Management Function from time-to-time.

The dolomite areas of the Midvaal Local Municipality are mapped or are to be mapped, in terms of hazard zones. These hazard maps are a fundamental part of the Dolomite Risk Management Plan and will be maintained and updated to appropriate levels over time to ensure safe, sustainable development.

For the purposes of clarity “development” shall mean any permanent or temporary, formal or informal structure or structures for residential occupation, storage, business, manufacturing, agriculture, recreation, burials, worshipping, medical care, entertainment, education, or for whatever purpose, including infrastructure, roads, bridges, subsurface or surface pipelines, subsurface or surface telecommunications infrastructure, storm water systems, electrical generation and reticulation networks, railway infrastructure and networks, water care works, water retaining structures, water attenuation structures and related infrastructure.

- 3.7 New Development in the dolomite areas of the Midvaal Local Municipality is to be appropriate in terms of the hazard zonation of these sub-regions. The Dolomite Risk Management Function is authorised to select, from time-to-time, those standards, guidelines and specifications that pertain in this regard. Those relevant requirements imposed by an Act, Regulation or Regulatory Authority shall apply.
- 3.8 Where and when required and practically feasible, the upgrading of infrastructure in existing developments is to be in accordance with those standards, guidelines and specifications that the Dolomite Function deem to pertain. Those relevant requirements imposed by an Act, Regulation or Regulatory Authority shall apply
- 3.9 Development planning, development types and densities will be in accordance with the hazard zonation of the dolomite areas of the Midvaal Local Municipality and will take cognisance of current standards and specifications identified by the Dolomite Risk Management Function of the Midvaal Local Municipality.
- 3.10 The Midvaal Local Municipality is to undertake status quo assessments of Municipal services in existing developments, particularly in areas that are deemed highly susceptible to sinkhole formation. Those areas where an

increasing frequency of leakages and stability problems are recorded, should be prioritised for appropriate upgrading of Municipal infrastructure in accordance with the standards and requirements selected by the Dolomite Risk Management Function.

- 3.11 The Dolomite Risk Management Function is to create and maintain a dolomite risk management data base, within budgetary and resource constraints, which stores relevant cadastral (including topographic, road networks, infrastructure networks, land uses, etc), geophysical, borehole, geological, geohydrological data (including groundwater compartments, groundwater level monitoring wells and groundwater depths and elevations and historical groundwater level trends), sinkhole and subsidence data set, hazard zonation, monitoring designations, existing reports, infrastructure, etc. The data base should be a repository for appropriate standards and policies selected by the Dolomite Risk Management Function for the dolomite areas of the Midvaal Local Municipality.
- 3.12 Undertaking of education and awareness programmes concerning dolomite risk management in affected Communities when necessary.
- 3.13 Encouragement of Vigilance.
- 3.14 Constant evaluation of legal considerations.
- 3.15 An Emergency Reaction Plan shall be drafted.
- 3.16 The Midvaal Local Municipality will establish a Groundwater Level Monitoring and Control System as a fundamental part of its Dolomite Risk Management Plan. This will involve:
 - 3.16.1 Evaluating the current geohydrological information relating to the dolomite areas of Midvaal Local Municipality.
 - 3.16.2 Establishing boreholes in those areas within the Midvaal Local Municipality that require groundwater level monitoring or where a short fall in data is noted.
 - 3.16.3 Undertaking measurements of the groundwater levels within the dolomite aquifers at a frequency and spatial distribution deemed necessary by the Dolomite Risk Management Function.
 - 3.16.4 Developers shall be required to establish monitoring wells on new sites proposed for development at their own expense where the Competent Person (Dolomite) or the Dolomite Risk Management

Function deems such wells as necessary. The location and design of the wells should be in accordance with the requirements of the Dolomite Risk Management Function.

- 3.16.5 The Midvaal Local Municipality will seek to establish the boreholes on Municipal or state owned land. In instances where a monitoring borehole is to be located on private land, a servitude will be required in favour of the Midvaal Local Municipality to protect the borehole/s and provide access.
 - 3.16.6 Where the groundwater level is noted to be drawn down, the source of drawdown is to be determined. Appropriate action is to be taken to prevent continued lowering of the water level if it should pose a risk of generating sinkhole or subsidence formation.
 - 3.16.7 By-laws should be drafted to ensure that action can be taken against third parties to prevent continued lowering of the groundwater level.
- 3.17 The Midvaal Local Municipality will investigate and consider the implementation of a once off, pro-rata (to size or value of development) Dolomite Risk Management Contribution by developers on approval of developments on dolomite land.
- 3.18 All geotechnical reports pertaining to land use planning, rezoning, infrastructural development or rehabilitation of sinkholes or subsidences are to be submitted to the Dolomite Risk Management Function for comment and data banking. Such data is to be added to the data base regularly to keep the system current.
- 3.19 As it is understood that dolomite environments and aquifers straddle the municipal boundary, the Midvaal Local Municipality will pro-actively seek cross boundary collaboration with affected neighbouring local and regional authorities to facilitate exchange of information and co-operation on the management of the dolomite hazard. It is understood that poor management of dolomite risk in one local authority's area of jurisdiction can impact on safety and sustainable development in an adjoining authority. Midvaal Local Municipality can experience problems generated by a third party outside its area of jurisdiction. Consequently the Midvaal Local Municipality authorises the Dolomite Risk Management Function to encourage and develop communication with adjoining authorities in this regard utilising appropriate forums and channels. Where necessary cross

border agreements may be required to ensure a co-ordinated approach to risk management.

- 3.20 The Dolomite Risk Management Function shall establish reporting procedures and time limits for the reporting of sinkholes or subsidences to the Midvaal Local Municipality by registered land owners, recognised mandated land management bodies or their nominees.
- 3.21 The Dolomite Risk Management Function shall establish reporting procedures for sinkholes and subsidences that may occur on:
- 3.21.1 Public or municipal property or
 - 3.21.2 Private land.
- 3.22 The Dolomite Risk Management Function shall establish procedures for the evacuation of hazardous areas in the event of an incident.
- 3.23 Rehabilitation of sinkholes and subsidences caused by leaking municipal services will be undertaken within budgetary constraints and available means. Rehabilitation of sinkholes and subsidences caused by leaking private services on private property is excluded unless the Dolomite Risk Management Function provides strong motivation from a risk management perspective for intervention. The legal implications of such intervention is to be considered prior to any rehabilitation work being undertaken.
- 3.24 The Dolomite Risk Management Plan of the Midvaal Local Municipality should be subjected to external audit or Peer Review every five years and records kept of such audits.
- 3.25 As and when required, Departments within the Midvaal Local Municipality are to assist with the Dolomite Risk Management Policy and related functions, as it pertains to their particular sphere of responsibility or expertise.
- 3.26 The management of disasters in dolomite areas shall take cognisance of dolomite risk management requirements and applicable standards. The Dolomite Risk Management Function should be consulted in such instances.
- 3.27 The emergency services shall be provided with background and awareness training on dolomite matters such as distribution of dolomite land in the Midvaal Local Municipality, sinkhole and subsidence formation,

identification of potential problems, how events develop, and evolve over time, appropriate safety zones, etc.

3.28 If an event on private land is deemed as a serious threat to the safety of third parties, the Dolomite Risk Management Function may request to declare the area unsafe and institute immediate remedial actions. In addition, the Dolomite Risk Management Function of the Midvaal Local Municipality shall have the authority to serve notice on developers, registered land owners, recognized mandated land management bodies or their nominees, servitude holders or utilities, as is relevant, that a potentially hazardous situation shall be remedied at their own expense within a reasonable period of time determined by safety considerations.

3.29 The design, maintenance and repair of infrastructure and services on dolomite land shall be in accordance with the requirements and standards selected by the Dolomite Risk Management Function from time-to-time and the requirements of any relevant Act, Regulation or Regulatory Authority.

3.30 Consideration is to be given to the implementation of a water infrastructure evaluation and review system or similar on dolomite land when resources permit.

4. ALIENATION, LEASING OR GRANTING OF SERVITUDES ON MIDVAAL LOCAL MUNICIPALITY LAND

4.1 The Midvaal Local Municipality shall establish and maintain dolomite risk management policies with respect to the alienation or leasing of its properties situated on dolomite land and the granting of servitudes on such land.

4.1.1 Where the Midvaal Local Municipality alienates or leases its property or grants a servitude to or allows the use of its properties in any other manner by a third party, the relevant agreement in respect of such alienation, leasing or granting shall contain the following clause:

It is hereby recorded that the property is situated on dolomite land and that sinkholes and, or subsidences may occur on the property or affect the property. The purchaser, lessee, grantee/ servitude holder/user accept such risk and shall have no claim whatsoever against the seller/lessor, grantor/ owner arising from damage or destruction of the property as a result of the occurrence of sinkholes and/or subsidences.

- 4.1.2 In the event that the Midvaal Local Municipality alienates, leases property situated on dolomite land or grants a servitude over such land the following further clause shall be included in the relevant agreement:

The seller/lessor/grantor does not guarantee and makes no warranty as to the condition or suitability of the soil for building or other purposes and accepts no responsibility or liability for any sinkhole, subsidence, cracks or movement of the soil or damage to any building or structure erected on land hereby sold howsoever caused and the purchaser, lessee, grantee hereby waives any claims to cancellation of the relevant agreement by reason of any deficiency in area, unsuitability of the soil or any latent defects in/on the property.

4.2 Dolomite Risk Management of Servitudes

- 4.2.1 Risk management standards are required on servitudes granted by the Council to third-parties. It is essential that the level of risk management within servitude areas matches that outside the servitude area. If servitudes over dolomite land is granted the following clauses shall be included in the deed of servitude:

The servitude holder shall, at least, execute dolomite risk management in accordance with relevant standards and specifications as determined by the grantor's Dolomite Risk Management Function.

The servitude holder shall further make sure that all infrastructure and structures in the servitude area are designed, constructed and maintained in full compliance with the standards and specifications as determined by the grantor's Dolomite Risk Management Function.

5. CONDITIONS OF ESTABLISHMENT

The following is resolved:

The following conditions of title shall be included in the Conditions of Establishment of new townships located on dolomite land in the Midvaal Local Municipality:

- 5.1 It is recorded that the erf is located on dolomite land and is therefore susceptible to sinkhole and subsidence formation. The owner of the erf accepts the risk of such a hazard occurring and shall have no claim whatsoever arising from damage or destruction of the erf as a result of the

occurrence sinkholes or subsidences caused by the ingress of water from leaking, privately owned services or poor storm water drainage on the erf. This clause is to be included in any deed of sale of an erf.

- 5.2 Development on the erf shall be in accordance with the requirements of the dolomite risk management by-laws.

6. INSURANCE COVER

The following is resolved:

That the Midvaal Local Municipality provide insurance cover, commercial or self-insurance, within means available, for claims arising from damage resulting from the occurrence of a sinkhole and or subsidence, where acts or omissions by the Midvaal Local Municipality may have directly contributed to the formation of such an event.

7. PENALTIES

It is resolved that appropriate penalties shall be determined, from time-to-time, by the Dolomite Risk Management Function of the Municipal Manager's Office for contraventions of the Dolomite Risk Management by-laws by developers or landowners. The Dolomite Risk Official is authorized to issue such penalties for contravention of the by-laws.