WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY GIS POLICY

2020

Contents

1. DEFINITIONS

The Geographic Information System (GIS) policy serves as a policy framework guiding how GIS data is captured, managed, maintained, acquired, disseminated, printed and secured by WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY in the short, medium and long term.

GIS   Geographic Information System. A term used for spatial data used within an appropriate hardware, software and system environment to enable production of maps and performing spatial analysis from very simple queries, to very complex ones.

WMMLM   WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY

2. EXECUTIVE SUMMARY

The WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY (WMMLM) GIS is located at its offices in Mbizana. The GIS was set up in 2015 with a GIS strategy developed in 2016 and then updated in 2020. Critical success factors were identified in the GIS strategy update with one of them being the rigorous implementation of the GIS policy that dictates how consultants supply spatial information back to WMMLM and how information and GIS products will be governed at WMMLM.

How data is captured, managed, maintained, acquired, disseminated, printed and secured is very important to WMMLM in the short, medium and long term. The WMMLM GIS database is stored in an Esri-based geodatabase format. It is as a consolidated, structured and documented spatial database. Procedures must be implemented for maintaining some of the critical data therein.

This document deals with the policy requirements for sound data management and technical management at the Municipality.

3. GIS POLICY AND ITS APPLICATION

This policy is applicable to all WMMLM staff that have an influence on, or are influenced by, spatial information.

The policy is specifically applicable to:

a) Users of GIS who will report on adherence to request procedure
b) The Planning Manager who will audit job requests, backups, data documentation and adherence to data management policy

c) The GIS Committee which will monitor the performance of the GIS.

4. LEGAL IMPLICATIONS

This document sets out the framework policy for how this will be achieved in line with the Municipal Systems Act (No. 32 of 2000), the Municipal Structures Act (No 117 of 1998), the Promotion of Access to Information Act (No. 2 of 2000), the Spatial Data Infrastructure (SDI) Act (No. 54 of 2003), the Property Rates Act (No 6 of 2004), the Spatial Planning and Land Use Management Act (No.16 of 2013) and the Municipal Standard Chart of Accounts (MSCOA).

The SDI Act is of particular importance to WMMLM as an organ of state that captures and provides spatial information. Section 6.1 of the Act details how spatial data custodians are responsible for the processes and functions of data capture, validation, maintenance, management, archiving and documenting, including the principles and procedures for accuracy, currency, metadata, data storage and security. Section 12 (2) further states that all Data Custodians shall capture metadata for their data holdings. Metadata is information about the information captured such as date, accuracy, source, contact details and distribution constraints on the data.

5. GIS POLICY STATEMENTS

Particular aspects of GIS information supply, data management and data maintenance require policy to regulate the flow of information in the correct manner:

5.1   **GIS Jobs and Data Request Policy**

Every GIS job request (**see annexure A1**) must be recorded by the GIS Officer and audited by the Planning Manager from time to time in order to achieve the following objectives:
a)   Ensuring the client gets what he or she asks for
b)   Recording deadlines by when the product will be produced
c)   Performance management within the GIS component
d)   Justification of costs associated with GIS product production
e)   Tracking of quantities of maps given to components within WMMLM as well as to stakeholders in the region
f)   Ease the process of communicating a request to GIS staff, especially when they are busy or out of the office.
g)   Managing job priorities within the GIS section
h)   Managing invoices for external requests
i)   Very importantly, acknowledgement of copyright of data and data disclaimer for external requests

A GIS job and data request form must be completed for every GIS job that results in a map, a report or data dissemination in digital format. WMMLM GIS staff and their clients must be meticulous when completing these forms. Where a request is made telephonically, the GIS staff member may either complete the

form on behalf of the client while asking the appropriate questions over the phone, else will fax or e-mail the form to the client if needs be.

Verbal enquiries of the GIS that can be answered at the "press of a button" need not typically recorded. (e.g. "What is the population of WMMLM broken down by population group"?)

5.2   Pricing Policy

The policy on pricing of spatial information products and services developed by the Committee for Spatial Information in terms of the Spatial Data Infrastructure Act, 2003 (Act No. 54 of 2003) allows for charges to be levied by organs of state for spatial information products taking into account the costs of:
(a) Human resources (total cost of employment)
(b) Materials consumed;
(c) Equipment (including ICT systems)
(d) Apportionment of infrastructure (direct and overhead)
(e) Communication - including ICT networks and Internet usage;
(f) Transport;
(g) Accommodation;
(h) Rates and taxes, if applicable;
(i) Incidental costs.

WMMLM has taken a policy decision to only charge a nominal charge for larger sized hardcopy information products produced by the GIS Unit in light of the above.

5.2.1   Printing Charges

WMMLM has taken a policy decision to only charge a nominal amount for all size hardcopy maps as per the pricing schedule below:

Size of Paper	Full ink	Line map
A0	R106.00	R56.00
A1	R80.00	R45.00
A2	R53.00	R28.00
A3	R33.00	R18.00
A4	R13.00	R8.00

A line map consists of predominantly line work with no solid fill areas or backdrop aerial photography.

A "full ink" map has predominantly solid fill areas coloured in on the map, else aerial photography.

Different types of maps are identified by their different levels of ink coverage and type of data depicted on them. A map is defined in terms of category if 75% or

more of its area is of one of the types listed. This will involve a certain amount of discretion in terms of implementation of this pricing policy, and consistency is essential in charging all clients the same category of price for the same type of map.

5.2.2   Scanning Charges

WMMLM has a high resolution A0 plotter / scanner. No charge will be levied for scanning services as long it is for the benefit of the WMMLM or the Region. Requests will be entertained within reason and depending on capacity. General scanning for members of the public will not be allowed.

5.3   **Data Structuring and Naming Convention Policy**

New GIS data that is inserted into the WMMLM GIS must be correctly categorised and named by the GIS staff in accordance with the GIS naming convention established in Phase 1 of the WMMLM GIS Implementation of 2015. The WMMLM GIS is based on an Esri 10.7 geodatabase. Data "layers" (called feature classes in the geodatabase) have been grouped under logical data categories (called feature datasets) as listed in the geodatabase scheme below:

- ADMINSTRATIVE
- AGRICULTURE
- CADASTRAL
- DEMOGRAPHICS
- ELECTORAL
- ENVIRONMENTAL
- FACILITIES
- GEOLOGY
- GRIDS
- HYDROLOGY
- INFRASTRUCTURE
- LAND COVER
- MUNICIPAL_ASSETS
- PLANNING
- PROJECTS
- SETTLEMENTS

- TOPOGRAPHY
- TRADITIONAL
- TRANSPORT

This list is not exhaustive and will be added to as required.

All imagery including the aerial photography and 1:50,000 topographic map images will reside outside of the geodatabase in specific folders with image catalogue files set up.

Similar datasets entering WMMLM must be rationalised. For example, several school datasets may be sourced from different sources (Dept of Education and Alfred Nzo District Municipality) and must be merged where feasible with their respective sources and accuracies contained as fields in the database. Therefore, instead of having several school datasets, WMMLM will have one dataset with the most accurate schools used and, where schools have been taken off a less accurate dataset, the "source field" and "accuracy" field will show where these schools came from and that the accuracy is lower. Rationalising data in this manner is time consuming, however WMMLM will reap the rewards by having data that it is confident in and that can be used to take management decisions with.

The temptation to create a new GIS layer named, for example, "latest boreholes from DWA" must be avoided. Data must be logically named with a name that will suffice as a legend name on a map. This will minimise the effort required in renaming layers on maps, every time that they are created.

The above are operational policy rules that the GIS staff are required to follow and enforce.

5.4 Data Maintenance Policy

GIS data maintenance involves data capture, data editing, data documentation and data deletion.

WMMLM must update its cadastral (land parcel) database covering the whole of the WMMLM area on a quarterly basis. This critical database consists of two main data layers: the approved layer (all properties in the Municipality that have been approved in the Office of the Surveyor-General by virtue of an approved diagram or general plan); and the registered layer (all properties that have been registered in the Deeds Office). These data layers are required for all property related matters including planning, provision of services and billing. The WMMLM GIS will have these layers updated every 3 months and disseminate the data to Alfred Nzo District Municipality to assist them with water billing as well as update the GIS website with this data.

The responsibility of WMMLM "business" data maintenance lies with the individual business components within WMMLM. By business data it is meant the line function data pertaining to the business of each component within WMMLM for example project information, street names, building plans etc.

No project should be undertaken in WMMLM without a spatial point being captured to depict where that project is. The GIS staff will be responsible for ensuring that there is a one-to-one match between the project database and the GIS spatial data. The project managers must ensure that the project implementers provide the necessary data for capture into the GIS.

The maintenance of social facility data such as positions and details pertaining to schools, clinics and community halls shall be a collaborative effort between ANDM and the WMMLM GIS Unit. The Local Municipal staff shall typically capture and update these details and share the data updates with ANDM.

5.5 Data Documentation Policy

Proper documentation is critical to GIS longevity. Metadata is the term given to information pertaining to the information held by an organisation. This information covers such items as data accuracy, source, source contact details, an overview of the data etc. Metadata tools within ArcGIS (ArcCatalog module) must be used by GIS staff whenever new data is added to the Corporate GIS.

The GIS database design and metadatabase must be accessible to users and technical staff alike. Typically this documentation is maintained digitally and must be made available on the WMMLM GIS website.

It is important that this documentation is well maintained. If a new dataset is acquired or captured, or even of only a new field is added to an existing database, the relevant documents must be updated at the same time as the database is added to or amended. This is a business rule that must be enforced by the Planning Manager.

5.6 Data Backup Policy

The WMMLM IT department has a general cloud server for backups. A folder for the GIS vector data must be created on this backup server and all vector datasets copied into this folder. Whenever any dataset is changed that dataset must be copied into the backup folder. The imagery datasets are large in size and do not change frequently hence these datasets needs to only be backed up each time new imagery in obtained. The imagery data must be backed up onto on external hard drive and kept offsite.

5.7 Data Disclaimer

It is essential that the Municipality includes a standard data disclaimer on all GIS outputs and products to reduce the risk of liability for any loss or damage that may arise from the use of the GIS datasets. This data disclaimer must be included on all maps and datasets produced. A standard disclaimer for the Municipality is shown below.

"The WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY accepts no responsibility for the accuracy and completeness of the GIS datasets herein presented. These datasets have been compiled from a variety of different sources and may have been captured to various levels of accuracy and completeness at different points in time."

5.8 GIS Copyright Agreement

The standard GIS copyright agreement to be used when providing data that was captured or compiled by the Municipality is as follows:

1) the copyright of the data shall remain vested in WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY.

2) the data shall not be copied or reproduced for any other use than for WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY.

3) the data, or portion thereof, shall not be made available or sold to a third party without the prior written permission from the Senior Manager : Development Planning, WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY.

4) WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY accepts no responsibility for any damage, loss or injury arising directly or indirectly from the acquisition or use of the supplied data.

5) WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY shall be acknowledged as the source of the data whenever its data is presented in hard copy form or other.

Please see **annexure A2** which contains a copyright agreement which needs to be accepted by all organisations obtaining GIS data that was captured or compiled by the WINNIE MADIKIZELA-MANDELA LOCAL MUNICIPALITY.

5.9 GIS Specifications for Consultants.

It is critical that WMMLM GIS standards are enforced upon consultants that are doing work involving spatial data for either WMMLM or any of its municipalities. Consultants shall be provided GIS specifications that stipulate the exact manner and form that they are to provide spatial data and pertinent attributes. These must form a part of the tendering documentation up front before award of a tender or appointment through any other process.
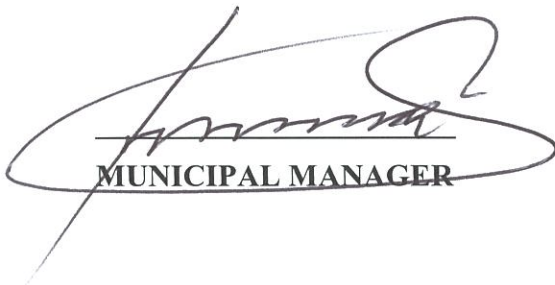
This requires upfront discussion between the tendering party and the WMMLM GIS Unit in order to define these exact specifications. A general GIS specification is available at the WMMLM GIS Unit. This requires customisation for each specific

project and this must be discussed at the GIS Committee prior to the tender documentation being finalized.

Each component within WMMLM that intends contracting service providers to perform work that has spatial significance to WMMLM must consult the WMMLM Planning Manager to ensure appropriate specifications are included in the terms of reference that will ensure the service providers provide data back in an acceptable format that strictly adheres to the specification.

Failure to consult WMMLM prior to the appointment of consultants will typically mean that good quality GIS data will not be provided by the consultants at the end of the project. This policy will necessitate the GIS Unit to validate the data before final payment to the service provider is made. A portion of the consultant's project fee should therefore be held back for payment until the WMMLM GIS unit has given the data a "clean bill of health". The various business units within the municipality must subscribe to a disciplined enforcement programme in this regard. Please see **annexure A3** which contains the general GIS specification.

Signed on the ____20th____ **day of** ____June____ 2022

MUNICIPAL MANAGER