

THE CURRENT AND POTENTIAL ROLES OF MUNICIPAL REGISTERS OF PROPERTIES IN SOUTH AFRICA

by

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DEDICATION

To Angus, my grandson, because without your smiles I could never have completed this body of work.

Angus Gray Channing entered our world as a healthy little boy on 2nd April 2022. As a result of an aortic coarctation, he underwent open heart surgery on 9th May 2022. Desperately dark days followed. Angus is now an energetic, entertaining 2-year-old complete with tantrums. I am his devoted Granny Jim, the dragon slayer.

DECLARATION OF ORIGINALITY

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Topic of work: The current and potential roles of municipal registers of properties in South Africa

Declaration

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ABSTRACT

Theory suggests that the recurrent property tax is a good local tax (Youngman, 2016). Most countries have a form of property tax that is an important source of own source revenue for local government. Market value is well regarded as the most appropriate base for property taxation as it is considered both fair and equitable and considers the general ability to pay. The Local Government: Municipal Property Rates Act, 6 of 2004 (hereafter “MPRA”) regulates recurrent property tax, known as property rates in South Africa, and is levied by municipalities. The MPRA also provides for the assembly and maintenance of municipal registers of properties. These registers or inventories provide the coverage required for property rates. This thesis evaluates how the municipal registers of properties are currently implemented from legislative, institutional and operational perspectives.

This research contributes to knowledge by developing a consistent understanding of the utility of the municipal registers of properties and the operational tasks required to establish and maintain these registers for more efficacious rating. This thesis evaluates the potential of the municipal registers of properties as an instrument for more successful financial reporting as well as exploring potential applications towards improved land administration in South Africa. The findings of this thesis indicate that, with certain legislative amendments, adjustments to institutional arrangements, careful thesis of operational workstreams and rigorous monitoring and oversight, geospatial municipal registers of properties may contribute a lot more than their present role of providing coverage for property rating. The role of the municipal register of properties should be elevated from providing coverage for property rates to the ‘single version of the truth’ for all property-related business processes in municipalities and beyond.

KEYWORDS

Property rates, rating, MPRA, municipal register of properties, geospatial, municipalities, recurrent property tax, coverage, interoperability, base registers.

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LIST OF ACRONYMS

AGSA	AGSA South Africa (Auditor General)
AI	Artificial Intelligence
B-BBEE	Broad-Based Black Economic Empowerment
CAMA	Computer Assisted Mass Appraisal
CoGTA	Department of Cooperative Governance and Traditional Affairs
FIG	Fédération Internationale de Géomètres (International Federation of Surveyors)
Financial Systems	Integrated Financial Management Information Systems
GIS	Geographic Information Systems
ICT or IT	Information and Communication Technologies
IVSC	International Valuations Standards Committee
MEC	Provincial member of the Executive Council
MFMA	Local Government: Municipal Finance Management Act 56 of 2003
MPRA	Local Government: Municipal Property Rates Act 6 of 2004
mSCOA	Municipal Standard Chart of Accounts
OVG	Office of the Valuer General
SACPVP	South Africa Council for the Property Valuers Profession
SAGC	South African Geomatics Council
SAGI	South African Geomatics Institute
SAIV	South African Institute of Valuers
SASDI	South African Spatial Data Infrastructure
SDF	Spatial Development Framework
SDI	Spatial Data Infrastructure
SDI Act	Spatial Data Infrastructure Act 54 of 2003
SG code	The Surveyor General's code, the unique property identifier
VRMS	Valuation Roll Management System

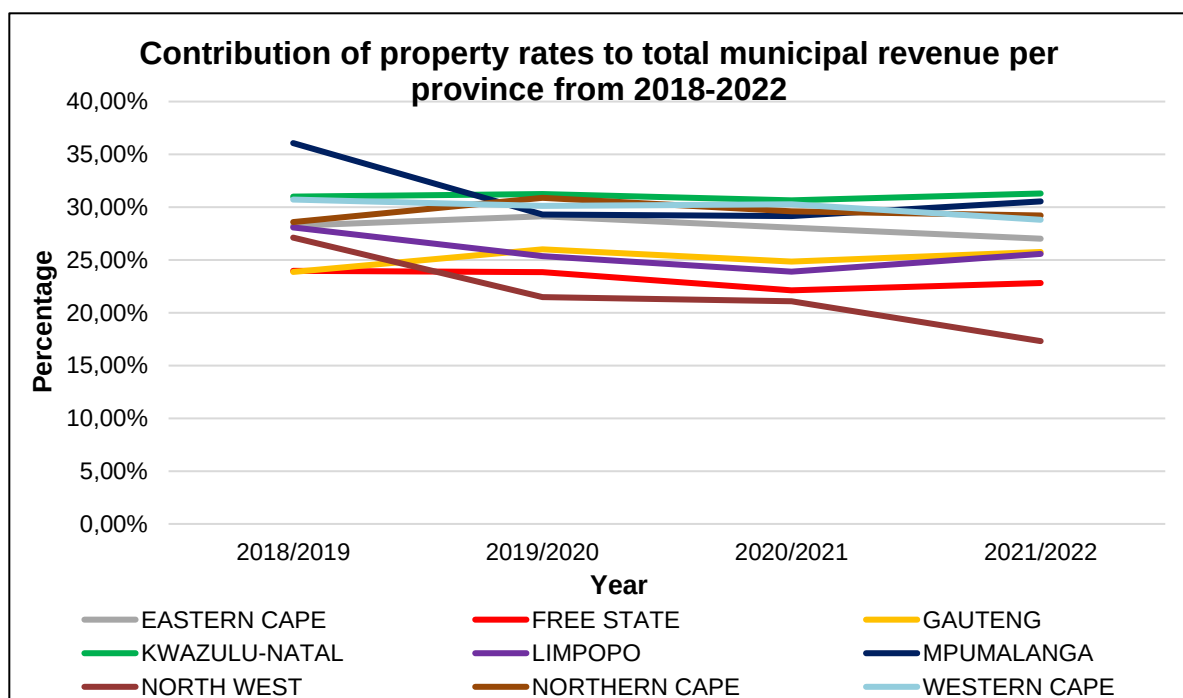
CHAPTER 1: INTRODUCTION AND CONTEXT

1.1 INTRODUCTION AND BACKGROUND

The Local Government: Municipal Property Rates Act, 6 of 2004 (hereafter “MPRA”) regulates how property rates, also known as recurrent property tax, are levied by municipalities in South Africa. These powers are conferred through section 229 of *The Constitution of the Republic of South Africa, 1996*, (hereafter “*The Constitution*”) that deals with municipal fiscal powers and functions. Levying property rates in South Africa is the responsibility of the 205 local municipalities and eight metropolitan municipalities. While the MPRA has been in place for almost 20 years, there are still major problems with certain aspects of this Act - including the municipal registers of properties.

Municipalities are required to fund services to benefit their entire communities, as opposed to individual households. These services include installation and maintenance of infrastructure, municipal administration, and governance (Ackerman *et al.*, 2022). South African municipalities have a constitutional mandate to provide these services to their communities in a sustainable manner. Figure 1.1 illustrates the percentage contribution by property rates of between 20-30 percent of the total municipal own-source revenue across the nine different provinces, 2018/2019 to 2021/2022 (National Treasury, 2024). These contributions illustrate the importance of property rates as an own source revenue enabling municipalities to achieve their constitutional objectives. The evidence provided in Figure 1.1 emphasises the relevance of property rates in South Africa and the importance of this research that investigates the current role of the municipal registers of properties.

Figure 1.1: Property rates as percentage of the total municipal revenue from 2018/19 - 2021/22



Source: Analysis of data extracted from *Municipal Money*, National Treasury: Author's own interpretation.

The percentage of properties identified, valued and recorded in a valuation or tax roll is defined as coverage, Kelly (2000). Franzsen and McCluskey (2017) state that the initial consideration for property tax efficacies is the assembly and maintenance of a complete property inventory or register. Provisions for the assembly and maintenance of the municipal register of properties to provide coverage for property rates are provided in Section 23 of the MPRA. These municipal registers of properties provide the property inventories for property rates. As such they need to be accurate, current and complete. This thesis not only addresses the current role provided by the municipal registers of properties, but also investigates possible extended or potential roles of these municipal registers of properties.

The introductory comments that follow provide a brief description of the spheres of government in South Africa and the role of local government with respect to their service delivery mandate. The Constitution established three spheres of government in South Africa, namely national, provincial and local government. All three spheres of government have legislative and executive authority as distinctive, interdependent and interrelated entities. Chapter 7 of the Constitution provides a framework for the local government sphere, entitling municipalities to govern, on their own initiative, the local government affairs of their communities, subject to national and provincial legislation. Municipalities are defined geographic areas governed by municipal councils. According to the MPRA, municipalities are required to levy property rates on all rateable properties in their geographic areas. Section 4 of the Local Government: Municipal Demarcation Act 27 of 1998 outlines the criteria and procedures for the determination of municipal boundaries by the Municipal Demarcation Board. This board's primary function is to determine municipal boundaries. Municipal boundaries are wall-to-wall so that every property is included in a municipality.

Giving effect to Section 152(1) of the Constitution, Sections 8; 9 and 10 of the Local Government: Municipal Structures Act 117 of 1998 define three municipal categories, namely Category A (Metropolitan) or Category B (Local) and Category C (District) municipalities. The Development Bank of South Africa's Municipal Infrastructure Investment Framework (2011) provides further sub-categories that are, according to the 2018 Municipal Demarcation Board Report, widely used – as indicated in Table 1.1.

The spectrum of municipalities in South Africa ranges from highly capacitated, well-resourced metropolitan municipalities to remote, rural centres with inadequate resources and poor or non-existent infrastructure. All municipalities are required to move towards the social and economic upliftment of local communities and to ensure universal access to essential services (Preamble to the Local Government: Municipal Systems Act, 32 of 2000). National Treasury is mandated to supervise municipal finances. Property rates is an own source revenue for municipalities. However, the MPRA is not overseen by National Treasury. The oversight and monitoring of the MPRA is assigned to the Department of Co-operative Governance (hereafter "CoGTA").

Table 1.1: Municipal classifications used in South Africa

Classification	Description of the classification	Other comments
A	Metropolitan municipalities	
B – B1; B2; B3 & B4	From larger high-capacity B1 municipalities, through to those with less capacity and limited powers and functions, B4 municipalities.	
C	District municipalities that function as water authorities and District municipalities without a water authority.	District municipalities do not have a rating function.

Source: Adapted from The Development Bank of South Africa's Municipal Infrastructure Investment Framework (2011). See also Franzsen (2022).

National Treasury's mandate is to secure sound and sustainable management and the financial affairs of municipalities that includes establishing norms and standards. National Treasury prescribes that municipalities report their financial transactions through provisions provided in the Regulations of the Local Government: Municipal Finance Management Act, 56 of 2003 (hereafter "MFMA"). These transactional reporting requirements include the locational origin and nature of all municipal revenue, as well as where and how municipal expenses are disbursed. A focus of this study is to establish whether the municipal registers of properties prepared and maintained for property rates in terms of the MPRA may also support municipal transactional reporting required by the MFMA.

This thesis focuses on the legislative frameworks, the institutional arrangements and operational realities and their respective impact on rates efficacies measured as revenue from property rates. The oversight and monitoring functions of CoGTA, National Treasury, as well as the government department responsible for the integration of the underlying cadastre, land information and geospatial data, the South African Spatial Data Infrastructure Directorate, hereafter ("SASDI Directorate") are included within the ambit of this thesis.

The unique identification of each property parcel and its associated characteristics or attributes within the municipality's geographic area is the starting point to establish coverage for property rates. This thesis considers "property" as immovable property or a real right registered in the name of a

person, or, in the case of a sectional title scheme¹, the sectional title unit registered in the name of a person. Property and its various attributes are multi-dimensional, cross-cutting different disciplines, including rights to land (tenure), land use development, land administration and property valuations.

The state is the primary steward of land and land data in South Africa. Land governance or the exercise of political, economic and administrative authority over land, includes economic development, agriculture, food security, climate as well as other land-related matters. In this extensive reach, it is inevitable that property data are dispersed across various departments, institutions and organisations (both public and private). This earns South African property data the unenviable description of being incomplete, fragmented, inaccessible and often duplicated (Mey et al, 2020).

1.2 RESEARCH AIM AND OBJECTIVES

The aim of this research is to review the current role of the municipal registers of properties in South Africa and how the municipal registers of properties are currently implemented from legislative, institutional and operational perspectives. The MPRA provides for the assembly and maintenance of municipal registers of properties. These municipal registers of properties or inventories provide the coverage required for recurrent property taxation. This thesis evaluates the current role of the property registers towards property rates efficacies. The purpose of this research is to contribute to developing a consistent understanding of the utility of the municipal registers of properties and the operational tasks required to establish and maintain these registers. The research objectives are to improve the efficacy of property rates through better coverage, to provide reform recommendations for more successful municipal financial reporting, and to consider the potential role of the municipal property registers for improved land administration in South Africa.

To provide a starting point for this thesis the following extract from the MPRA is provided verbatim:

Part 5: Municipal register of properties

23. Register of properties

(1) A municipality must draw up and maintain a register in respect of properties situated within that municipality, consisting of a Part A and a Part B.

(2) Part A of the register consists of the current valuation roll of the municipality, including any supplementary valuation rolls of the municipality prepared in terms of Section 78.

(3) Part B of the register must specify which properties on the valuation roll or any supplementary valuation rolls are subject to-

- (a) an exemption from the rate in terms of Section 15;*
- (b) a rebate on or a reduction in the rate in terms of Section 15;*

¹ The Sectional Title Act 95 of 1986 allows individual ownership of part of a property (section) and shared ownership of all other areas (*common property*).

- (c) *a phasing-in of the rate in terms of Section 21; or*
- (d) *an exclusion referred to in Section 17(1)(a), (e),(g), (h) and (i).*

(4) The register must be open for inspection by the public during office hours. If the municipality has an official website or another website available to it, the register must be displayed on that website.

(5) A municipality must at regular intervals, but at least annually, update Part B of the register. Part A of the register must be updated in accordance with the provisions of this Act relating to the updating and supplementing of valuation rolls.

Primary to this thesis is the definition of Parts A and B of the municipal registers of properties. Part A is the current valuation roll, or the iterative version of the valuation roll integrated to the municipal billing systems to enable the municipality to issue monthly rates accounts. Part A of the municipal register of properties is defined as the general valuation roll, together with any subsequent changes effected to the valuation roll through the outcome of objection reviews, valuation appeal decisions, as well as all subsequent changes to the entries in the valuation roll through the preparation of supplementary valuations. Thus, the municipal register of properties provides coverage for municipal property rates. Part B of the municipal register of properties contains the current valuation roll, Part A, with details of the discretionary rates relief provided for in the municipal rates policies, together with all the impermissible exclusions prescribed in the MPRA.

This thesis has five key objectives:

- To investigate and critically analyse how municipal registers of property are currently implemented and whether they provide complete and accurate coverage for property rates;
- To indicate how the municipal registers of properties may support the prescribed municipal financial transactional reporting to National Treasury. This objective includes the consideration of whether municipal revenue management may be complemented through access to geospatial municipal registers of properties;
- To investigate whether the current quality assurance and oversight provisions in the relevant legal frameworks are adequate in relation to monitoring the completeness, accuracy and currency of the municipal registers of properties;
- To investigate the potential role of municipal registers of properties towards improved land administration in South Africa;
- To outline the key findings under the respective legislative, institutional, operational and monitoring perspectives towards developing reforms and recommendations for improving the efficacies of property rating in South Africa in Chapter 8.

To achieve these objectives, the review of the municipal register of properties in this thesis is approached sequentially from legislative, institutional, operational and monitoring perspectives. The research questions interrogate these broad headings through a predominately qualitative analysis.

Key findings from this thesis inform the development of appropriate reform recommendations for geospatial municipal registers of properties, to provide improved coverage for recurrent property tax efficacies, the contribution to more successful municipal financial reporting through geospatial platforms and, possibly, to contribute towards improving land administration systems in South Africa.

1.3 RESEARCH QUESTIONS

Based on the stated research objectives, I address the following specific questions:

- How are the municipal registers of properties provided for in the MPRA currently contributing to property rates coverage?
- How could the municipal registers of properties support regulatory municipal financial reporting and the management of municipal revenues in South Africa?
- Could the municipal registers of properties complement current land administration and land management initiatives, and if this is feasible, how could the municipal registers of properties enhance these initiatives?

1.4 RESEARCH METHODOLOGY

This is a doctrinal thesis whereby information and data are reviewed from a predominately qualitative rather than quantitative perspective. The respective issues pertaining to the current use of the municipal register of properties are discovered and described in terms of processes and structures. The interrogation is directed towards addressing the research questions formulated in Section 1.3.

Lamb *et al* (2004) indicate that inter-disciplinary research concentrates on the relationship/s between two or more disciplines. This thesis is interdisciplinary in that it reviews the role of municipal property registers from property rates, municipal revenue and land administration disciplines. The findings about the municipal register of properties cut across several policy domains, different spheres of government and address various challenges. By identifying the challenges or problems and formulating the right questions, appropriate findings are developed into reform recommendations. This thesis includes both the flexibility and openness to various disciplines provided for in the context of qualitative research.

Rittel and Webber (1973) coined the term “wicked problems”. These describe the “dynamic complexity of many public problems” which “defy the confines of established stove piped systems of problem definition, administration and resolution” (Rittel & Webber, 1973: 159). Rittel and Webber (1973: 165) describe problems “as discrepancies between the state of affairs as it is and as it ought to be, and that the process of resolving the problem starts with the search for a causal explanation of the discrepancy”.

Conkin (2005) indicates that, as these are causal relationships, a single solution may have unintended consequences that generates other ‘wicked problems’. According to Termeer (2012), wicked problems are especially challenging for those working in government. Rittel and Webber (1973: 163) advocate incrementalism whereby small steps are implemented “in the hope of

contributing systematically to overall improvement". The improved outcomes are unlikely unless there is cooperation and collaboration between organisational units that "do not have hierarchical control over each other, and where the aim is to generate outcomes that cannot be achieved by the units working in isolation" (Halligan, Buick and O'Flynn, 2011: 75).

The "whole of government approach", described by Weber and Khademian (2008), frames the structure of this thesis. In line with this theoretical framework, various action strategies or collaborative approaches, such as knowledge networks or other forms of horizontal government initiatives, are advocated to address the emerging challenges, as these pertain to the municipal register of properties. In the public sector, where there is often the tendency by institutional departments to operate in silos or "cultural fortresses" (Head & Alford, 2008), the whole of government approach requires organisational change. The Australian Public Service Commission Advisory Committee Report (2004: v) articulates the need for a whole of government approach for the following reasons:

"Ensuring security, building a strong economy, coping with demographic change and crafting social policy" where these deliverables require "the active participation of a range of central and line agencies."

This approach examines the many different and sometimes competing imperatives contributing to the successful work of the whole of government. Furthermore, this approach seeks to learn from both the successes and the failures. Horizontal management is recommended to mitigate the silo approach or organisational fragmentation in the public sector. Colgan, Kennedy and Doherty (2014) describe the whole of government approach as the relevant term for a group of responses that address the problem of increased public sector fragmentation. The adoption of whole of government approaches is driven by a need to increase coordination and resource sharing, as well as the overall efficacies of the public sector.

This approach includes an explicit cautionary regarding the selection of the appropriate level for remedial intervention. Where a problem is addressed at too low a level, the attempt in addressing the specific problem may worsen the situation and even create further challenges at a higher level of government. Rittel and Weber (1973: 165), warn that the:

"[r]emoval of that cause poses another problem of which the original problem is a symptom. In turn the latter could be considered the symptom of still another higher-level problem ... the higher the level of problem formulation, the broader and more generalised the problem becomes and the more difficult it becomes to do something about it".

According to Colgan, Kennedy and Doherty (2014), there are four core considerations when adopting the whole of government approach to address policy matters, namely:

- Governments must adopt a horizontal outcome focused approach to problem solving.
- Different government agencies or departments have different mandates. The success of any solution is how well it addresses the collective intentions of the overarching policy framework.

- The participating government agencies must use their respective skills and disciplines to enable complex challenges to be addressed. This cannot be achieved without an interdisciplinary approach where the varying considerations between different government agencies are managed.
- The whole of government approach should adopt a systemic process. This is perceived as strengthening strategies through a broader understanding of the integrated issues.

The whole of government approach is a theoretical approach that addresses both internal and external factors. Termeer *et al* (2015) state that to achieve shared goals, government needs to address various interdisciplinary issues simultaneously, to be agile about responding to changes in agendas and expectations and to identify bottlenecks or areas of stagnation. In short, the better all the stakeholders understand the problems, the higher the probability of identifying and implementing the reform recommendations. In other words, this author proposes that to understand an organised whole, one must understand the respective parts and the relationships between these parts (Termeer *et al*, 2015). This requires a holistic strategy taking insights from various disciplines, departments and stakeholders, each of whom have individual and often different perspectives and legislative prerogatives.

The literature review addresses what recent authors have written about registers of properties or property inventories and the role that these inventories play internationally regarding taxation efficacies, supporting financial reporting, and the development of appropriate land administration systems. Through reviewing the existing literature, I acquired a better understanding of the subject area across the different disciplines, as well as additional insights that extended my initial perception of issues relating to the municipal register of properties.

This thesis follows a systematic approach whereby the legislative frameworks for local government's recurrent property taxation, prescription for transactional reporting and the national requirements for spatial data infrastructure in South Africa are sequentially addressed. This thesis is fundamentally a content analysis – a critical review of the legislative frameworks together with a practical analysis of how the legislative frameworks are implemented operationally.

Following the investigation of the relevant policy frameworks, the relevant institutional arrangements are reviewed from the perspective of the municipal registers of properties. These include the roles and responsibilities of municipalities, as well as the related national and provincial government departments. The thesis then addresses the current use of the municipal registers of properties from an operational perspective. Lastly, the various legislated monitoring provisions, as well as the resource capacity of the respective institutions are investigated as these relate to the oversight of the municipal register of properties. Collectively this research adopts an integrated approach whereby the insights from the respective disciplines and stakeholders support the

identification of key issues and the development of interdisciplinary solutions towards the achievement of whole government objectives.

Following the systematic thesis of the property register outlined above, I use a descriptive case study in Chapter 6 to illustrate the differences between the role of the municipal register of properties in South Africa compared to that of the Netherlands. A comparative analysis is considered an appropriate research design for acquiring concrete and in-depth contextual knowledge about a specific real-world object. The selected case study focuses on the contribution of the national base registers in the Netherlands to South Africa's property rates efficacies. The Netherlands was selected as a useful case study as this country is at the forefront of best property tax practice globally. On the use of technologies to enhance own-source revenues, Raich and Kwak (2023) identify the Netherlands as having comprehensive tax coverage, excellent attribute data that is frequently rebased and a fully integrated multipurpose cadastre.

For example, Bervoets et al (2024) focus on the importance of current market value as a tax base; property relief policy; and especially on the implementation of new types of valuation models and the importance of a solid system of base registers with the latter being the focus of this thesis. The Netherlands case study provides an in-depth description of property data management and maintenance practices in the country. The objective of the comparative analysis is to highlight key findings, both similarities and differences, between the Netherlands and South Africa. The Netherlands' mature valuation and rating model is reviewed against the evolving experience of South Africa. Furthermore, South Africa was first colonized by the Dutch in 1652 and still today the South African legal system is a hybrid system of Roman-Dutch and English Common Law (Zimmermann & Visser, 1996; Du Bois & Visser, 2003; Van den Bergh, 2012). The South African property law and system of deeds registration are founded in Roman-Dutch Law (Milton, 1996).

1.5 IMPORTANCE AND SIGNIFICANCE OF THIS THESIS

The purpose of this research is towards developing a consistent understanding of the role and utility of the municipal registers of properties. The municipal register of properties, Part A, is the current valuation roll (Underscore provided by the author for emphasis). There is no separation between the municipal register of properties and the valuation roll. This conceptualisation is frequently misunderstood.

The current role of the municipal registers of properties is to provide coverage for property rates in South Africa. This thesis reviews the status of the municipal registers of properties and investigates the feasibility of extending this role towards providing a reliable single property data hub in each municipality. Such a complete and accurate property data hub would support successful financial transactional reporting where a locational reference is required. This is referred to as the regional segment reporting and is prescribed by National Treasury as mandatory in terms of the Municipal Standards Chart of Accounts. Key to this research is the focus on property data interoperability towards improving property rates efficacy and possibly financial reporting. When investigating the municipal property register from an institutional perspective the focus is on data custodianship and

the necessity for institutional integration, or at least collaboration, towards promoting the interoperability of data as a fundamental property data standard.

This thesis also addresses the potential application of the municipal property registers for improved land administration and national planning in South Africa.

1.6 LIMITATIONS OF THIS THESIS

The following aspects of this thesis may be considered as limitations:

1.6.1 Access to municipal data

A key limitation of this thesis is the access to and the availability of municipal data. National Treasury's Municipal Money web-portal provides extensive municipal financial data. The drawback to this portal is that unless you know exactly what and where to look for the raw datasets, this data quantum is overwhelming. Users of this data source must be specific about their data requirements and willing to spend considerable time mining the data to locate and extract the relevant datasets.

For example, the empirical evidence in respect of the coverage of the valuation rolls compared to the financial systems is conducted for a limited sample of only ten variously classified (B1-B4) municipalities (see Section 4.3, Table 4.3). No metropolitan municipalities are included in this sample. The limitation of the sample size is acknowledged. Further broader analysis is required with the remedial action identified per municipality for this to be a meaningful exercise. Further research to streamline and enable improved accessibility to the Municipal Money Portal should be undertaken by an independent researcher or National Treasury themselves.

1.6.2 Comparative analysis

Researchers can use a range of data sources and data gathering techniques to examine complex phenomena in their contexts by employing the qualitative case study methodology. It is a useful approach for developing treatments, evaluating programs, and advancing theory in the fields of business studies, social work, education, environmental studies, and health and social science. Case study research has a long and distinguished history across many disciplines (Creswell & Poth, 2017). An obvious feature of a case study is that it investigates a phenomenon in its natural context, that is in its real-life setting. Yin (2009) emphasises the power of high-quality case study research that focuses on rigour, validity, and reliability. Yin (2018) further notes that the case (unit of analysis) is directly linked with the research questions posed in the study, and the way in which the case is defined will have a direct effect on the research design and the data collection strategy. In this thesis the sequential investigative framework of investigating the case themes of the legislative framework, institutional arrangements, operational implementation and monitoring and oversight within the Netherlands are compared to South Africa's municipal rating model. The findings are referred to as assertions (Stake, 1995) or patterns or explanations (Yin, 2009).

While case study research continues to be an essential form of inquiry, there are both strengths and weaknesses attached to using this alone or in combination with other research methods (Yin, 2018). This thesis uses this comparative analysis to provide a descriptive thesis of real-life phenomena, where a big sample population would have been difficult to obtain. The exploration of a single study may have limitations in terms of generalising any conclusions. However, in this instance, the findings from the comparative analysis with the Netherlands serve to refine the legislative, institutional, operational and oversight reform recommendations for the South African context. The single comparative analysis between South Africa and the Netherlands, Chapter 6, may be viewed as a limitation of this review. In terms of crystalizing the issues towards informing key findings this single case study performed admirably.

1.7 DESCRIPTIONS OF IMPORTANT TERMS AND CONCEPTS (LISTED ALPHABETICALLY)

“Cadastre”: Cadastre is a parcel based and up-to-date land information system containing a record of interests in land (e.g., rights, restrictions and responsibilities). It usually includes a geometric description of land parcels linked to other records describing the nature of the interests, and ownership or control of those interests, and often the value of the parcel and its improvements. It may be established for fiscal purposes e.g. valuation and recurrent property taxation, legal purposes such as conveyancing, land use management and for planning and administrative purposes to enable sustainable development and environmental protection (International Federation of Surveyors, 2020).

“CAMA”: The abbreviation for Computer Assisted Mass Appraisal, is defined as the process of valuing a universe of properties on a given date using a standard methodology, employing common data and allowing for statistical testing. CAMA is a generic term which refers to any soft-ware application used by government agencies to assist in property valuation (McClusky et al, 1997).

“Interoperability”: This term refers to the ability of applications and systems to share data across geographical, political and organisational boundaries. Interoperability refers to the standards, protocols, technologies, and mechanisms permitting data to flow between diverse systems with minimal human intervention. It allows diverse systems to talk to each other and share information in real time (<https://aws.amazon.com/what-is/interoperability/>)

“Land administration”: The process of determining, recording and disseminating information about ownership, value and use of land and its associated resources. These processes include the determination (sometimes called ‘adjudication’) of land rights and other attributes, surveying and describing these, their detailed documentation, and the provision of relevant information for supporting land markets (United Nations, 1996)

“Land administration systems”: This is understood to mean all of the infrastructure necessary for the use of processes such as: institutional arrangements, legal frameworks, land information systems, standards, and the management and dissemination of systems and technologies necessary for implementing these processes (Williamson *et al*, 2010).

“Land governance”: Land governance concerns the rules, processes and structures through which decisions are made about access to land and its use, and the way in which these decisions are implemented and enforced. Land governance encompasses statutory, customary, religious and informal institutions. It includes state structures including municipalities responsible for land, as well as informal stakeholders and traditional authorities. The concept of land governance covers the legal and policy framework for land, as well as traditional practices governing land transactions, inheritance and dispute resolution. In short, it is fundamentally about power and the political economy of land (FAO, 2022).

“Market value”: The Local Government: Municipal Property Rates Act 6 of 2004 (MPRA) defines market value as the amount a property would have realised if sold on the date of valuation in an open market by a willing seller to a willing buyer.

The estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction after proper marketing where the parties had each acted knowledgeably, prudently and without compulsion (Royal Institute of Chartered Surveyors, 2019).

The estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion (International Valuation Standards Council, 2021).

“Property”: For the purposes of this study, “property” is confined to immovable property, the interests, benefits and rights inherent in the ownership of the land, together with anything permanently attached to the land or legally defined as immovable; the bundle of rights with which ownership of real estate is endowed (International Association of Assessing Officers, 2015). Beyond the strict definition of land as a physical object, there is an emerging appreciation of cultural values and cognitive meanings that land plays in society and the economy (Williamson *et al*, 2010).

“Register of properties”: This is a register or inventory of all the property records included in the geographic area demarcated for recurrent property taxation or property rates. The property records provide information of various property attributes or characteristics and may include geospatial attributes. The term “property register” or inventories includes not only the initial assembly, but the ongoing updating and maintenance of the property records to perpetuate coverage for recurrent property taxation. The MPRA provides that Part A of the municipal register of properties consists of the current valuation roll, i.e. the general valuation roll together with any supplementary valuations prepared after the general valuation. Part B of the municipal register of properties details properties that are subject to either impermissible or discretionary rates relief.

“Recurrent property tax or property rates”: This term refers to an annual tax on immovable assets, whether these are land, or buildings, or both (Franzsen & McCluskey, 2017). South Africa refers to recurrent property tax as property rates. These terms are used interchangeably with ‘rates’ referencing South Africa and recurrent property tax in relation to other countries.

“Valuation”: The process of estimating value of a specific parcel or parcels of real estate or of an item or items of personal property as of a given date (International Association of Assessing Officers, 2015).

1.8 STRUCTURE OF THE RESEARCH

Chapter 1 provides the background and context for the research. It states the research objectives and outlines the key research questions to be addressed in the chapters that follow. This initial chapter also describes the research methodology used to address the stated research questions, in section 1.4.

Chapter 2 reviews the literature on recurrent property tax, its importance as an own revenue source for local government, and both its advantages and disadvantages. The role of property data currency, resource capacity, and the need for accurate property data in property register assembly and maintenance are key components in this literature review.

Chapter 3 is premised on the principle that land is an important and finite asset. Chapter 3 investigates how property is defined in South Africa and the relevant legislative frameworks governing property registration, property identification, property administration, spatial planning, and spatial data infrastructure. The South African Spatial Data Infrastructure Act provides the regulatory framework of how spatial data and property information should be managed, acknowledging various shortcomings. This chapter’s focus is on property data and different property attributes/objects/base data sets that should be acquired for the purposes of preparing and administering property rates. These data sets are relevant property information used in land management and land administration systems.

Chapter 4 analyses the Municipal Property Register Act (MPRA) and the Municipal Financial Management Act (MFMA) in South Africa. The MPRA regulates municipalities’ powers to impose recurrent property taxation. The MPRA mandates municipalities to draw up and maintain municipal registers of properties. The MFMA provides a regulatory framework for municipal financial management including accurate municipal financial transactional reporting. The success of the prescribed locational municipal financial reporting depends on the accuracy and currency of the geospatial municipal registers of properties. The chapter also examines the institutional relationships between key stakeholders, including municipalities, CoGTA, National Treasury, and the South African Spatial Data Infrastructure Directorate. The thesis addresses the operational processes for assembling the municipal register of properties, preparing assessments for property rates including the requirements for roll publication, processing objections and appeals and then maintaining the current valuation roll (Part A of the municipal register of properties) through the preparation of supplementary valuations whenever necessary for the duration of the rolls validity cycle.

In Chapter 5, I evaluate the existing monitoring provisions for the municipal registers of properties in the MPRA, the MFMA, the SDI Act, as well as the oversight extended by South Africa’s Auditor General. The investigation addresses the adequacy of existing quality assurance and oversight

provisions for the municipal registers of properties in the legal frameworks in respect of the efficacy of property rates, as well as the success of municipal financial reporting.

Chapter 6 provides a comparative analysis between the Netherlands's recurrent property taxation model specifically its system of base registers against the current processes required for property valuation for the purposes of rating, tax relief, quality assurance measures and use of municipal registers of properties in South Africa.

Chapter 7 consolidates the conclusions and insights from the earlier chapters into key findings under the headings of policy, institutional, operational, monitoring and oversight.

In the final chapter, Chapter 8, I develop reform recommendations as well as possible mechanisms for implementing such reforms. These draw conclusions about the potential extension of the current role of the municipal registers of properties for other applications at various levels of government and within the public domain.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This literature survey provides the background towards framing the body of the research to thesis municipal registers of properties as they are currently implemented in South Africa. The literature thesis addresses what previous authors have written about:

- Whether property rates are a 'good' tax?
- Determinants of recurrent property tax performance;
- Land and property data required for assembling and updating property inventories or registers;
- Other applications for property inventories or property registers;
- Quality standards for property data and property registers;
- Institutional arrangements impacting on property registers.

Broadly defined, the term "property tax" includes property transfer taxes, stamp duties, and certain financial transaction taxes (International Monetary Fund, 2014). Narrowly defined, this term is used to refer to the recurrent tax on immovable property (Bahl *et al*, 2022; Franzsen & McCluskey, 2017). For the purposes of this thesis a "recurrent property tax", or in the context of South Africa – "property rates" refers to an annual tax on immovable assets, whether these are land, or buildings, or both (Franzsen & McCluskey, 2017; Noisette & Rider, 2009). The efficacies of property rates are reliant on the inclusion of all the taxable properties within a specific geographic area in the tax net. This inventory of taxable properties is referred to as coverage.

Internationally recurrent property tax is an important component of revenue, especially for local government. The efficacies of property rates vary across countries, some developed, others developing. There is no consensus about what defines a country as 'developed' or 'developing', as the term 'development' has shifted since the term was conceptualised². There are also different permutations of the classes of property and combinations of property owners liable for recurrent property tax. For example, some countries use land only as the taxable object, some only buildings, while others use a combination of land and buildings/improvements as the basis for recurrent property tax assessments (Franzsen & McCluskey, 2017).

Bahl *et al* (2022) reflect that the criticality of property taxes is its direct linkage to service delivery at the local government level. McCluskey *et al* (2008) find that access to and the adequacy of own source revenues is the key to a local government's ability to deliver necessary goods and services to its population. If properly administered, recurrent property tax may be a buoyant source of revenue

² For the purposes of this thesis South Africa is considered as a developing country as it has, relative to other countries, a lower Gross Domestic Product or per capita average income, a lower standard of living, lower literacy rates and less functional government (Kulik, 2024).

and an excellent tax to support the provision of local government services (Bahl, 2009; Bahl & Bird, 2008).

Ezigbalike and Rajabifard (2009) propose that the collaboration by all levels of society including governments, private sectors and citizens accessing spatial data may culminate in the emergence of a spatial society. These additional and alternate utilisations of accurate and complete property data may only be unlocked if the data is interoperable, that is computer systems and software are able to exchange and use of information. Land administration systems provide a way of managing geographic information presenting legally significant linkages between people and land. Information technology plays a strategically important part in land administration, as this activity deals with enormous amounts of dynamic data that require continual maintenance (van Oosterom *et al*, 2006: 3). Okunogbe and Tourek (2024) concur that electronic systems that collect, generate, process and store large amounts of data can support a wide set of tax instruments including property rates.

2.2 IS RECURRENT PROPERTY TAX A 'GOOD' TAX?

Authors generally agree that the recurrent property tax is a good local tax (Kelly, 2000, Bahl & Bird, 2008; Youngman, 2016; Franzsen & McCluskey, 2017). Dougherty *et al* (2019) state that recurrent taxation on immovable property is an important source of own-source revenue for local governments. Slack (2023) notes that recurrent property tax revenues rarely exceed 3% of gross domestic product in any country, usually generating far less than that. However, this is the taxation over which municipalities exert the most control. Property rates is a municipal own-revenue source whereby municipalities may set tax rates, grant tax relief or allowances and determine the revenue required to address the specific needs of their communities. Bird and Slack (2004) note that local government's dependence on recurrent property tax varies across jurisdictions. They highlight the importance of property rates as an important source of sub-national revenue. The extent to which local governments have control over property taxes is often an important determinant of the extent to which they can make autonomous expenditure decisions (Bird & Slack, 2004).

Bird and Slack (2004) thesis the taxation of land and property across 25 countries, including both developed and developing countries, as well as countries in transition. Their conclusion is that taxes on property and land are minor revenue sources across the sample of countries studied. Developed countries including Canada and the United States realise a high contribution by property taxation revenue to Gross Domestic Product (GDP): 3.5 percent (Canada) and 2.9 percent (United States) (Bahl *et al*, 2008).

Recent studies by the OECD (2023) illustrate that the contribution by recurrent taxes on immovable property remains consistent, see Table 2.1.

Table 2.1: Recurrent property tax contribution to GDP, 1990-2021

		1990	2000	2010	2020	2021
		%				
Canada	Recurrent taxes on immovable property	2.9	2.7	3.1	3.3	3.0
		%				
USA	Recurrent taxes on immovable property	2.7	2.5	2.9	2.9	2.8

Source: Adapted from OECD (2023).

These high levels of revenue generation require comprehensive base coverage, good valuation management systems and exemplary levels of compliance and enforcement. There is a high standard of municipal services and amenities in developed countries reflecting that property rates contributions correspond roughly to the perceived benefits. This earns the recurrent property tax the reputation of being a fair tax in developed countries.

In contrast, recurrent property tax is not used intensively in the revenue structures of most developing countries. However, this form of own-source revenue contributes significantly to financing sub-national governments. Bahl (2002) contends that it is likely that the demand for tax revenue will escalate as infrastructure needs and service demands from local governments escalate (Bahl, 2002). Bahl *et al* (2008) establish that about 18 percent of sub-national government spending is derived from property tax. This is explained by developing countries having fewer options for locally based taxation. Figure 1.1 shows the percentage contribution by property tax by South African municipalities as between 20-30 percent of the total municipal own-source revenue for the period 2018/2019 to 2021/2022. UN-Habitat (2011) indicates in their policy guide for land and property tax that there is a high potential for property taxation to contribute to the improvement of local communities. The caveat to this realisation is the requirement of policies and administrative procedures to be efficient (Awasthi, 2020). The finding is interpreted by the authors as indicative of the potential and the option of strengthening property rates practices in developing countries.

Recurrent property taxes have both advantages and disadvantages for municipalities (Bahl *et al*, 2008). Awasthi (2020) concludes that both theoretically and statistically, property rates are not only effective, but possess other characteristics including transparency, equality and a direct correlation with its benefits.

Sennoga *et al* (2008) note that property ownership may be concentrated with the wealthy minority. An advantage attributable to property rates is its stable revenue potential due to property being an immovable asset. Provided that there is adequate administration, recurrent property taxation may be a way to address vertical equity concerns of developing and transitional countries.

Bird (2004), Kelly (2000; 2013), Monkam (2010) and McCluskey *et al* (2018) concur that the adequacy of municipalities to generate their own revenues is key to local government's ability to deliver necessary goods and services to their communities. Under good administration with a sincere commitment to provide services, property rates may be a significant source of revenue for local

government. Recurrent property taxes are considered appropriate as a municipal revenue due to the close connection between local funded services and the benefits of these towards the market value of immovable properties. Recurrent property tax is said to enhance the accountability of municipalities if they can demonstrate how the revenues from this tax are spent (Plummer, 2009). However, prompting accountability still does not make property tax popular.

Bahl and Martinez-Vazquez (2008) identify disadvantages, including administrative costs, challenges around enforcement, negative perceptions towards payments and the inelasticity of recurrent property taxation. The inelasticity means that there are limitations on automatic revenue growth. These may be mitigated by periodic reassessments or the requirement for interim or supplementary valuations to accommodate changes to property attributes. These authors contend that (Bahl & Martinez-Vazquez, 2008: 28):

“In most developing and transitional counties property taxes are badly administered by any standard... Both assessment ratios and collection rates are very low, which leads to unfair treatment of various categories of taxpayers and the significant revenue leakage... Thus, even in the best of circumstances the property tax can seem a poor financing choice for local governments.”

Various authors propose that the property rates may offer a strategy away from the taxation of labour to a less distorting tax (Bahl & Martinez-Vazquez, 2008; Blöchliger & Kim, 2016; Norregaard, 2013). While it may be impossible to popularise recurrent property taxation, its palatability necessitates inclusive coverage of all of the properties within an area. An additional requirement is, according to these authors, for regular assessments with rates relief extended to lower income groups and other vulnerable categories of property owners. Blöchliger and Kim (2016) emphasise that the efficacy of the recurrent property tax system is premised on good administrative and judicial frameworks, including the enforcement of the payment of property rates.

Property rates efficacies are dependent on administrative costs, levels of enforcement, negative perceptions towards payment, as well as inelasticity, and provide useful contextual background to the research. The preceding paragraphs provide different perspectives about both the advantages and disadvantages of recurrent property taxation. Whether property rates are good or bad is dependent upon on various factors.

“The outcomes of our empirical analysis highlight the statistically significant impact on property tax collection of such determinants presenting a country’s state of development and its demographic, fiscal and property tax-specific characteristics. Specifically, the income level, the population density, and property tax rate correlate significantly and positively with property tax revenue, whereas federal transfers and household size have significantly negative impact.”

(Awasthi, Le and You, 2020: 11).

The successful use of property rates requires “sustained political will, technical capacity, systems and procedures, financial resources, and time, but it is well worth the effort” (Slack, 2023, 134). The ability of a country’s recurrent property tax to realise its projected revenues depends on tax base,

tax rates and the tax administration (Bahl & Bird, 2018). In the South African context property rates are a significant contributor to municipal revenues.

2.3 RECURRENT PROPERTY TAX PERFORMANCE AND THE IMPORTANCE OF COVERAGE

Various authors (Bahl & Bird, 2018; Kelly, 2018; Franzen & McClusky, 2017; Mathur *et al*, 2009) highlight the importance of the completeness of the property inventory or coverage, the currency of the valuation or tax rolls, the capacity of the associated administrative systems and human resources as influential on recurrent property tax performance. This section of the literature thesis provides evidence of what previous authors have written about the coverage required for recurrent property taxation.

Coverage or spatially enabled cadastre is the technical core that establishes that all properties are included in the inventory for the purposes of assessment. Franzsen and McCluskey (2017: 77) explain that:

“The objective of any property valuation roll should be that all properties are identified and given a unique reference number, the full inventory of properties is known, and the taxpayer is determined ... Identifying each parcel and its boundaries is a starting point in extending the coverage of the property tax.”

This foundation needs to be established prior to any assessments, rating or relief considerations. Mathur *et al* (2009) emphasise that while the first determinant of recurrent property tax revenue performance is coverage, other influences include the percent of taxable properties that are on the municipal tax register; the percent of total registered properties that are assessed for tax purposes; and the percentage of tax paying properties.

The initial assembly of the property register is not the only consideration. While property is immovable, it is also dynamic. Changes to property attributes need to be captured in the property register or property database. The property registers provide the initial coverage for the rates assessments and caretaker rates equity for the duration of the roll validity. Rates equity must be maintained through revaluing properties where changing property attributes prompt a change in value. For the purposes of this research, property attributes refer broadly to property characteristics or objects. Without the ongoing maintenance both the coverage and the equity of the property registers will be compromised. It follows that poor or limited coverage, whether through initial assembly or through irregular or inadequate updating, has implications for the revenue potential generated by the recurrent property tax. Compromised coverage may also impact any additional function these registers may have. Kelly (2013) writes that the initial step towards successful preparation of valuation rolls, or the assembly of a recurrent property tax base is the recording and management of the property information. This author includes data management as an additional requirement for achieving successful coverage.

Changes to property attributes or characteristics include land transfer, subdivision, consolidation, changes in land use, the construction of new improvements or the demolition of old or damaged improvements. Tang *et al* (2011) state that the most fundamental elements underpinning value-based taxation is the regular data maintenance and the updating of property characteristics,

ownership details and rental and sales information. All transactions impacting the property attributes must be managed and captured to inform valuation changes to the respective properties. This is, according to these authors, necessary to retain the accuracy of the coverage. The risk of failing to maintain the property register datasets not only compromises the tax coverage, but rating equity as well, as the development of appropriate mechanisms to facilitate the delivery of data and services.

Realising the vision of a spatially enabled society is dependent on the development of integrated spatially enabled data and “when the service delivery process incorporates seamless access to all information that a user of the service might need to make spatial or location-specific decisions associated with the service” (Williamson *et al*, 2011: 3). Governments need access to spatial information for decisions about the allocation of resources. These are seldom drawn from a single source of information, but from integrated and shared information (Molen, 2007).

In summary, coverage encompasses the aggregation or assembly of all the individual properties within an area. This is not limited to the assembly of the property registers but includes ongoing updating to maintain and expand coverage for equitable recurrent property taxation. Coverage or an up-to-date and accurate property register have a multiplicity of applications extending from property rates to include service delivery and resource allocation.

Once the coverage is in place the tax base may be assessed. The accuracy and frequency of assessments is subject to various discussion.

2.4 RECURRENT PROPERTY TAX PERFORMANCE, VALUATION ASSESSMENTS AND VALUATION CURRENCY

Fair and productive property tax requires a good initial assessment, but also periodic re-assessment or revaluations. Tomson (2005) states that regular and highly regulated reassessments with defined valuation dates are necessary. Revaluations reflect changes in property values over time (Bird & Slack, 2004; Kara *et al*, 2018). A fixed date of valuation promotes fair and equitable valuations. The frequency of the revaluation intervals varies.

The integrity of the value assessments in the tax base is reliant on the quality of the data used in the value determination. These datasets include deeds (ownership data), cadastre (spatial data), sales data, as well as other individual property attributes or objects. Defined quality benchmarks or standards are required for both the input data and the resultant recurrent taxation assessments.

The Netherlands, British Columbia (Canada), Hong Kong and Singapore conduct revaluations on an annual basis (Franzsen & McCluskey, 2017). Various Anglophone African countries, including Ghana, Liberia, Malawi, Eswatini, Zambia and Uganda are required to prepare new general valuation rolls for urban properties every five years. In South Africa, the frequency of revaluation differs between metropolitan and local municipalities (Section 32, MPRA). Metropolitan municipalities have a four-year validity period with the option to extend the validity for one year, while local municipalities have a five-year roll validity cycle with the discretionary extension for a further two years, i.e. seven years in total. In many of Africa’s Francophone and Lusophone countries revaluations are meant to occur annually. Monkam (2010) notes that this does not necessarily happen in practice. Provisions

for revaluations in these countries are conducted through voluntary self-declarations. Franzsen and McCluskey (2017) conclude that oversight is unclear and whether there is follow-up by government or simply non-declaration is indiscernible. Markets change over time, often resulting in significant shifts in tax incidence. Managing these shifting value-based areas is a further challenge for tax administrators.

The annual revaluation model practiced by the Netherlands illustrates that the more current the assessments, the greater the perceived integrity of the assessed values. In the Netherlands property owners recognise the values prepared for recurrent property taxation, known as WOZ (*Wet Waardering Onroerende Zaken*) values, as valid for informing the market value of their properties should they choose to sell their property. Irrespective of the period between the assessments the equity and uniformity of objective assessments is reliant on having sufficient transaction evidence, not only to determine but also to defend assessed values (McCluskey & Franzsen, 2004).

In conclusion, there is no clear definitive period between revaluations that is good or bad. However, there is clarity that sufficient comparable sales evidence, or mature or robust property markets should be in place to provide assessments that are perceived to have integrity and may be defended against appeals. The next consideration addresses institutional arrangements as these impact on the performance of recurrent property taxation.

2.5 PROPERTY TAX PERFORMANCE AND INSTITUTIONAL ARRANGEMENTS

This aspect towards the performance of property rates is summarised by Bahl *et al* (2008) and is simply that institutions matter greatly. The use of effective property taxation policies requires participating public agencies to develop a mutual understanding of the objectives of the policy and to understand their respective roles (Fjeldstad *et al*, 2019). Reforms implemented in various countries emphasise the necessity for institutional integration, or at least collaboration, towards promoting the interoperability of data as a fundamental property data standard. Williamson (2001) states that cadastre and land information should be presented to the valuer in an integrated system to provide the infrastructure required for effective property taxation and governance purposes. There is an emphasis on equity and justice, as these pertain to property and land issues. Enemark *et al* (2016) emphasise the requirement for land information systems and cadastre to contribute to an integrated institutional framework rather than one dominated by sectoral silos.

Enemark *et al* (2016) recommend an integrated institutional framework as part of the appropriate institutional arrangements for good land governance. This is a necessary reform from the fragmented sectoral silos typical of government structures, especially in developing countries. The land administration model (discussed in Section 2.7) includes tenure, value, use and development as key information pillars. Various professional services contribute to the different datasets required for efficient land administration. Notaries and lawyers are responsible for the legal or land registration part of the land recording, while valuers are responsible for the valuations of the land assets, whether this is land and buildings or land only. Surveyors are responsible for the survey and cadastre. These professionals are assigned to different institutions with various configurations across different

countries. Mikesell's research (2007) reinforces requirements for integration through cooperative administration, where core functions of tax administration, such as taxpayer registration, assessment, collection, enforcement and appeals are divided among national and sub-national tax authorities according to technical competencies and prescribed institutional arrangements.

There is substantial academic research about the advantages and disadvantages of centralised versus decentralised government structures. This debate is not considered in this thesis, suffice to mention that Ribot (2001) as well as Sikor and Müller (2009) state that decentralised government is appropriate for the management of property rates for the following reasons: That local institutions have a better understanding of local needs and are more inclined to respond to them, and that local government has better access to information and is more likely to be held accountable to local populations. Irrespective of whether recurrent taxation authorities are centralised or decentralised, there is a requirement for inter-organisational co-operation. Measures to improve cooperation should be established by linking the basic revenue administrative components including maintenance of property registers and the billing with the collection enforcement agencies. These considerations are addressed in the next section that addresses recurrent property tax performance and administrative considerations, including political will. Key to the success of all the processes involved in the assembly and maintenance of the property registers, the acquisition of reliable and adequate sales information for the assessments, the determination of the assessments and the administration of the property tax are reliant on technology advances. This thesis investigates whether adoption of technology innovations correlates with improved recurrent property tax efficacies.

2.6 PROPERTY TAX PERFORMANCE AND ADMINISTRATIVE CONSIDERATIONS, POLITICAL WILL AND THE USE OF TECHNOLOGY

Once the property register is prepared and the assessments concluded, the taxpayers must be invoiced by a collection agency. This is, in most cases, the municipality. The manner in which property records are identified and stored in the property register or valuation roll and the integration between the valuation roll and the municipal billing system influences the efficacies of billing and, ultimately, the collection of recurrent property taxation.

The Organisation for Economic Co-operation and Development (2013) (hereafter "OECD") defines the overall measure of tax efficiency as the ratio of total administrative costs to the relevant tax revenues. The full costs of the administration of recurrent property taxation, from billing through to revenue collection, are difficult to ascertain. According to McCluskey (2022), there are few, if any, disaggregated statistics on this. Anecdotal information suggests that the total cost of administration would be in the region of between 2 to 10 percent of total property rates revenue collected. This estimate is indicative of mature property tax systems. McCluskey's estimation is supported by the Head of Valuations for the City of Cape Town, one of South Africa's metropolitan municipalities, who indicated that 5 percent of the revenue was spent on the administration of property rates (Muller, 2022). Burgess and Stern (1993) state that where the costs of collection are more than 10 percent,

this may be symptomatic of problems. Where the administrative costs are higher than the revenue received, property rates is clearly dysfunctional.

Revenue collection is a major challenge facing many jurisdictions worldwide, but collection challenges tend to be more acute in developing countries where local governance is plagued by inefficiencies. In many African countries own source revenue is decreasing as a proportion of total revenue, resulting in a vicious cycle of overreliance on transfers from the national government (Fjeldstad, 2006; Fjeldstad & Heggstad, 2012). One of the fundamental problems facing local governments in developing countries is the widening gap between the availability of revenue resources and local spending needs. If the rapidly expanding urban areas in Africa are to capture the economic growth that accompanies this population growth, they need to increase the level and quality of public expenditures (Bahl *et al*, 2017). This implies the necessity for increased mobilisation of own source revenues.

It is acknowledged that recurrent property tax is generally difficult and costly to administer (Bahl *et al*, 2008). Franzsen (2020) notes that poor performance of property rates is often blamed on the nature of the tax base. Underlying reasons include unrealistically low tax rates and/or weak administration. Administrative factors include poor billing and/or collection or inadequate deployment of proper enforcement mechanisms. Bahl and Martinez-Vazquez (2008) include a good valuation system and a high rate of compliance as prerequisites for property rates efficacies. The development of a workable property management system involves investing in digital records management with the appropriate processes to collect and maintain the currency of the reliable property data. McCluskey *et al* (2012) include the requirement of competent public employees with sufficient expertise to adequately collect and maintain quality data for the required assessments. The integration of the valuation roll with the billing system is crucial for recurrent property tax collection. Recurrent property tax efficacies are adversely affected if the data integration between valuation rolls and the billing systems does not exist or is flawed. This implies that local government needs to be sufficiently modern in their utilisation of technology to be able operate efficiently and effectively (Friere & Garzon, 2014; Mascagni *et al*, 2014). There is consensus amongst authors that frequently administration is a fundamental weakness of the recurrent property tax (Bahl *et al*, 2008; Dillinger, 1991; Martinez-Vasquez, 2011).

Administrative capacity is identified as a barrier to an effective and efficient recurrent property tax system (Daud *et al*, 2013). The fixed costs of tax administration and compliance are challenging for government entities with limited administrative capacity. In a study of property tax challenges in East Africa, Kelly (1999) concludes that weak revenue administrations contribute to poor recurrent property tax collections. There are challenges for collections where input data identifying the properties and/or the records of account holders liable for the payment of recurrent property taxes are either incomplete, out-of-date or both.

Property tax exemptions or other types of discretionary relief are considerations for protecting vulnerable property owners within communities. Such non-taxpaying properties pose a dilemma for municipalities. Relief measures increase administrative costs and result in revenue foregone. With

reference to India, Mathur *et al* (2009) raise the question as to whether the administration costs of non-taxpaying properties are possibly too high. In India, where exempt properties, vacant properties and properties are excluded from the tax rolls, the estimated administration costs collectively contribute to an estimated 10 percent loss of property tax revenues.

In addition to the low administrative capacity, political will to support effective property tax enforcement is a consideration. How property tax is perceived by taxpayers and whether there is adequate political commitment to ensure that the property tax can generate sufficient revenue for local government are important considerations. Bahl *et al* (2008) emphasise the impact of the negative attitude of taxpayers towards the performance of this form of taxation. Such negativity implies that strong enforcement measures be included in the administrative provisions.

Transparency and public access to the underlying data are critical for improving public perceptions about the fairness of recurrent property taxation. Enwereji (2016) suggests that administrators should evaluate taxpayer psychology, adopt effective communication measures, be involved with escalation procedures around collections, detect early warning signals and deal effectively with difficult debtors. These tasks will enable the collection agency to monitor the level of customer goodwill towards recurrent property taxation. The management of defaulting payers, both for property rates and for the payment of services, is a critical component of municipal financial health. Too often non-payers are aware of the penalties but continue to default regardless. This is compounded by politicians who shy away from implementing punitive enforcement and penalties for the non-payment of property taxes (De Cesare, 2012). Ferraris *et al* (2013) describe the unwillingness to enforce action on defaulting taxpayers as tantamount to political interference. A lack of political will results in low revenue yields, vertical and horizontal inequalities and economic inefficacies (Kelly, 1999).

Bird (2004), proposes that administrations, especially revenue administrations, adopt practices to integrate technology and analytics to improve administrative efficacies and their effectiveness. It is recommended that tax administrators and revenue managers use appropriate management systems to support the tax administration processes (Bird, 2004; Fjeldstad & Heggstad, 2012). The functionality of administrative systems effectively improves local government's institutional capacities by identifying taxpayers and the users of utility services, assessing their payment obligations, issuing timeous accounts, managing collections and, where necessary, instituting proper enforcement. Information and communication technology (hereafter "ICT") reforms and technological advancement ought to make the process of paying recurrent property taxes and utilities far simpler, faster and easier to understand (Freire & Garzón, 2014).

Technology provides a range of options and alternatives to facilitate access and improve the reliability of the land data. The framework for capturing, storing, checking and displaying data related to positions on the earth's surface is Geographic Information Systems, or simply GIS. GIS technology applies geographic science to maps, data, analysis and applications. GIS can integrate many types of data, provided these datasets have locational identifiers. This technology assists individuals and organisations towards resolving problems and making informed decisions, often revealing deeper

insights data through patterns and relationships. GIS is summed up as the ‘science of where’. GIS professionals are responsible for managing property data especially spatial data and, through sharing this data, contributing to solving diverse and complex problems. At the International Federation of Surveyors (hereafter “FIG”) 2023 Conference, Bayer and Meggiolaro stated that access to land data is crucial for land governance, supporting land administration systems and informed decision-making. Using technology to rationalise cadastral procedures and to make land data more accessible will improve efficacies in local administration and the collection of own source revenues for municipalities.

A challenge for revenue administrations in developing countries is the perpetuation of manual paper-based recording systems. Revenue leakages are common and occur due to a combination of non-punctual collections, corruption and deliberate under-collection. Difficulties emerge in estimating whether the coverage is complete, whether there are missing properties in valuation rolls or municipal property registers, how many registered taxpayers are inactive or dead, and how much tax is being evaded through non-payments, corruption and ineffective billing systems or a combination of these factors. Digital transformation is key to assisting growing cities to migrate from inefficient paper-based to modern web-enabled platforms.

McCluskey *et al* (2022) identify three ways that technology can assist the efficiency of tax collection:

- Self-service by promoting voluntary compliance and convenience through easy-to-use payment platforms;
- Deploying high performance analytics through GIS systems to uncover, track, analyse and address non-compliance quickly and effectively; and
- Leveraging data to research and improve compliance measures and better customise taxpayer services.

Upgrading ICT infrastructure and systems for revenue administration reduces costs for taxpayers by making it easier and convenient to make (Bird, 2004). Bahl *et al* (2017) propose that spatial information or the use of an integrated GIS provides a powerful instrument towards improving property tax administration, as well as the overall financial management in local government. They furthermore caution that ICT solutions should be fit-for-purpose and relevant to the appropriate local context. Simpler, more robust systems may be more appropriate in the short to medium term. As stated by Awasthi (2020: 2):

“Technology has made tax administration easier and more effective. Developing country governments have been improving their quality of governance and considering introducing or enhancing property tax revenue collection to diversify their tax and fiscal revenues.”

The key components of administrative considerations for the property tax are the ITC infrastructure and the associated resource capacity for operating these systems. While technological solutions may improve recurrent tax efficacies, political will and taxpayers’ perception towards recurrent property tax remain hugely influential to the revenues collected. Ratepayer’s perceptions

are improved with good property data, transparent processes and, if possible, public access to the data. This requires data interoperability. Bahl *et al* (2008) caution that the second-best approach may be the best strategy for developing countries, in that proposed reforms may be too costly to be undertaken as a single process and as such a phased approach should be adopted. Grover *et al* (2017) state that perceptions of the reliability of property tax depends on the quality of the data used, the market prices or sales evidence, and the attributes or characteristics of properties recorded in the property inventories. While previous authors have written extensively about data accessibility and ITC infrastructure, the prerequisite for a common data structure that enables data interoperability is largely excluded from the commentary.

The next section of the literature thesis considers the datasets required to assemble and maintain taxation coverage and, secondly, the datasets required for determination of property values for recurrent property taxation.

2.7 DATASETS REQUIRED FOR COVERAGE AND PROPERTY RATES

The preparation of valuation rolls typically involves the valuation of large numbers of property records on a given date (the date of valuation) using a defined set of property attribute data and various statistical methods. Smaller rural municipalities with large tracts of traditionally held land are the exception and are addressed as a specific challenge. For the purposes of this thesis, property data is addressed under the broadly defined headings: Land title or deeds, sales information and cadastre including spatial data.

Land is defined as a demarcated piece of the earth's surface, and these distinct areas are known as plots or land parcels (Almy, 2014). Property rights and boundaries date back to the initial claims by a tribe, family or an individual having rights to a specific geographic area. Hunting, fishing and grazing rights are generally broadly defined with cultivation and residential rights more discretely delineated to a specific geographic area. According to Larson (1991), property boundaries are linked to the development of property rights or real rights to secure control of the resources within a defined area.

Each unique parcel of land has certain characteristics. These characteristics are referred to as property attributes or objects. Property valuations, whether for property rates or other purposes, require details of these property attributes or characteristics. Attribute datasets may vary according to the valuation instruction and the appraisal methodology, or technique selected by the valuer. Property attributes include but are not limited to the description of the property, ownership or occupational details and nature of tenure (registered or unregistered), the location of the property, extent of the property, the extent of the improvements affixed to the property, the condition of such improvements, specific features such as the presence of garages, swimming pools, recent sales data of similar properties, the presence of any servitudes or any other registered rights and any other value forming attributes selected by the valuer. Rental and sales information are also included as attributes underpinning value-based taxation (Tang *et al*, 2011). The property registers are the

inventories or databases recording these property attributes used in single valuation or mass appraisal processes (Plimmer & McCluskey, 2016).

2.7.1 Property ownership and sales data

Ownership is defined by boundaries on the surface of the land. The ownership of land also includes all space above and below the land parcel, as well as the improvements. Improvements are defined as structures or buildings affixed to the land. Sheehan and Small (2002) define property rights as the conferral of management power, the ability to receive benefits from the property and the ability to sell or alienate the interest in the property. Rights to land should be adequately defined, recorded and documented. Authors generally agree that some kind of land registration system is necessary to develop a market-based economy, since land is a fundamental resource for all countries (Larson, 1991). This research differentiates between land registration and land title, as both confer property rights. Many countries have a title system but not a deeds system. From a legal perspective, there is a distinction between deeds registration, where the documents filed in the registry are the evidence of title, and registration of title, in which the register itself is the primary evidence.

Simpson (1976) defines land registration as a public system that records the rights to a parcel of land to a particular person through an institution or process provided by government, usually under a statute. Land registration may be integrated with or independent of the cadastre. In their World Bank study on property valuation, taxation for fiscal sustainability and improved local governance, Tang *et al* (2011) write that a good-quality land registration system is indispensable for supporting property appraisal in developed countries. Yet many developing countries are grappling with formal land registration as an appropriate solution to accommodate local needs, especially for traditional land holdings.

In 2014, FIG identified four legal principles required for land registration (FIG, 2014):

- The booking principle,
- The consent principle,
- The principle of publicity, and
- The principle of speciality.

The booking principle implies that the real rights in a property may not be legally affected prior to registration. Land registration is a process of official recording of rights in land through deeds or as title on properties. This infers an official record (land register) of rights on land or of deeds concerning changes in the legal situation of defined units of land. As a property is bought and sold, ownership moves from the seller to the purchaser triggering the new registered ownership. This is referred to as the consent principle and implies that the owner must provide consent for any changes to be affected to the ownership of the property. The transaction amount is recorded as sales data. The acquisitions of reliable data on market transactions are key to accurate valuations and the success of any property rates base.

Grover *et al* (2015) state that value-based property taxation also requires the valuer to have good information about the market prices generated through property transactions. Bahl *et al* (2008) note that market-assisted information could be an acceptable substitute for actual transaction data. This is especially relevant in environments with immature or informal (off-register) market environments. Bahl *et al* (2008: 8) reinforce the requirements for good sales evidence by stating that:

“The principal administrative impediment to the heavier use of the property tax in developing and transitional countries is the challenge of determining market values for land and structures. The underlying problem is the absence of accurate sales data on property transactions.”

The principle of publicity is understood as ownership and, by implication, sales data being available for public inspection. In Belgium, France and the Netherlands any person may inspect property registration records with the complete sales histories of the respective properties. In Germany, this opportunity is limited to those with a legally recognised interest. In England, the privacy of the ownership register was reformed by the Land Registration Act, 1988 after a lengthy debate. The relevant legislation was ultimately brought into effect in 1991 whereby details of property registration data are now publicly accessible. The last principle, the principle of speciality means that both the owner (the subject) and the property (the object), must be unambiguously identified. Especially this principle has specific relevance for this thesis as it enables data interoperability, a fundamental prerequisite for the application of the property registers to other uses beyond recurrent property taxation.

Kara *et al* (2018) provide details of the various datasets contributing to valuation databases across several countries, a sample of which are recorded as follows: In Cyprus, all property characteristics and estimated values are open to the public, with sales data and GIS-based analyses available to licenced valuers through a dedicated web portal. Only authorised users, including authorised valuers and property agents may access valuation information in Croatia. In Slovenia all sales data, property market reports, property data and property values are accessible to all citizens through an online portal. In Denmark, the Danish Ministry of Taxation (SKAT) is responsible for collecting taxes and duties in connection with real estate. SKAT's detailed records enable Danish property owners to access their tax records through a self-service website while sales statistics are available in the national valuation registration (SVUR) database. This database updates and publishes sales statistics every six months. In the United Kingdom there are separate portals for non-domestic and domestic property information through the Valuation Office Agency. Sales information and statistics are published through Price Paid Data on the Valuation Office Agency's website.

In the Netherlands, the public *Wet Waardering Onroerende Zaken*, 'WOZ' value may be accessed through an online portal. The assessed values of residential properties together with other property attribute data such as the construction year, property function/type and building floor size are available. These property attributes may be viewed in combination with data from the base register of buildings depicted through maps or aerial photographs. The superior level of governance, transparency and detail provided in the Netherlands' public property data model prompted further analysis and comparative research. A detailed comparable case study between the Netherlands and

South Africa is contained in Chapter 6 of this thesis. Kara *et al* (2018) conclude that the dissemination of property market information to the public is of vital importance for market transparency, as well as fair and equitable taxation. This finding further emphasises the principle of publicity.

In summary, property, whether included in a title or deeds system, has certain attributes (objects). The principle of speciality is fundamental towards the achievement of coverage and requires that both the owner and the property be unambiguously identified. The next property attribute is referred to as the cadastre, or the graphic representation of property. The cadastre enables ownership or tenure rights to be represented in the property databases.

2.7.2 The cadastre

Terminology and concepts pertaining to the cadastre, cadastral systems, land information or administration systems run concurrently and overlap to a larger or lesser degree. There are many formats of cadastre. A cadastre usually includes a geometric description of land parcels linked to other records describing the nature of the interests, and ownership or control of those interests, and often the value of the parcel and its improvements (International Federation of Surveyors, 2020). Properties are systematically defined by means of their separate designation, their cadastre³. Boundaries are defined according to a physical demarcation or by a mathematical formula, based on a co-ordinate system. Zevenbergen *et al* (2009) define cadastral information as:

“Cadastral information combines geometric and administrative data related to land, including data on ownership, use and value of the land. The cadastral map is a geometric description of parcels, determined by the area to which the same property right applies.”

A cadastre ensures that property rights are recognised through accurately defined boundaries connected to registered plans that protect the rights of the property owner. A cadastre established for valuation and property rates is referred to as a fiscal cadastre. A cadastre is also required for legal purposes such as conveyancing, as well as land use management where land use planning and land administration enable sustainable development and environmental protection (Enemark *et al*, 2014). Cadastral systems provide the nexus between the identification of land parcels, the registration of land rights, the valuation and taxation of land and property, and the present and possible future land use (Enemark, 2005). These authors describe cadastre as linking the land use and the land user with the land markets, physical planning and property taxation.

³ The term ‘cadastre’ originated through a decision by Napoleon 1 regarding the initial form of land tax, in the early 1800s. The derivation of the word ‘cadastre’ is ascribed to the Latin ‘*capitastrum*’ or the register of capita, literally ‘heads’ or taxable land units. Mapping or spatial depiction enables the identification of both the location and the boundaries of each unit (Simpson, 1976). Simpson (1976) writes that Napoleon I expressed that a good cadastre would be the greatest complement of his civil law code to achieve systematic order in real estate property. He required that exact plans be developed to define and record the boundaries of individual land property limits.

The cadastre not only focuses on property registration, but also provides both private and public sector stakeholders with information for land development, urban planning, land management and environment monitoring (Williamson & Ting, 2001). Kaufmann and Steudler (1998) use the analogy of an accounting system to explain how sustainable property development is supported by land information. Like an accounting system of a business, the cadastre must follow certain rules and principles. The cadastre should provide reliable and systematic information on land issues, primarily in support of land markets or land taxation. Kaufman likens changes to property ownership to acquiring a new client or project in the accounting system.

The efficient identification of a unique property and its boundaries on a cadastral map assists the process of securing land title, assessments for recurrent property taxation, identifying land use, providing ownership details and restrictions amongst other property-based processes. The inclusion of the unique property identifier is critical. This identifier may include an alpha-numeric code that describes each property methodically in a systematically arranged public inventory (Kalantari *et al*, 2008).

UN-Habitat (2016) notes that the success of a cadastral system is not dependent upon its legal or level of technological sophistication but whether the legal rights to tenure are adequately protected. Access, speed, cost and simplicity are all factors contributing to the effectiveness of a cadastral or land information system. The 2016 UN-Habitat report suggests that economic development in the developing world is dependent on the establishment of a system of property rights or the formalisation of ownership or tenure in land and associated institutions. However, traditional and customary rules for land and land rights predate the development of such systems. Enemark *et al* (2014) emphasise that the traditional cadastre should be incorporated into land administration systems. Accommodating traditional tenure with the identification of the geographic location of the property is an important consideration in the development of appropriate land administration models in some countries. Formal legal documentation regarding ownership and/or occupation or other tenure rights may lag the initial spatial identification process. If freehold ownership is the preferred ownership paradigm, various iterations towards such certification may evolve before this status is achieved.

Writers cited in the following paragraphs concur that the establishment of a cadastre is to the advantage of the respective country. Williamson (1997) identifies the potential for land information and cadastral systems to support effective land markets, increased agricultural productivity, sustainable economic development, political stability and social justice. The justification for cadastral reform is towards justice and political stability, reduced costs for land registration in areas where people cannot afford the current costs and the extension of group titles in areas with customary tenure or areas where a low-cost approach is appropriate. The development of accurate cadastre or land information systems avoids land disputes and develops property markets with access to credit. In their study of the renovation of cadastral sheets for urbanisation in Turkey, Yalcin *et al* (2013) indicate that secure tenure increases access to credit with lower interest rates and results in escalating property values. Linked to this is the requirement for the development of methods of

market valuation and the training of property appraisers, especially in countries with developing market economies.

Conversely there are risks if the cadastre is inadequately assembled or maintained. These impact the performance of property rates as well as other aspects of land governance. In respect of India, Mathur (2009) states that the absence of any cadastre or even a formal count of properties is one of the major handicaps in reaching a more accurate estimate of the property tax potential in this country. As the first determinant of revenue performance is the percentage of properties on the municipal tax register, the 38 percent coverage from Delhi, India, is inadequate coverage for recurrent property taxation.

In his study of property taxation in Ghana, Boamah (2013) concludes that a high coverage ratio is a prerequisite for successful mobilisation of property rates. His research indicated that many properties have not ever been valued or re-valued over a long period, that local authorities are unwilling or lack the capacity to mobilise property rates and that the taxpayers are reluctant to pay recurrent property taxation. Most cities and towns in Ghana are not covered by a comprehensive cadastre. As taxable properties are not adequately described in the Ghanaian cadastre, property owners liable for the payment of property rates may be difficult to identify.

In Latin America, the adoption of the use of a multi-purpose cadastre is considered a key land policy tool. Erba and Piumetto (2016) write that information technology (IT) advances, the availability of open-source GIS, together with increasingly affordable commercial applications and the availability of tools for data collection pave the way for modernizing the cadastre. The Latin American model is based upon a “partnership of stakeholders committed to generating extensive, precise, detailed and up-to-date information about a city” (Erba & Piumetto, 2016: 31). Erba and Piumetto (2016) also propose that the assembly and maintenance of a multi-purpose cadastre advances valuation roll accuracy in Latin America. Such multi-purpose cadastral systems include building land observatories, extensive contributing partnerships, as well as assessment models with both econometric as well as geostatistical models.

The initial assembly of a cadastre may be rapid; however, the utility of this information diminishes quickly if records are not updated to reflect changes to property attributes. Many entities, inside and outside of governments, spend considerable amounts of money assembling their land information systems or registers of properties and then neglect to maintain these records. As the coverage for property rates is reliant on the currency of these property registers, the updating is an important consideration for maintaining equitable rating for property taxation. Enemark *et al* (2014) emphasise that the success of the cadastral system is not dependent only on its legal or technical sophistication, but whether the cadastre is kept up to date.

In summary various authors provide different definitions of a cadastre, and cadastral systems exist in many configurations. These alternatives should be fit-for-purpose for their intended application. Property parcels must be uniquely identified, and property registers must be both assembled and maintained to extend coverage for equitable recurrent property taxation. Core cadastre or land information is an important infrastructure to facilitate land management policies in

both developed and developing countries (International Federation of Surveyors, 1999). The next section of the literature review addresses what previous authors have written about land information, land management and land administration systems.

2.8 POTENTIAL EXTENDED APPLICATIONS OF THE PROPERTY REGISTER TOWARDS LAND INFORMATION, LAND MANAGEMENT AND LAND ADMINISTRATION SYSTEMS

A useful differentiation between administration systems and land management are that land administration systems provide the infrastructure for implementing land policies, while land management strategies support sustainable development. The importance of quality data and good data governance or administration cannot be underestimated. The cadastre or cadastral systems are the core technical engine controlling and managing the property data across land administration systems.

The United Nations Economic Commission for Europe (hereafter “UNECE”) (1996) defines land administration systems as providing the social, legal, economic and technical framework within which land managers and administrators operate. Land administration is defined as the processes of determining, recording and disseminating information about the tenure, value and use of land when implementing land management policies.

Dale and McLaughlin (2000: 10) define land administration as:

“The process of regulating land and property development, the use and conservation of land, gathering of revenues from land through sales, leasing and taxation, and resolving of conflicts concerning the ownership and use of the land.”

Williamson *et al* (2010) describe the four functions of a land administration system as land tenure that describes various forms of access to land and land rights; land value or the assessment of the value of land for taxation purposes, in this instance recurrent property taxation; land use or the regulations about how property should be used at the various levels of government including the enforcement of these regulations and lastly land development or how new infrastructure will be built. These provide a useful overview of the functions of a land administration system – see Table 2.2.

Table 2.2: Functions of a land administration system

Land tenure	Land value	Land use	Land development
• Securing access to land • Determining plot boundaries • Allocating new plots or altering existing plot boundaries • Transferring property or use • Managing disputes regarding land rights and plot boundaries	• Assessing the value of land and properties • Calculating and gathering revenue through taxation of property • Managing disputes related to land valuation and taxation	• Adopting planning policies and land use regulations • Enforcement of land use regulations • Managing disputes related to land use.	• Building new physical infrastructure and utilities • Implementing construction planning • Expropriation of land • Changing land use through planning permissions and building permits

Source: (Williamson *et al*, 2010).

Land administration systems include a core cadastre, typically including land registration, cadastral surveying, cadastral mapping and related indices. These may also be referred to as multi-purpose cadastre and/or parcel-based land information systems. Land administration systems may also include or facilitate land use planning and valuation/land taxation systems. The cadastre provides the inventory for property information for both land administration and land management systems. Land administration does not usually include the actual land use planning nor land valuation processes.

Land management needs reliable information about the existing land and its resources (Kaufmann & Steudler, 1998). This author explains that land management supports the operation of land markets, the use and creation of capital, land use planning, land taxation systems, urban infrastructure and natural resource management through the provision of spatial frameworks providing topography, land tenure, value and land use. Historically most land administration systems, and particularly their core cadastres, have supported the operation of land markets (Kaufmann & Steudler, 1998). However, these systems have evolved into a broader infrastructure supporting economic development, environmental management, and social stability in both developed and developing countries.

The literature indicates that what works in one country is not necessarily the best fit for others. This is especially relevant in developing countries where there is a wide range of traditional or customary tenure relationships. Land tenure is how people organise themselves with respect to their rights and obligations to land (Dale & McLaughlin, 2000; Williamson *et al*, 2010). Land as a resource is even more imperative for agrarian subsistence economies (Burns *et al*, 2007; de Soto, 2000). The relationship between people and land may be spiritual or metaphysical and material (Sheehan & Small, 2002). Land administration systems require a clear understanding of the changing humankind-land relationships, land administration policies, land administration systems, spatial business systems and infrastructure (Williamson & Ting, 2001) and should be reflective of the cultural and social values of the societies of the prevailing country in which they operate (Steudler, *et al*, 2004).

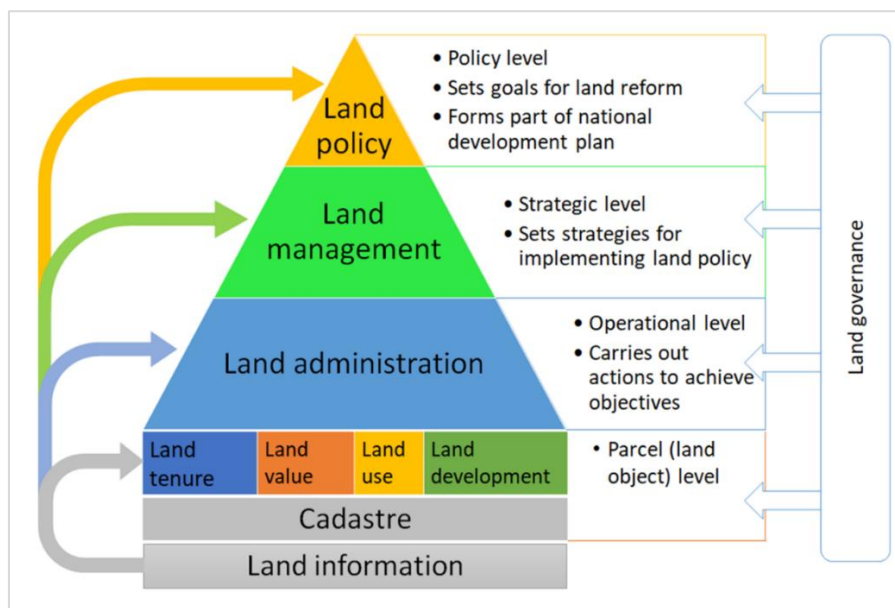
Various frameworks and methodologies have been developed to evaluate, characterise, and assess different land administration systems across the world (Mitchell, Clarke & Baxter, 2008). The evaluation frameworks include but may not be limited to political and legal aspects, the efficiency of institutions, the status of use of core land administration functions, the impact of external factors, and existing monitoring mechanisms. According to Burns *et al* (2007), often these frameworks are unable to properly address local problems

and situations of progressive land administration systems in developing countries. Learning from progressive land administration systems is an urgently needed task to craft a working and individualised humankind to land relationship in Africa (Lemmen *et al*, 2015). Standardised methods or a quality framework for improving, evaluating or comparing land administration around the world is still lacking (Ali *et al*, 2010).

Good land data administration supports individuals, communities, businesses and government agencies and enables more efficient government services, most of which are linked to a property or geographic area (Williamson, *et al*, 2010). Policies about land administration systems, property registers and property data management should reside within the principles of responsible land governance and the overall framework of national land policies.

Williamson *et al* (2010) propose a land management paradigm whereby land management is broader than land administration. Land management covers all activities associated with the management of land and natural resources that are required to fulfil political objectives and achieve sustainable development. It is about land policies, land rights, property, economics, land use control, regulation, monitoring, implementation and development. Hull *et al* (2020) advance a model for land governance that places land policy separately and superior to land management. They argue that land policy sets government's aims and objectives for addressing land issues. In the land governance model shown in Figure 2.1, land information informed by the cadastre supports the four functions of land administration, namely land tenure, land value, land use and land development.

Figure 2.1: Land Governance Model



Source: (Hull *et al*, 2020).

Hull *et al* (2020) further emphasise that land administration is distinct from a land administration system. Using the analogy of a motor vehicle, they liken the whole system to being made up of a multiple of parts that could not perform individually. Land governance is a sum of many parts with important roles for both land information processes and the operational component of land governance implemented in accordance with national land policy, plans, goals and strategies (Hull, *et al*, 2020).

They note that there are seldom adequate institutional arrangements to integrate land administration. Land administration includes property ownership, processes for alienation and transfer, valuation, development and utilisation. For example, land ownership may be managed by a ministry or agency responsible for legal affairs (e.g. Ministry of Justice), while another ministry is responsible for valuations and the land use planning (e.g. Ministry of Land or Ministry of Finance) and the development function is delegated to yet another ministry (e.g. Ministry of Physical Planning or the Ministry responsible for Agriculture and Forestry). An example of a mature land information system operating in a developed country is New Zealand's Land Information System (LINZ).

2.8.1 The land information and land administration systems in a developed country- New Zealand's LINZ system

New Zealand provides a successful land information system in a developed country. This is the New Zealand Land Information System (hereafter "LINZ")⁴ - the national database provides both an authoritative record of the property boundaries through a well-defined, reliable and accurate property geodatabase, as well as land title information. New Zealand has clear institutional jurisdictions for the administration of property data, both land titles and the cadastre. The relevance for the inclusion of this country's experience is supportive towards the formulation of reform recommendations for the South African model.

The Registrar General of Land is a statutory officer responsible for regulation of the title system, including the remaining land in the deeds registration system. The register of land is publicly searchable. LINZ is responsible for providing and maintaining the certainty of private property ownership. This is achieved by recording survey and land title information and by extending this information to support economic activities. The Registrar General of Land is also responsible for developing standards, setting the quality assurance programme for the land rights registration system, as well as extending technical policy support on land registration issues.

The Surveyor General is a statutory officer responsible for regulation of the cadastral system, the survey control system and associated databases. The Surveyor General is also responsible for standards for both the cadastral and geodetic survey systems. This office monitors and audits compliance with these standards. There is a national survey system to ensure that land boundaries and the reliability of locational information is accurate. Electoral boundaries are also set by the Surveyor General. To provide continuity between the various government agencies and offices, the

⁴ <https://www.linz.govt.nz/>.

Surveyor General is the ex-officio chair of the New Zealand Geographic Board (Ngā Pou Taunaha o Aotearoa).

The New Zealand LINZ system data is editable for authorised users. Property professionals may access the system's meta data in its raw, tabular form. There are Automated Programmatic Interfaces (hereafter "API's") to enable professional practitioners to update selected datasets. Nearly all Govt.nz content is licensed under Creative Commons. The content from the Govt.nz website is owned by the Crown with the contents attributed and guaranteed by the author. Data users may provide feedback on the specific data layers to the custodians of the specific datasets. The practice of Creative Commons in New Zealand endorses the principle that the more users a database has, the greater the opportunity for data correction and improved data integrity.

The databases in New Zealand's national Property Data Management Framework (PDMF) are considered both reliable and authoritative with the data custodians clearly identified. The New Zealand Government appoints an outsourced service provider, Quotable Value, to determine the valuations of rating or taxable units for the purposes of recurrent property tax or rates. A rating or taxable unit is defined in Section 2.4, Rating Valuation Rules, 2008. The key distinctions of a rating unit are its ownership and common use. The valuers use the national combined datasets or property registers for preparing and maintaining the valuation rolls for the respective municipalities. The valuation roll contains all the property records with details of the capital, land and improvement values. These valuation rolls form the report or database of all rating units in a council's or territorial authority's area. Revaluations of all properties are conducted every three years.

Quotable Value uses the valuation roll management software extended by LINZ. This promotes continuity and the consolidation of both the property data and the assessments in a single infrastructure. The valuation methodology includes market research for each localised property environment. Targeted physical inspections of key property types as well as areas of high land use changes are included in periodic re-valuations. Quotable Value's terms of reference ensures that the valuation data is delivered timeously, and stringent internal data accuracy checks are applied. Following the finalisation of the rating assessments, the Office of the Valuer General (OVG) provides an independent audit function on the accuracy of the valuations against prevailing market evidence.

The preceding paragraphs provide a high-level insight into the land information system, LINZ, implemented in a developed country, New Zealand. The key takeaways are the unambiguous policy, clearly defined institutional responsibilities and well-defined operations. The related work processes for title registration, cadastral and geodetic surveys are supported by appropriate and enforceable data standards. The oversight is extended to the review of the accuracy and completeness of the valuation rolls. The independence of the monitoring agency by the Office of the Valuer General is also significant. It is also noteworthy that the assembly and updating of the property register or coverage used by the valuer is informed by the data supplied by the property inventories or registers provided by LINZ, that is the property information management, and the valuation functions are separate.

Enemark (2016) acknowledges that traditional, western-style land administration systems are costly and time consuming, demanding high levels of skills and capacity to maintain, as well as political support and recognition. Land administration is essentially about people, about the relationships between people, places and rights and the policies, institutions and legal regulations that govern these relationships. This finding motivates for the deployment of appropriate land management tools for planning, development and sustainable land management. The next section of this thesis analyses what previous writers have written about land administration systems in developing countries.

2.8.2 Land administration systems in developing countries

2.8.2.1 Overview of land administration in developing countries

Land administration infrastructure permits a complex range of rights, restrictions and responsibilities in land to be identified, mapped and managed. While land use policies worldwide are concerned with forest management, coastal zone management, environmental sustainability and managing the urban environment, less attention is given to the infrastructure that facilitates the use of these policies and programmes. The land administration infrastructure is provided by the cadastral and land registration activities in many countries. Often these land administration infrastructures are out of date and inadequate to serve an integrated role. The operational response is the development of purpose-built isolated land information “silos”. These are jealously guarded, unable to be integrated nor combined, and are typically not shared (Mooney & Grant, 1997 as quoted by Williamson, 2001). Such separately purpose-built spatial or map-based infrastructure is prevalent in developing countries. Examples are found in forestry, planning, agriculture, land reform, environmental management, city administration, valuation and land tax departments or ministries. FIG’s Bathurst Declaration on Land Administration for Sustainable Development includes three key recommendations:

- Providing effective legal security of tenure to land;
- Promoting land administration reforms for sustainable development, and
- Investing in the necessary land administration infrastructure as well as the dissemination of land information.

While difficult to achieve, the need for a common land administration infrastructure and particularly the spatial data infrastructure is generally accepted in both rural (Grant, 1999; Williamson, 2001) and urban areas (Bishop *et al*, 2000) to implement broad or integrated shared land policies (Mooney & Grant, 1997 as quoted by Williamson, 2001). There has been considerable attention given to land administration principles and what constitutes “best practice”.

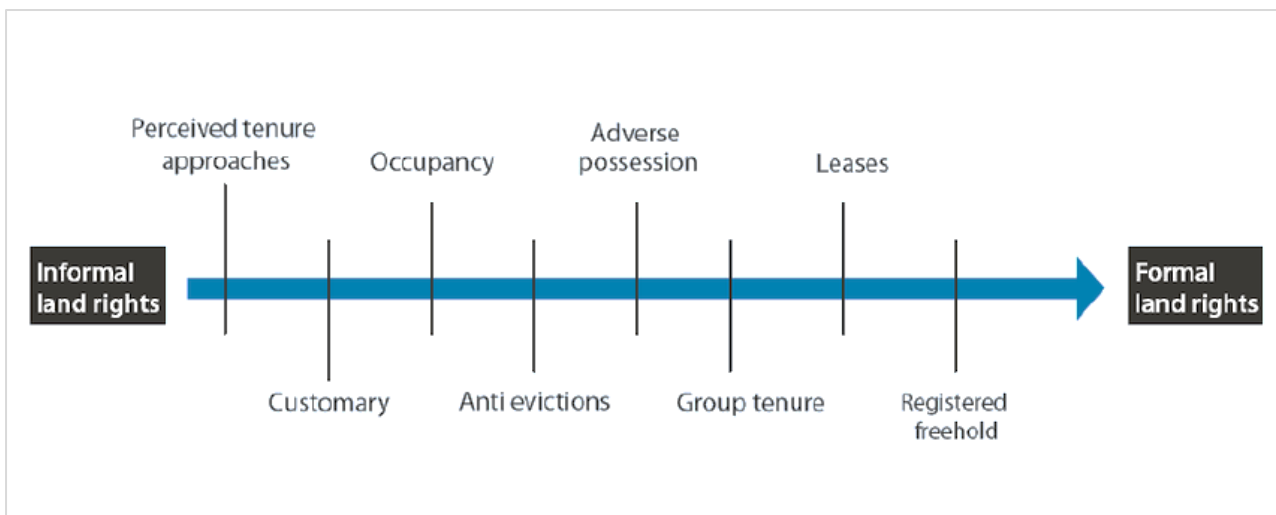
The approach for building land administration systems in less developed countries should be flexible and focused on citizens’ needs. Prioritisation should be extended to providing security of tenure and control of land use, rather than focusing on top-end technical solutions and highly accurate surveys. The UN-Habitat (2008) identified that legal frameworks used in developed

countries may not serve countries where tenures are predominantly social rather than legal. Governments in developing countries, are, irrespective of the situation in the relevant country, exhibiting an increasing tendency to incorporate some form of recognition of customary land tenure in their land legislation. Only about 10 percent of the land in sub-Saharan Africa is registered (World Bank, 2014). The rest of the land holdings are undocumented and held under various forms of customary tenure. Typically, these land holdings are managed by traditional authorities outside the formal land registration frameworks. This reality serves to motivate a more inclusive approach to land administration systems.

2.8.2.2 Continuum of Land Rights

The range of possible forms of tenure is conceptualised as a continuum, the Continuum of Land Rights. Each continuum provides different sets of rights and degrees of security and responsibility and enables different degrees of enforcement (UN-Habitat, 2008). The continuum of land rights indicates that each iteration in the continuum may be formalised over time and through alternate mechanisms. The concept “Continuum of Continuums” may have various dimensions. The spatial unit may not be limited to a land parcel but may vary according to where the rights and social relationships apply, for example a point cadastre rather than a parcel boundary, or illustrate that various households have communal access to a grazing area. UN-Habitat (2008) refers to a continuum of land recording and credit accessibility, ranging from informal land through to freehold title. This illustration of the continuum of land rights is illustrated in Figure 2.2.

Figure 2.1: Illustration of continuum of land rights



Source: (UN-Habitat, 2008).

There are examples of developing countries where the integration of communal and private land rights has been successfully initiated. Kenya's Community Land Act, 2016 provides security for communally held rural land. Land rights may be collectively registered to a defined community to enable communal tenure. Communities can hold, use and transact lands under their own or customary norms. These properties remain un-surveyed and untitled.

2.8.2.3 Fit-for-purpose land administration

The Joint FIG/World Bank (2014) publication on fit-for-purpose land administration notes that African countries, post-independence, have neglected to invest in land administration systems (Enemark *et al*, 2014). This is evidenced by ineffective laws and processes supporting land administration systems. The result is high institutional costs, incomplete land registers and static cadastral maps. Land transactions are lengthy with backlogs susceptible to motivation fees. There are concerns for the poor who may be vulnerable to slumlords or threatened by evictions. Another reality is the gender bias in which land rights of women continue to be prejudiced. The initial step towards land administration reforms advocated by the FIG/World Bank (2014) is that legitimate land holdings in customary areas be recognised in the formal land administration systems. These rights should be identified and recorded as a first step. Then, should it be deemed appropriate and necessary, the option of an eventual upgrade to full legal status should be extended to the occupiers. This practical approach enforces the concept of a land administration toolbox for reforming or re-engineering land administration systems based on fit-for-purpose components (Enemark *et al*, 2014).

The FIG-World Bank Declaration of Fit-For-Purpose Land Administration proposes a cost effective and sustainable system for land administration - that is for the assembly and maintenance of land information/administration systems for developing countries that identifies the way in which land is occupied and used and recognises land rights towards secure tenure. The UN-Habitat Report (2016) also recommends the fit-for-purpose option as an accelerator and enabler for implementing the sustainable development agenda at a global level. Such land administration systems are more suitable for developing countries promoting the establishment of sustainable land administration systems (Zein, 2016). Fit-for-purpose land administration systems are implemented in various countries, including Ethiopia, Ghana, Indonesia, Namibia and Rwanda. These systems offer land administration professionals and governments with opportunities to make significant improvements in land management, including land tenure and cadastral systems (Enemark *et al*, 2014).

Enemark *et al* (2014) propose using general rather than fixed boundaries, physical boundaries as opposed to formal surveys, aerial or satellite imagery rather than physical field surveys, emphasising the accuracy of the land administration system as aligned to its purpose with the option to improve and evolve the system as time progresses. These principles are summarised in Table 2.3.

Table 2.1: Principles of property registers

No	Item	Details
1	General boundaries rather than fixed boundaries	It is proposed that using general boundaries to delineate land areas is sufficient for most land administration purposes, especially in rural and semi-urban areas. In this context, the term “general boundary” means one whose position has not been precisely determined, although usually such delineation relates to physical features on the ground.

2	The use of physical boundaries	The use of physical boundaries for the purposes of establishing coverage or complete property registers as opposed to formal surveys.
3	Aerial imageries rather than field surveys	The use of high-resolution satellite/ aerial imagery is sufficient for most land administration purposes. This approach is significantly more cost effective than the resource-heavy physical field surveys. The use of imagery including using Unmanned Aerial Vehicles (UAV's) is also a more cost-effective option.
4	Accuracy relates to the purpose	Accuracy relates to the purpose rather than technical standards. Accuracy of the land information should be understood as a relative issue commensurate with the use of this information. For the purposes of valuation, the accuracy of the boundaries should be adequate so as not to detract from the integrity of the assessment of the value.
5	Opportunities for updating, upgrading and improvement	Building the spatial framework should be perceived as opportunities for ongoing updating, upgrading and incremental improvement whenever relevant or necessary for fulfilling the country's land policy aims and objectives. Of primary importance for the purposes of this study is the emphasis on a cost effective, up-to-date spatial framework with the associated mapping to operate.

Source: Adapted from Enemark et al (2014)

The use of physical boundaries is also supported by Byamugisha (2014). This author states that where occupied land has well established, community accepted, physical boundaries (fences, hedges, walls and ditches) the physical demarcation of the boundaries provides sufficient evidence of the occupation and associated rights to communal lands with customary tenure, and these may be included in the formal system. This solution is achieved by demarcating the outer boundaries and, concurrently, retaining the community institutions that allocate and manage individual and household plots. These records or certifications of occupation or use may be upgraded to more formal tenure as required.

2.8.2.4 Use of technology in land administration

Technology is more efficient and reduces the dependency on costly professional survey resources. The fit-for-purpose approach using aerial/satellite imagery provides the spatial framework as well as the general topography of land use, buildings and infrastructure. Property attributes are fundamental for the planning and land development functions included in the various land administration systems. McLaren (2011) writes of using crowdsourcing techniques for acquiring details about land occupation and the respective rights to resources from local communities. Smart mobile phones have satellite positioning functionality as well as digital cameras. These devices provide citizens with the necessary tools to collect data about their respective properties. This technology also enables community members to access and participate in the processes involved in land administration. An example of a successful project using technology is the Mobile

Applications to Secure Tenure (MAST) programme that was initiated in Ghana in 2011 (McLaren, 2011). Through this project the United States Agency for International Development (USAID) collaborated with the Ministry of Lands to issue certificates of customary rights of occupancy. The Mobile Applications to Secure Tenure participatory mapping approach was scaled to issue certificates for 300,000 land parcels in Tanzania. The collaboration with the Government provided the necessary quality control with all Tanzania's legal and accuracy requirements for land registration being met. Mobile Applications to Secure Tenure is also deployed in Mozambique, Zambia, Liberia, Malawi and Ghana (USAID, 2021).

The Rwandan titling experience is a further example where the assembly of land data has been inclusive, involving multiple stakeholders and promoting an integrated institutional framework (Franzsen & McCluskey, 2017). The Rwandan fit-for-purpose land information reforms were implemented in response to the destruction of the country's land ownership systems through the 1994 genocide. The Land Tenure Regularisation Programme (LTRP) resulted in the registration of over 11 million land parcels, the issuance of 7 million certificates of title, as well as the establishment of the Land Administration Information System (LAIS) (Hughes, 2022). Trained facilitators engaged directly with communities to acquire data about property usages and commonly understood boundaries. High resolution orthophotos and geospatial data were used to record general and visible boundaries as narrated by community members. The Land Administration Information System is paperless, secure and fully interoperable. The technology utilises biometric data, Public Key Infrastructure⁵ and blockchain technology. Authorisations and approvals are processed using Public Key Infrastructure and secured using blockchain⁶. The application demonstrates the potential for "positive transformation in citizen-centric land administration" (Hughes, 2022: 345). The author qualifies this finding as follows:

"However, to be successful, the technology must be supported by collaboration across public and private institutions, investment in digital literacy at all levels, consistent training and user support"

In summary, land administration systems provide governments with infrastructure for securing land tenure rights, determining valuation and taxation of land, as well as planning and managing the sustainable use of land and land development. The analysis contained in this thesis is whether the municipal registers of properties could support land administration. The next section introduces spatial data as the instrument to support viewing the cadastre and spatial data infrastructure as the

⁵ Public Key Infrastructure (PKI) is a technology for digitally authenticating users and devices. PKI enables trusted parties to digitally sign documents certifying that a particular cryptographic key belongs to a particular user or device. The key can then serve as an identity for the user in digital networks. In 2015, the Government of Rwanda established a PKI infrastructure used for authentic access of information on online platforms.

⁶ Blockchain is a computer network designed to store short sequences of data, validate shared rules, and exchange economic value transparently. Blockchain technology enables the creation of an open, distributed ledger that records transactions efficiently in a verifiable, accessible, transparent, auditable and permanent manner.

enabling platform to facilitate access to and sharing spatial data across land information, management and administration systems.

2.8.2.5 Spatial data infrastructure and spatial data

Spatial enablement uses the concept of place and location to organise property information and processes (Ezigbalike & Rajabifard, 2009). Spatial data infrastructure is defined by Coleman & McLaughlin (1998: 129) as:

“the policies, technologies, standards and human resources necessary for the effective collection, management, access, delivery and utilisation of geospatial data”.

Spatial data infrastructure typically comprises core datasets such as the topography, hydrology, cadastre, administrative boundaries, geographic names and geodetic framework. In a country there is a hierarchy of spatial data infrastructure from the local to state to national levels. The use of spatial data enables decision-making through spatial referencing (Enemark *et al*, 2014; Steudler *et al*, 2008). Chan and Williamson (1999) as well as Rajabifard *et al* (2000) state that the key to the success of spatial data infrastructures is an understanding and collaboration between the various development partners, as well as the relationship between the spatial data infrastructure and the business systems that it supports. Junquera-Varela and Lucas-Mas (2024) caution that experience has demonstrated that technology poses certain challenges. They highlight that this is not merely about the process of digitizing work processes but reconceptualizing how the public sector, especially public sector revenue goes about its work and how the tax public interacts with these initiatives.

Spatial data infrastructure is a key component of land administration infrastructures (Williamson & Ting, 2001). The spatial component has enabled the integration of land administration and national mapping activities into a single governmental institution (Williamson, 1998).

Tonchovska *et al* (2012) extend the description of spatial data infrastructure to include the framework of policies, institutional arrangements, technologies, data and human resources to enable sharing and effective usage of geographic information. Spatial data is now considered a ubiquitous part of e-government and broader government ICT strategies (Ezigbalike & Rajabifard, 2009). Tonchovska *et al* (2012) identify the following principles for spatial data infrastructure:

- Data should be collected once and then kept where it will be maintained most effectively;
- Spatial data from various sources should be interoperable;
- Spatial data needed for good governance should be readily and transparently available.

Spatial data infrastructure, if effective, may be utilised across various disciplines and applications. The goal of spatial data infrastructure is to reduce the duplication of efforts and promote collaboration between stakeholders including government departments, academia and the private sector users, as well as between different spheres of governments in a country, but also to share spatial data

between countries. The challenge is ensuring that spatial data is presented according to agreed quality standards in terms of accuracy, completeness and currency. Vancauwenberghe and van Loenen (2016) explain the necessary directives including technical and non-technical specifications to achieve efficient data interoperability. Each spatial dataset, for example topographical maps, address data, and road data requires a description of the content data presented as metadata. This metadata should be accessible through discovery services or viewing applications making it possible to search for specific spatial datasets. Metadata must also include details regarding data availability, quality, custodian organisations, accessibility and sharing of spatial information (interoperability). Such metadata must be common to policies and activities across the different levels of public authority (Vancauwenberghe & van Loenen, 2016).

The relevant research question is how the sharing of the different land information datasets between the various users, both from in the public and private sectors is achieved. Interoperability is conditional upon the adoption and adherence to a common ontology or subscription to how the different property attributes are named, categorised or related to each other. Hjelmager *et al* (2008) write that the purpose of the spatial data infrastructure is to facilitate and coordinate data exchange and sharing of both spatial data and data services amongst stakeholders. As such spatial data infrastructure may be part of a wider e-government initiative. Ezigbalike and Rajabifard (2009) describe e-government services as seamless access to information to support location-specific decisions. For example, should a purchaser be interested in a parcel of land he would have access to the existing interests, extent, topography, soils, utilities demographics and climate relating to that particular property. These various datasets are part of the spatial data infrastructure.

In summary, spatial data infrastructure provides the enabling platform that links the various datasets and different users to the property information supporting land information and administration systems. The next section addresses the literature about the required data quality and standards and how these relate to the performance of recurrent property taxation.

2.9 PROPERTY TAXATION PERFORMANCE, DATA QUALITY AND STANDARDS

Authors including Dillinger and McCluskey (1991; 2017) place emphasis on the reliability of the data: both property-specific data and market or sales related data. Both the accuracy and completeness of the input datasets assembled and maintained as the registers of properties are key to property rates efficacies. Grover *et al* (2017) highlight that the credibility of property rates as reliant upon the quality of the data, both the market prices as well as the attributes or characteristics of properties, are recorded in property inventories or property registers (Bahl *et al*, 2008). This is supported by Kathman and Kuiper (2018) who emphasise that the most important aspect of successful mass appraisal is the quality of the data. They pronounce that the absence of reliable data is an impediment to creating valuation rolls.

2.9.1 Land Administration Domain Model

The spatial data infrastructure addresses both technical and non-technical issues, ranging from data standards, organisational and procedural issues and data policies to the creation and maintenance of electronic services. The primary purpose of spatial data infrastructure is providing an enabling platform for spatial data interoperability. Data interoperability specifications follow the International Standard for Standardisation (hereafter “ISO”) ISO 19131 geographic information standard⁷. With specific reference to land administration, the International Standards Organisation (ISO) adopted an international standard, ISO 19152: Geographic Information-Land Administration Domain Model (hereafter “LADM”) in 2012. ISO 19152 is an international standard that defines land administration as:

“The process of determining, recording and disseminating of information about ownership, value and use of land when implementing land management policies” (ISO, 2012).

The LADM is a data model developed by ISO under a technical committee that addressed Geographic Information/Geomatics. ISO 19152 addresses the domain of land administration and the management of information concerning the ownership, value and use of land (Kara *et al*, 2018). This is the international standard for the domain of land administration. The application of the Land Administration Domain Model addresses the semantics of the property registries, as well as the relationships between these registries. The LADM is, in effect, a conceptual data schema. Van Oosterom *et al* (2009) describe the LADM as an efficient and effective basis for the development of a cadastral system and therefore a solid foundation for the development of land administration or land information systems. The initial versions of the LADM focused on legal and administrative aspects of land administration, legal aspects of properties (rights, responsibilities and restrictions), as well as the physical or spatial characteristics of the properties. The valuation component was considered out of scope.

In 2017, the FIG Working Group resolved that a revision of the LADM was necessary for the provision of improved tools for tenure security and the coverage required for responsible land administration, UN-GGIM (2019). Collaborative global research was undertaken towards the establishment of an international valuation information model to specify standards for valuation registries maintained by public authorities (Kara *et al*, 2018) . These authors found that there is no internationally accepted data standard to define the semantics of property valuation registries, nor the links between valuation registries and the other land administration registries (eg. cadastre, land registry and building and dwelling registries) (Kara *et al*, 2018). Kara and his co-authors contend that without benchmarks or standards for the minimum data layers of the property register, the recurrent property tax base may be inaccurate. The purpose of the LADM is to specify the different base

⁷ ISO is a worldwide federation of national standards bodies, a non-government organisation representing standards bodies from more than 160 countries. ISO 19131 specifies standards for geographic data to support regulating systems, tools and environments.

registries required for property valuation activities and how these respective databases integrate or relate to one another. Their proposal extended the ISO Standard 19152:2012 LADM to include all the stages of assessment for recurrent property taxation. In chronological order these stages include the identification of all the properties in the municipal register of properties, the generation and representation of sales information and collection of property attribute data, the assessment of the market value of the properties, either through mass appraisal or single assessments and the proposed recourse through objections and appeals.

The revised LADM packages also support the development of the Spatial Data Infrastructure at various levels (Lemmen *et al*, 2021). The extended LADM conceptual model addresses both valuation data and sustainable development goals, and links these to physical or spatial objects, the land. The application of the improved LADM results in the assembly of a geospatial property register for recurrent property taxation. First and foremost, all properties are included in the valuation roll or taxation base to establish coverage. This base level dataset is referred to as the property register or inventory.

The Netherlands was at the forefront of the FIG Working Group initiative towards extending the LADM to include the valuation component. The Netherlands national data property database is managed in compliance with the Land Administration Model (LADM), ISO 191952-1:2024 Geographic Information – Land Administration Domain Model. This standard provides concepts and basic structure for the land administration/georegulation domain. It defines a general schema that permits regulatory information to be described. It also allows for the relationship to multiple parties and groups to be expressed together with a referencing structure, so that sourcing of all information systems can be maintained. This factor motivated the selection of the Netherlands for the comparative study with South Africa in Chapter 6 of this thesis.

While the LADM and standards for the datasets enabled by the spatial data infrastructure are important for establishing and maintaining taxation coverage, valuation standards pertinent to the assessments required for property rates are also necessary.

2.9.2 Valuation standards

Several regional and international associations of professional valuation bodies publish valuation standards. These standards include: the European Valuation Standards (EVS – The Blue Book) (TEGoVA, 2020), International Valuation Standards (IVSC, 2022), the International Association of Assessing Officers (IAAO) including Mass Appraisal of Real Property (IAAO, 2017) and Ratio Studies (IAAO, 2013). These valuation standards focus on the procedural aspects, as well as the accuracy of immovable property valuations. These include both measures of value and value uniformity. For example, the International Valuation Standards (IVS) outline the broad principles of the process of valuation. The Uniform Standards of Professional Appraisal Practice (USPAP, 2024) set out congressionally authorised standards for valuation professionals in the United States of America. Their reference guide defines computer assisted mass appraisal as the process of valuing a universe of properties on a given date using a standard methodology, employing common data,

and allowing for statistical testing. The advancement of computational software and the permission to use mass appraisal techniques enables the application of mass appraisal methodologies by the valuation and computer-assisted mass appraisal community.

The cautionary identified by FIG (2014) is that each country's land information or cadastral system should be appropriately designed to address the needs of that specific country. Good land governance is not an absolute condition, but rather a continuum between weak and good governance. Integrated and collaborative institutional frameworks are required to both manage land resources and implement effective land administration.

2.10 CONCLUSIONS

This literature thesis outlines what previous authors have written with respect to whether property rates are a good tax, the extent of coverage, the accuracy of valuation assessments and the frequency of reassessments, the influence of institutional arrangements, and lastly how administrative considerations including the perceptions of taxpayers influence the performance of recurrent property taxation. While a recurrent property tax is difficult to implement, costly to administer, and unpopular among taxpayers (Sepulveda & Martinez-Vazquez, 2011), it is considered the most appropriate tax for local government to administer and an important component of own source revenue for municipalities.

There are positive correlations between recurrent tax efficacies and coverage, accurate assessments, open access to property data and the capacity of the administration systems and spatial data infrastructure. All are enabled through adoption of relevant technological innovation. The necessary input datasets required for coverage for property rates include deeds or registration data, transaction or sales data, the cadastre and the spatial data, together in the spatial data infrastructure. Collectively, these are the base input datasets required for recurrent property taxation. New Zealand's land information system informs the necessity for quality assurance and standards in a mature land information model. The combined effectiveness of the Registrar General of Land's quality assurance programme for the land rights registration system, the Surveyor General's oversight of the cadastral and geodetic survey systems and the practice of Creative Commons provides extensive opportunity for data correction and improved data integrity. The result is an accurate, current and fully accessible land information database.

Projects to assemble taxation platforms for property rates involve the valuation of large numbers of property records on a given date, the date of valuation. The determination of these value assessments requires property attribute data and various valuation methodologies and statistical methods or techniques. The selected attributes vary according to the selected valuation technique and taxation base. Literary evidence concludes that the cadastre and spatial data infrastructure underpin sound land administration. Good land information enabled through spatial data infrastructure is required for effective property taxation, the generation of own-source revenue at a local government level and may also be extended to support other applications within the ambit of land administration. Land administration systems provide government with an infrastructure for

securing land tenure rights, determining valuation and taxation of land, and managing the use of land and land development. Enemark *et al* (2014) emphasise that the approach to land administration needs to be enshrined in a robust land governance framework. They caution that this may involve institutional and organisational reforms, including legal framework, processes and procedures, and awareness in terms of incentives and accountability.

Spatial data has the potential to resolve multiple issues cross-cutting various disciplines and organisations. A key tenet underpinning successful land administration is the accessibility of the spatial data. Kara *et al* (2017) conclude that the dissemination of the information about property data to the public is important for market transparency, contributing to fair and equitable recurrent property taxation. Data quality and reliability are also considerations for data sharing or interoperability. Adherence to data standards promotes both data accessibility and interoperability. Data standards are complemented by valuation and financial standards relevant to promoting effective recurrent property taxation.

With the escalating number of users in all levels of government and civil society, there is the need for these geospatial datasets to be responsibly integrated and administered. Spatial data infrastructure provides the enabling platform or the interface through which spatial data producers/providers and spatial data users interact, linking data producers, data providers and users who add value to the data (Rajababifard & Williamson, 2001; Williamson *et al*, 2010). Spatial data infrastructure may also support improved economic, social and environmental decision-making. This requires spatial information to be recognised as the integrating feature between various social and economic sectors.

With this contextual background Chapter 3 of the thesis reviews how property is defined in South Africa and investigates the relevant legislative frameworks governing property registration, property identification, property administration, spatial planning and spatial data infrastructure.

CHAPTER 3 PROPERTY DATA, LAND INFORMATION, LAND ADMINISTRATION AND THE ROLE OF THE MUNICIPAL PROPERTY REGISTER IN SOUTH AFRICA

3.1 INTRODUCTORY COMMENTS

Land is an important and finite asset underpinning most human activity. It is fundamental to understand the role that land plays in any society. In the South African context, the complexity of land and other property matters must be acknowledged. The apartheid regime extended or denied land rights based on race. *Apartheid*⁸ was a system of institutionalised racial segregation that existed in South Africa from 1948 to the early 1990s. Black South Africans voted in general elections for the first time on April 27, 1994, officially ending the apartheid system. Nelson Mandela was sworn in as the country's first Black president. Bruce and Boudreaux (2013) write that where land lacks adequate legal, institutional and traditional/customary protection it is easily subject to manipulation and abuse. Weak land governance leads to weak tenure systems, and the deprivation of individuals and communities of their land rights and access to land.

This chapter reviews how immovable property is perceived and defined in South Africa. The specific focus of this chapter is on land information and poses the question of whether the municipal registers of property assembled and maintained for property rates could play a greater role in land administration, contributing to overall land governance in South Africa. The assembly and maintenance of the municipal registers of properties is provided for in the Local Government: Municipal Property Rates Act, 6 of 2004 (hereafter “MPRA”), the subject of Chapter 4.

South African academics Hull *et al* (2020) propose a land governance framework whereby land policy forms part of the overall national development plan. This is the National Development Plan, 2030. At an operational level the pillars of land tenure, land value, land use and land development carry out the necessary actions to achieve the objectives of land administration⁹. Land management determines the strategies for implementing land policy. Land information is presented as a public inventory of property data based on a survey of their boundaries – the cadastre. Each land parcel is systematically identified by means of a separate description and locational reference. In South Africa, the current identifier is the Surveyor General's code. Once the cadastre is in place, property attribute data pertaining to the subject of land parcel/s may be added to the dataset. GIS technology permits different datasets to be layered providing an integrated dataset for each property parcel. The boundaries of the property, the unique identifier, together with the respective attribute data that may include the nature, size, value and legal rights or restrictions are attached to each specific land parcel. The literature review, Chapter 2, confirms that it is not only the quality of property data that is important, but also the public's perceptions of the quality of the data (Grover *et al*, 2017). Thus, the importance of quality data and good data management cannot be underestimated. Data about land should be both accurate and complete. It is noted that the current Surveyor General's code

⁸ Apartheid is the Afrikaans word for segregation, or “apartness”.

⁹ See Chapter 2, Figure 2.1, Source: Hull and Kingswill (2020).

used as a property identifier is inadequately inclusive. A prescribed standard for naming individual property parcels with a unique identification is a recommended reform for the management of spatial property data. GIS technology enables data to be analysed and shared contributing to world-wide decision-making, essentially changing the way that the world works. Makanga and Smit (2010) highlight spatial data as a necessary resource for the development of a nation.

It follows that who the custodians of these base datasets are and how property data is documented, assembled, maintained and managed is also important. In addition to the different spheres of government, there are private sector stakeholders including but not limited to, the commercial sector, neighbourhoods, communities and individuals that require and use property data, including spatial property data. Different stakeholders have different property information requirements. Who these users are and how they access and use property data is also a consideration.

The common law concept of property originates in Roman law. The Romans, according to van Niekerk (1998), provided an inherently pragmatic, community-based approach to law including universal qualities useful to any society at any time. Van Niekerk writes that western jurisprudence may have a lot to learn from African thought. Both Roman law and indigenous African law contribute to a common law about property for Southern Africa. Common law, especially the common law about property, predates the Constitution of the Republic of South Africa, 1996.

The common law description of property ownership is a complete, real right that extends the complete and absolute entitlement to that property by the registered property owner. The South African common law regards ownership as potentially the most extensive and absolute real right that a legal subject can exercise in respect of a legal object (*Gien v Gien* 1979 (2) SA 1113 (T) on 1120). The conditionality attached to this principle is that these real rights may be limited by law or by creditor's rights. Thus, in South Africa, property rights may be defined in written law or by traditions or customary law (Van der Walt, 1995; Becker, 2014). Property rights may take the form of registered individual ownership or a combination of real rights, according to the respective rights and obligations held by the land user or occupier. Real rights include usufruct, servitudes (e.g., a right of way) or communal rights. Communal rights include the right to occupy or use land connected to membership of a specific group. These forms of tenure may be represented on a continuum of land rights as proposed by UN Habitat¹⁰. Communally owned property poses challenges for establishing coverage in the municipal registers of properties as well as levying property rates¹¹.

Statutory law contains various definitions of the term "property". Only the following Acts are reviewed in this chapter, namely the Constitution of the Republic of South Africa, 1996; the Deeds Registries Act 47 of 1937, the Administration of Land Survey Act 8 of 1997, the Sectional Titles Act 95 of 1986, the Spatial Planning and Land Use Management Act 16 of 2013 and the Spatial Development Infrastructure Act 54 of 2003. The Spatial Development Infrastructure Act 54 of 2003

¹⁰ See Chapter 2, Figure 2.2 for the continuum of land rights.

¹¹ See Section 4.6.2 for the review of levying property rates on communally owned properties.

provides the national technical, institutional and policy framework for facilitating the capture, management, maintenance, integration, distribution and use of spatial information. The legislative mandate to integrate the underlying cadastre, land information and geospatial data in South Africa is assigned to the South African Spatial Data Infrastructure Directorate. The use of the Spatial Planning and Land Use Management Act 16 of 2013 (hereafter “SPLUMA”) and its regulations enables land categorisation at a local government level. Chapter 4 includes the review of the Local Government: Municipal Property Rates Act, the Act that regulates property rates and includes a further definition of ‘property’.

3.2 “PROPERTY” IN SOUTH AFRICAN LAW

The Constitution of the Republic of South Africa, 1996, is the supreme law in South Africa. It acknowledges past injustices, sets out various mechanisms and establishes dedicated courts to protect the interests of citizens and to redress past inequalities. The Bill of Rights affirms the democratic values of human dignity, equality and freedom. Section 25 of the Constitution states, with specific reference to property, that no-one may be deprived of property, except in terms of law of general application and that no law may permit arbitrary deprivation of property. The Constitution protects the right to hold property against arbitrary deprivation. The Registry of Deeds Act 47 of 1937 enables real right to be registrable. These real rights to immovable property may be transferred by registration as agreed by the parties to the contract. Every piece of land in South Africa is surveyed, described in a diagram and registered in the Deeds Office (Van Huyssteen & Maxwell 2021). These constitutional principles and values combined with the fundamental common law principles inform how South Africans analyse, view and ultimately protect “property”.

The Presidential Advisory Panel on Land Reform and Agriculture 2019 stated that the principles of property encompass how citizens interact and relate to “property” in a holistic manner. The current position in South African law is that only real rights, such as ownership, usufruct and mortgages, are capable of being registered, recognised and protected by law. While Section 25(1) of the Constitution extends protection to persons with formal, recognised and registered rights, it fails to explicitly protect informal or unregistered rights. This legal limitation poses a challenge for several aspects of South African society and is specifically addressed in this thesis¹².

This thesis is focused on the municipal registers of properties as provided in the MPRA. It is therefore appropriate that the definition of property found in the MPRA guides the thesis. “Property” is defined in the MPRA’s definitions as follows:

¹² See Section 4.6.2.4 for the review about the challenges of applying property rates to traditionally owned properties.

(a) “Immovable property registered in the name of a person, including in the case of a sectional title scheme¹³, a sectional title unit registered in the name of a person;

(b) a right registered against immovable property in the name of a person excluding a mortgage bond against the property;

(c) be a land tenure right registered in the name of a person or granted to a person in terms of legislation;

(d) or property may be public service infrastructure.”

The commonly used term to describe property ownership is as a bundle of rights (Claeys, 2011). The most important real right over land is ownership. It entitles the owner to use the property to its full potential, to dispose of it, to use it as security for a loan, and to exclude its use by others. The owner may extend limited real rights or personal rights in respect of property to a third party. Other parties, including government, also have certain rights over property. These include the imposition of property tax, both recurrent and other property taxes, or the use of the property for the public good.

South Africa’s unique terminology refers to a property parcel within a registered township as an ‘erf’ in the singular and ‘erven’ in the plural. Properties located outside registered townships are referenced as farms. The term, ‘erf’, has its origins in Afrikaans, one of the South Africa’s official languages. Section 102 of the Deeds Registries Act provides the following definition:

“erf” means every piece of land registered as an erf, lot, plot or stand in a deed’s registry, and includes every defined portion, not intended to be a public place, of a piece of land laid out as a township, whether or not it has been formally recognised, approved or proclaimed as such.

Erven located within townships have unique spatial references identified on a general plan. The Surveyor General is responsible for allocating unique identifiers to each erf or farm as an individual cadastral unit. The unique spatial identifier is the Surveyor General’s code, abbreviated to the “SG code”. The spatial reference for all land parcels in South Africa is important for the assembly of the municipal registers of properties and the preparation of municipal valuation rolls for recurrent property taxation. The municipal registers of properties both establishes and maintains the coverage for rating purposes. Although immovable, ‘property’ in the form of land and buildings is also dynamic. Such changes include property transfers or changes to the registration of the property, subdivisions or consolidations of property parcels, the completion of new buildings or the demolition of old ones amongst other property attributes changes.

The following sections review the legal frameworks that underpin land governance, land administration and land information in South Africa. The laws discussed include the Deeds Registries

¹³ The Sectional Titles Act, 1986, provides for the ownership and real rights in or over parts of buildings, and registration of title to ownership or other real rights in or over such parts.

Act 47 of 1937, the Administration of Land Survey Act 8 of 1997 and the Spatial Data Infrastructure Act 54 of 2003.

3.2.1 Deeds Registries Act 47 of 1937

The Deeds Registry is the custodian of land titles in South Africa. Despite the prominence and importance of this registry, the Registry does not have a spatially referenced database. From the perspective of recurrent property taxation, the Deeds Registry is the custodian of two sets of critical input data: the ownership details and the sales information used to inform the determination of open market value. Both property registration and transaction details are publicly accessible directly from the Deeds Office or through third party platforms for a fee.

Title to property is constituted through the registration of that specific property in the Deeds Registry, as provided in the Deeds Registries Act, 47 of 1973. The Registrar of Deeds executes duties prescribed by the Deeds Registries Act. The details of property registration include the registered owner of a property, the conditions of ownership, interdicts, and contracts specific to the property, the purchase price, the Surveyor General diagrams, sectional title plans and rules of the sectional title scheme if applicable, deeds of servitudes, as well as the details of any bonds against the property. Registered property descriptions are catalogued in the Deeds Registry. These include the erf, township and portion details or, in the case of properties outside of a general plan, the farm name and number. The Registrar of Deeds is not only responsible for the registration of property ownership, but also the maintenance and management of property ownership in South Africa, also known as the registered layer of property information.

Criticism of the Deeds Registry is directed towards lengthy updating processes; these delays impact the accuracy of available deeds data. Government recognises the slow pace at which land registration is implemented in the current system (Williams-Wynn, 2021). There is also an acknowledgment that the cost of acquiring title deeds or property transfer duty is too high for most first-time property owners. The South African Revenue Services publishes annual tariffs that indicate the relevant transfer duty costs on a sliding scale dependent on the value of the property. These range from a zero transfer for properties under R1 million up to 13% for properties over R12 million (South African Revenue Services, March 2024-February 2024 Transfer Duty). As a result of the high property transfer costs many properties owned by municipalities but occupied by individual households are not transferred to the occupiers. Unregistered properties or properties registered to the municipality as opposed to the respective occupiers has implications for recurrent property taxation. This issue is raised for noting but is not addressed in this thesis. The investigation of the impact of transactional costs on property transfers specifically in relation to the performance of property rates should be investigated further.

While the Deeds Office is the land registration authority, the Surveyor General is responsible for framing the descriptive diagrams of the respective properties. There are an estimated 9 million property parcels in South Africa, (Williams-Wynn, 2021). South Africa's property registrations are

based on the Dutch cadastral registration system whereby a property parcel is the basic registration entity for cadastral registration.

3.2.2 Administration of Land Survey Act 8 of 1997 (hereafter ‘Land Survey Act’)

The principle of cadastral registration follows the juridical definition of ownership of land. The registration of deeds is dependent on Surveyor General diagrams that describe the location and extent of the subject property. Surveyor General's diagrams are framed by actual points or beacons on the ground. The survey database is co-ordinated by the National Control Survey System maintained by the Chief Directorate National Geospatial Information with the actual land surveying conducted by professional land surveyors. Land surveyors and geomatics practitioners are important stakeholders within the context of this thesis, as the practitioners responsible for the assembly and maintenance of the municipal registers of properties. All professional GIS practitioners in South Africa must register with the South African Geomatics Council. This is the statutory council for the GIS professional sector.

The Administration of Land Survey Act 8 of 1997 and the Sectional Titles Schemes Management Act, 8 of 2011 provide the legislative framework for the Surveyor General's operations. Interestingly, there is no definition of “survey” in the Land Survey Act. This is found in the Geomatics Profession Act 19 of 2013. In this act, “surveying” is a component of geomatics work that includes the design, establishment and administration of geographic information systems and the collection, storage, analysis, visualisation and management of geo-spatial information.

The Surveyor General's national cadastral mapping system defines and delineates individual property parcels as well as the rights extended over these parcels. The Land Survey Act defines its “diagrams” in Section 1(vi) as:

“A document containing geometrical, numerical and verbal representations of a piece of land, line, feature or area forming the basis for registration of a real right ...”

The aggregation of spatially represented land parcels is referred to as the cadastre. Along with the ownership details, cadastre is important foundational data for the assembly of the municipal registers of properties. The cadastre represents the formally surveyed and registered properties as they are configured on the ground, i.e. spatial property information. The Surveyor General is the custodian of the cadastral data. Despite the provisions of the various statutes, practitioners experience an imperfect match between the deeds (registered ownership) and the cadastre. In addition, informal or unregistered forms of tenure are not included in the registered layer. For clarity - informal tenure is considered as ‘off-register’, while an unregistered property indicates the presence of a framed SG diagram that has not yet been registered or lodged with the Deeds Registry.

The establishment of a geospatial municipal register of properties excludes the onerous burden of land survey verification required for a full land audit. This expensive and lengthy undertaking is necessary where there is little or no information available for a specific area. A full land audit must be supervised and certified by a professional land surveyor. It includes physical checking and validation of every single municipal register of properties in both the Deeds Office and lodged in the

Surveyor General's Office within the identified area. By identifying the relevant field beacons, replacement cadastral surveys are drawn up by the surveyors and the survey data is rectified. The survey data is converted and plotted, attribute information created, and the relevant land use is classified to create a spatial land audit. Where the spatial data is unavailable, field inspections are undertaken to verify the property attributes. The misconception that municipal registers of properties require adherence to land surveying standards is unfounded. In my opinion, a partial land audit or the creation of an inventory of all of the properties within an identified jurisdiction is adequate for the purposes of establishing municipal registers of properties for property rating and financial reporting purposes. The municipal register of properties must be sufficiently accurate for the determination of market value. Completeness of the cadastre is a non-negotiable prerequisite for the purposes of recurrent property taxation.

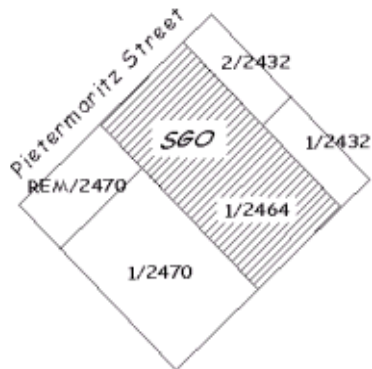
The cadastre provides the platform for property information systems. The FIG Commission Statement on Cadastre and Land Management (Commission Statement 7) states that this data has an important legal, social and economic role society. The Commission 7's Statement emphasises the need for such data to be accessible and, if possible, publicly available.

The Surveyor General's diagrams have the following attributes: the unique designation of the property; an illustration of the property; details of all boundaries; descriptions of the corner beacons; the extent of the property, as well as details of any registered real rights and a unique reference number supplied by the Surveyor General, (hereafter the "SG code"). The SG code is the identifier for individual erven or land parcels. There are specific business rules attached to the concatenation (code chain) of these unique codes. The SG code comprises 21 digits denoting the following: the location of the Surveyor General's Office, the major region, the township, the erf or farm number and the portion number¹⁴. The importance of the unique property identifier for individual property parcels is emphasised as a recurring subject throughout this thesis.

Table 3.1 below illustrates how the 21-digit SG code is assembled.

¹⁴ The property (erf) is the basic land unit within a township from which portions may be subdivided or consolidated. The SG code naming protocol identifies the 'parent' erf and then the relevant portion or consolidation.

Table 3.1: Table to illustrate the assembly of the 21-digit SG code

N0FT0258000024640000100001 N + 0FT + 0258 + 00002464 + 00001 + 00001			
Code Example	No. of Places	Description	
N	1	SG Office N = Pietermaritzburg	
0FT	3	Major Region In Kwazulu-Natal there are 14 Registration Divisions: HS; HT; HU; HV; GS; GT; GU; GV; FS; FT; FU; ER; ES; ET.	
0258	4	Minor Region A region code has been allocated to each town. The region code for a farm is 0000.	
00002464	8	Erf / Farm Number	 Key = N0FT02580000246400001
00001	5	Portion Number	

Source: Adapted from the SAGI Practitioners Guide (James & Channing, 2020).

Attaching these identifiers or codes to the individual property parcel facilitates property transactions promoting the security and protection of the owner's rights. At municipal level uniquely identified land units permit more effective land use, accurate service delivery and the management of planning and development regulations. Attention to assigning a unique property to each erf or

farm promotes the quality of property information. Adherence to the naming protocols elevates the quality of land administration.

Given that the Surveyor General's diagrams frame both the location and extent of property, diagrams must be amended whenever any of the cadastral attributes of a property change. For example, if a property is subdivided or consolidated, the subdivisional or consolidation diagram depicts the portion of the property to be cut off from the parent in the case of a subdivision or conversely consolidating various portions of property. Surveyor General diagrams are registered together with the corresponding deeds in the Deeds Registry. A general plan refers to large numbers of erven resulting from the establishment of a township from a farm parcel. Township establishment occurs when a municipality identifies the use of a piece of agricultural land for development as residential, commercial or industrial property or a combination thereof. Approval of such an application announces a new township where the layout includes erven and streets on a general plan. The determination of municipal boundaries is the responsibility of the Municipal Demarcation Board. From a legislative perspective, the demarcation framework is regulated by the Local Government: Municipal Demarcation Act, 27 of 1998. This framework establishes 'wall to wall' coverage for all registered properties across the different municipalities for the whole country.

South Africa's existing land information is constructed from official cadastral records, many of which are old and outdated. Such documented land parcels may be inaccurate, especially where these boundaries are based on dynamic topographical features (Williams-Wynn, 2021). In theory, there should be a limited possibility of conflicting claims to property ownership, as all diagrams, general plans and sectional plans are reviewed by the Surveyor General ahead of the final registration of a property. Despite this assertion there are instances of unregistered and un-surveyed land parcels, as well as examples where multiple general plans have been consecutively overlaid over the same area.

In summary, the national cadastre includes identifiers and boundaries for all land parcels in South Africa. The SG code is an essential attribute for all ownership and legal processes related to property. The cadastre therefore provides excellent opportunities for supporting the development and monitoring of use of land management policies. South Africa's National Development Plan 2030 includes directives for increased urbanisation and makes provision for the future growth and management of urban areas. The National Development Plan also includes a 2030 vision to eradicate poverty and reduce inequality. The plan focuses on various issues, including employment, infrastructure, education, health, housing and social protection. The 2030 National Development Programme provides the transformational vision to address infrastructural inequalities and shift the alignment of land use to support the strategic objectives of the country. This plan is spatially articulated through the National Spatial Development Framework that integrates and coordinates plans. This macro framework provides a spatial development plan for the country, a set of spatial directives for infrastructure development and other key strategic developments.

At municipal level the strategic plans for municipalities are captured in their Integrated Development Plans (IDPs) in line with the provisions of the Local Government: Municipal Systems

Act, 32 of 2000. The preamble to this act prescribes the establishment of a simple, enabling framework for the core processes of planning, performance management, resource mobilisation and organisational change that inform the developmental mandate of the municipality. The Integrated Development Plans are aggregated as a single, inclusive and strategic district municipal plan that integrates and coordinates the development plans of the participating local municipalities. The municipal Integrated Development Plans provide the general basis for municipal budgets. Municipal resources and capacity are aligned to the Integrated Development Plans that have a five-year horizon and, in terms of Section 34(a) of the Municipal Systems Act, must be reviewed and updated annually. The Integrated Development Plans for the individual municipalities are aligned with the National Development Plan, 2030. The research question addressed in this thesis is whether the role of municipal registers of properties prepared in terms of the MPRA may be extended to support municipal Integrated Development Plans.

The Spatial Planning and Land Use Management Act 16 of 2013 (hereafter “SPLUMA”) provides the spatial development framework for local government. Both the National Spatial Development Framework and SPLUMA are dependent on spatial data to execute their various mandates and to report progress towards the projected targets outlined in the National Development Plan, 2030.

3.2.3 Spatial Planning and Land Use Management Act 16 of 2013 (hereafter “SPLUMA”)

This section outlines the provisions of the Spatial Planning and Land Use Management Act 16 of 2013 used at a municipal level. Municipalities are directed to address local planning and land use categorisation through SPLUMA. SPLUMA was developed to achieve these goals and to provide spatial context for proposed strategic interventions. SPLUMA’s Section 2(2) requires municipalities to adopt Spatial Development Frameworks and Land Use Schemes. SPLUMA includes development principles, policies and legislation regulating spatial development planning and the management of the different land uses through municipal land use schemes. Municipalities record the permitted land use for all individual property parcels within the municipality through its land use scheme in accordance with the provisions of SPLUMA. Municipal spatial planning and land use management schemes are represented spatially.

Municipalities are also empowered to approve applications for rezoning, subdivisions, consolidations and township establishments, to issue special consents for specific land uses, to suspend restrictive conditions of title; all adjustments to land use change property attributes. The land use of each property is a property attribute and is attached to the property record in the municipal register of properties. Adjustments to land use equates to a change in the characteristics or attributes of property. Changes to the attributes of properties are material for the maintenance of the municipal registers of properties with implications for property valuations and the levying of property rates.

The next section addresses how spatial data and property information is managed. This is provided through the provisions of the Spatial Development Infrastructure Act.

3.2.4 Spatial Development Infrastructure Act 54 of 2003 (hereafter “SDI Act”)

The SDI Act provides the regulatory framework for how spatial data and property information is managed. The SDI Act is the national technical, institutional and policy framework responsible for facilitating the capture, management, maintenance, integration, distribution and use of spatial information. Despite this clear mandate most GFIS practitioners perceive the SDI Act’s mandate as being limited to metadata, or data about the data. Spatial information or geodata focuses on location, so that each property has a unique location represented by latitude and longitude co-ordinates (XY coordinates).

There are two principal types of spatial data, namely raster data and vector data.

- Raster data is composed of data in cells or a grid matrix. This is continuous data. Examples include elevation and distance. Discrete rasters with distinct values or themes denote land use or soil type, showing a definable area. Continuous rasters may be used to show gradually changing data such as elevation or erosion.
- Vector data denotes a shape with discrete boundaries, a shape represented by using sequential points or vertices. Examples include property boundaries, administrative boundaries, roads and rivers. Vector points are XY coordinates with a spatial reference frame, closing the dots. A vector polygon is when the first and last coordinate pairs are the same. Mapping uses polygons to show boundaries, properties or building footprints.

Geodata is location information stored in a GIS system. Spatial data structures provide the information that GIS software needs to reconstruct the spatial data into a digital form. There are numerous sources of open-source GIS data, ranging from land use to street map data. There is also publicly available imagery which includes satellite imagery with an option for historical imagery views. Alternatively, there are licensed GIS packages. The product suite most often used by all levels of the South African government is a licenced product: multi-national ESRI’s ArcGIS. Whether subscription to this product suite is appropriate for cash-strapped municipalities from an affordability perspective is noted but is not investigated in this thesis.

The SDI Act’s mandate falls under the Department of Agriculture, Land Reform and Rural Development. An appointed committee in this department oversees the national spatial information and is tasked to give effect to its provisions. Given the relevance of spatial data to this thesis, the objectives of the SDI Act, stated in Sections 3(2)(a) to (g), are listed below:

These objectives are:

- a) The facilitation of the capture of spatial information through co-operation amongst organs of state;
- b) Promotion of the effective management and maintenance of spatial information;
- c) Promotion of the use and the sharing of information;
- d) Creation of an environment that facilitates co-ordination and co-operations between stakeholders regarding the access to spatial information;

- e) Elimination of duplication in capturing spatial information;
- f) Promotion of access to this information; and
- g) Facilitation of the protection of copyright of the state in works relating to spatial information.

Section 11(1) of the SDI Act provides for the Minister, Department of Land Reform, Agriculture and Rural Development, to determine standards and prescriptions to facilitate the sharing and integration of spatial information. The Minister's other prerogative is to establish a committee for spatial information. Under Section 6(1)(b) of the act, this committee's mandate is to advise on matters regarding the capture, management, maintenance, integration, distribution and use of spatial information. The role of the committee is to work towards the access and interoperability of spatial datasets that support and enhance South Africa's resource allocation through development planning, sustainable land use management and improved service delivery.

This committee is responsible for allocating data custodianships. The SDI Act (section Definitions) defines "data custodians" as follows:

"An organ of state or an independent contractor engaged in the exercise of a public power or performance of a public function which captures, manages, maintains, distributes, or uses spatial data ..."

For such custodianships to be formalised, they must be gazetted in the Government Gazette. To date few data custodianships have been gazetted, leaving much of the spatial data outside formally regulated frameworks. Examples of custodianships include the Surveyor General's Office that is the data custodian of cadastral data and the South African National Road Agency, the parastatal agency responsible for the management, maintenance and development of South Africa's national road network. This agency is the nominated custodian of the spatial data for the state road network. Given this definition, municipalities, through their internal or procured GIS practitioners, are spatial data custodians of the municipal registers of properties.

The SDI Act also prescribes that spatial datasets are to be shared on a collaborative basis to avoid duplication of effort. Section 3(2)(c) of the SDI Act provides that the data custodians should promote the use and the information to support spatial planning, socio-economic activities and development. Municipalities are responsible for assembling and maintaining of municipal registers of properties - as provided in Section 23, MPRA. The shortcoming of this MPRA provision is that it is not explicit about the inclusion of spatial data in the municipal registers of properties. This omission prescribing the inclusion of spatial data has material consequences for the assembly and maintenance of the municipal registers of properties. These are described more fully in Chapter 4. Currently it is good practice or a contractual requirement rather than a regulatory provision for geospatial property registers to be assembled and maintained by municipalities. Coetzee *et al* (2020) state that without active contributors, the currency and utility of the geospatial datasets will diminish.

An important spatial data objective provided in Section 3(2)(c) of the SDI Act is for sharing information. Without a standard naming protocol, property data is not interoperable and cannot be shared effectively. Currently GIS practitioners use various methods for acquiring, sorting, analysing and viewing their spatial data. The present Surveyor General's code comprises 21-digits¹⁵, refer to Table 3.1 The limitations of the 21-digit code is the exclusions of sectional title schemes, their sections, unregistered properties, multiple purpose properties and other unusual property types. Professional engagement with the South Africa Geomatics Institute (SAGI) resulted in the development of a practitioner's guide for the assembly and maintenance of municipal property registers (James & Channing, 2020). This practitioner's guide outlines proposed business rules for a property parcel naming standard extended to 32-digits. This extended code will enable the unique identification of all property parcels across South Africa. The adoption of this naming standard will enable property data to be interoperable, allowing diverse systems to develop overlapping understanding of the property domain in South Africa. In South Africa's digitally evolving environment and given the resource constraints of government to improve governance and service delivery, shared data is an invaluable asset.

The extended 32-digit code is developed in consultation with GIS practitioners. In contrast to the concatenation illustrated in Table 3.1, the expanded 32-digit SG code as illustrated in Table 3.2 provides for sectional title scheme, their sections, as well as for the unusual property types. These 'unusual' property types are denoted by a user-defined alpha character e.g. 'U' to denote an unregistered property, 'M' for a property used for more than a single purpose, or 'C' to show that a property is occupied by a certificate holder. Through the adoption of this naming standard, all properties including properties held as sectional title schemes, sections, unregistered properties, off-register forms of tenure and other unusual property configurations may be depicted spatially.

Table 3.2: Illustration of the proposed 32-digit SG code

Province	1	N	SG21CODE
Administrative District / Registration Division	3	0FT	
Town	4	0258	
Farm / Erf	8	00001234	
Portion	5	00001	

¹⁵ Refer to Section 3.3.2 for the details of the 21-digit SG code.

CURRENT 21-DIGIT SG CODE	21		
Sectional Title Scheme and sections	5	00001	SG26CODE
Expanded code may include: • Exclusive Use Areas (Sectional Title) • Multi-purpose portions • Unregistered portions • Off register 'portions'	6	E00001 M0001 U0001 C00001	SG32CODE
EXPANDED 32-DIGIT SG CODE	32		

Source: Adapted from the *SAGI Practitioners Guide* (James & Channing, 2020).

While this thesis focuses on the municipal registers of properties in respect of property rates levied by municipalities, service delivery (water, electricity and refuse collection) are also municipal functions. Both the physical service delivery and the consumption billing require the individual and unique identification of property records. These operational realities place further reliance on the accuracy and currency of the geospatial property register used by municipalities.

Mey *et al* (2020) in their study on South African land information, find that the South African government and its respective vendors are the main data producers and users of spatial data. The most accurate spatial data resides with appointed service providers at municipal level. As the maintenance of the municipal registers of properties includes capturing changes to property attributes, the currency of the respective municipal property registers should be up to date. Given the responsibilities for both the assembly and maintenance of municipal registers of properties, the omission of nominating municipalities as data custodians as provided in the SDI Act is a key finding of this thesis. Chapter 5: Monitoring and oversight of the municipal registers of properties expands on this finding.

The next section addresses the institutional considerations around the management of data, specifically spatial and property data. Mey *et al* (2020) describe South Africa's property data as 'fragmented and inaccessible'. These authors state that users of spatial data each have their own culture for capture, storing and sharing data. This section merely touches on the institutional considerations from the perspective of property data, starting with the municipalities themselves and then addressing other stakeholders. The following chapter, Chapter 4, provides a detailed review of the institutional issues from the perspective of the municipal registers of properties as provided for in the MPRA.

3.3 INSTITUTIONAL CONSIDERATIONS

According to Kaywood (2021), the South African local government system carries mounting and colossal historical burdens. Breaking the institutional silos is a recognisable institutional challenge. While municipalities are assigned a developmental role, this needs to be supplemented and supported by integrated institutional and management structures, financial capacity, and functional statutory provisions for transformation. The current sectoral silos exist not only between national and provincial departments, but also in the municipalities themselves. A 2020 study by Land Portal on the state of available land data in South Africa supports Mey *et al*'s (2020) findings about property data being both fragmented and inaccessible. The Land Portal study concludes that the metadata or the information about the data is only evident in 57 percent of the resources (Land Portal, 2022) and thus unable to be shared.

It is evident that even in single municipalities there may be several geospatial databases or GIS systems. This segregated arrangement is encountered in the City of Johannesburg where the City's Land Information System is not fully integrated with the City's valuation roll management system. Tija (2014) notes that the current situation is the result of the difficulties to get the various stakeholders to see the need for a single version of the truth and to dilute their "power" over land matters. eThekweni Metropolitan Municipality, KwaZulu-Natal, establishes good practice by maintaining a corporate GIS viewer enabling the public access to various data layers (<https://gis.durban.gov.za/cmv-cgis/viewer/?config=cgisPublicViewer>).

Integrated databases are enabled through technology. The objective of interoperability is realised when, for example, planning authorities view the restrictions applicable to the land parcels and the landowner's access all the information pertaining to a specific property through all using a common integrated system, a single version of the truth. There is the potential for the municipal registers of properties to provide such a property information hub for local government.

This research, focusing on the municipal registers of properties, reviews the current and potential role of these registers towards land administration systems.

3.4 LAND ADMINISTRATION SYSTEMS

In South Africa, the cadastre is the foundation of land information and land administration systems. Land administration requires good property data to fulfil its function. Land administration is executed by government and perceived as the domain of government. Land administration comprises a range of systems and processes to manage land tenure and associated land rights, land value, land use and land development.

The land administration goals are conditional upon the commitment by the related stakeholders to implement an effective land administration structure. ICT supports the necessary data infrastructure, as well as facilitating public access to the land data. Information management within the context of land administration systems refers to how property data is collected, stored, retrieved, disseminated and shared. South Africa's Spatial Data Infrastructure Directorate is, in terms of the legislation, responsible for the nomination and performance of the data custodians who contribute to

the assembly and maintenance of the respective data layers for which they are responsible. There is an institutional void when it comes to addressing the management of the spatial data.

Fisher and Whittal (2020) advocate that these property information layers of the South African land administration system be grouped into multi-purpose cadastre. Multi-purpose cadastre is promoted in the Final Report of the Presidential Advisory Panel on Land Reform and Agriculture (May 2019). The recommendation of the Advisory Panel is for the establishment of a current integrated planning and land information system for all property related information.

The term “multi-purpose cadastre” is used globally to describe the combination of the following systems (Fisher & Whittal, 2020: 338):

- Juridical systems with legal rights, responsibilities and restrictions, registration/recoding, spatial elements of location and extent;
- Fiscal cadastre with details of property valuation and taxation;
- Regulatory cadastre managing land use and development.

Whether called a land administration system or multi-purpose cadastre such a national data portal addresses the integration of the current administrative silos by “debottlenecking, facilitating and co-ordinating across spheres of government” (Advisory Panel on Land Reform and Agriculture, 2019: 77). Multi-purpose cadastre is currently framed as a Land Management Paradigm, or the technical engine for a land administration system. The functions of the multi-purpose cadastre described above are duplicated at a municipal level through the assembly and maintenance of the municipal registers of properties. These contain the property ownership data (the juridical cadastre), the current valuation roll (the fiscal cadastre) and the land use schema (the regulatory cadastre).

From a juridical standpoint, land administration includes the allocation of land rights through free hold title, servitudes, leases, or unregistered or off-register tenure allocations through traditional or communal tenure. All of these are represented as individual uniquely identified land parcels delimited by boundaries. In the case of formal title, the boundaries are surveyed. Notional or hypothetical boundaries may be created for informal tenure types. FIG (2014)¹⁶ emphasises that the traditional cadastre should be incorporated into land administration systems.

The next consideration is the fiscal function within the context of land administration. This data includes property valuations required for recurrent property taxes, as well as other property taxes (e.g. transfer duty), just and equitable compensation for properties acquired by the government, for land reform or other purposes, as well reporting municipal financial transactions to National Treasury in terms of the MFMA. The primary function of the municipal registers of properties as provided in the MPRA is to provide the current valuation roll, thus fulfilling the fiscal function towards recurrent property taxation. Ideally the municipal registers of properties would also include the regulatory cadastre, as these permitted land uses are material to the valuation of the properties. Spatial planning and land use management are managed through both a national and provincial legislative

¹⁶ See Section 2.6.2 for FIG’s definition of a cadastre.

framework. SPLUMA¹⁷ regulates the land use planning through land use schemes and zoning in municipalities.

The final component in the Land Management Paradigm relates to enforcement involving the regulatory bodies that enforce property rates (municipalities), enforcement of water rights (Department of Water Affairs) and the enforcement of environmental considerations, for example, coastal reserves (Environmental Management: Integrated Coastal Management Act, 24 of 2008).

This thesis favours the inclusive explanation of the functions of a land administration system, noting that multi-purpose cadastre is a parallel paradigm. Enemark *et al* (2014) state that land administration systems should be designed for the purpose of managing current land issues in a specific country, emphasising that these should be inclusive, participatory, flexible and responsive to citizen's needs. The 'fit-for-purpose' land administration principles¹⁸ provide a process or approach that is both affordable and relatively quick to achieve. The next section reviews the options for land administration systems in South Africa and poses the research question as to whether the municipal registers of properties provided in the MPRA have a role to play to support land administration.

3.5 REVIEW OF LAND ADMINISTRATION SYSTEMS OPTIONS FOR SOUTH AFRICA

Enemark *et al* (2005) state that governments ought to promote good land information systems with accurate, complete and efficient property data, including registration data, a cadastre including both registered and unregistered rights and interests pertaining to the specific property. Effective land management is only successful with adequate land information. This includes but is not limited to information about land resource capacity, land tenure, land ownership, fiscal considerations, actual and permitted land use. The 1999 FIG Report cautions that most land administration systems are insufficient to meet the challenges of the increasingly complex range of rights, restrictions, and responsibilities in relation to land (Grant, 1999).

Williams-Wynn (2021: 5) states that a fit-for-purpose land administration system should be implemented in South Africa so that land administration is:

“Designed to meet the needs of the people and their relationship to land, to support security of tenure for all, and to sustainably manage land use and natural resources.”

Hull *et al* (2020) caution that the adoption of the fit-for-purpose land administration system may be a solution, but only after acknowledging certain considerations. These authors write that the fit-for-purpose approach is a guideline that needs to be tailored to South Africa's specific situations and requirements, especially with relation to land tenure. According to Hull *et al* (2020), the simple adoption of the fit-for-purpose principles¹⁹ will certainly result. Figure 3.1 provides an illustration of the advanced model of land administration developed by Hull *et al* (2020). In this model, land

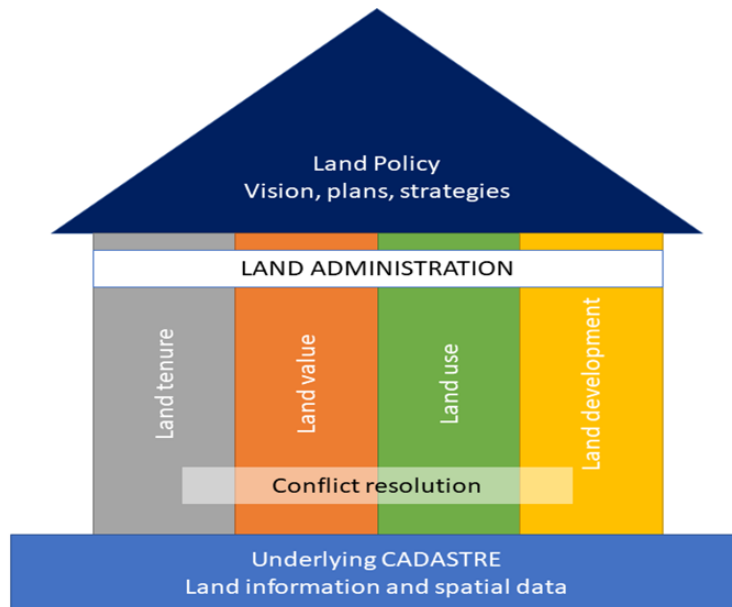
¹⁷ See Section 3.3.3 for the review of SPLUMA.

¹⁸ Refer to Section 2.7.2 for the review of 'fit-for-purpose' land administration principles.

¹⁹ Refer to Section 2.7 for the review of the 'fit-for-purpose' land administration principles.

governance provides the overarching policies, plans and strategies for land management under the national land policies. This schematic depicts the four pillars of land administration as land tenure, land value, land use and land development. The use of such a system would address the processes of determining, recording and sharing information about property and most specifically about the relationship between land and the people.

Figure 3.1: Schematic View of Land Administration



Source: (Hull et al, 2020).

An alternate model to Hull et al (2020) is the international standard for spatial data administration, the Land Administration Domain Model (LADM)²⁰. The extended LADM connects sustainable development objectives and valuation data to the land, a physical or spatial object. A geographic property registry is created for recurring property taxation using the extended LADM. To establish coverage, all properties are first and foremost included in the taxation base or valuation roll. This foundational dataset is the inventory or property register. The revised LADM illustrates that such models are dynamic and should be periodically revised, as the technology advances and property information requirements evolve.

Tija and Coetzee (2013) used the City of Johannesburg as a case study for the LADM. The purpose of their study was to understand whether this model could improve the current Land Information System used by the City of Johannesburg. The City of Johannesburg's current operation includes disparate property information databases, each managed by the respective departments that require with property information. Tija and Coetzee (2013: 14) describe the City of Johannesburg's land information operation as follows:

“This mode of operation made property information maintenance and sharing across departments virtually impossible and resulted in data duplication and misinterpretation. The lack of integration of property data and systems negatively affected service delivery turnaround times for development

²⁰ See Section 2.8 for the review of the Land Administration Domain Model.

applications (i.e. township development, subdivision, consolidation, etc.). This in turn affected the economic growth of the city.”

It is understood from city officials that the integration into an integrated system has commenced (Eloff, 2023)²¹.

The review of land administration systems options for South Africa suggests a customised fit-for-purpose system to meet the needs of the citizens, their relationship to land, support security of tenure, and sustainably manage land use and natural resources. The caveat to any land administration system is that these should be considered dynamic and should be periodically reviewed and, if necessary, revised as technology advances and property information requirements evolve. Any approach needs to be tailored to South Africa's specific situations and requirements, especially in relation to land tenure. South Africa's land tenure includes various forms of unregistered or off-register tenure. Just because these tenure rights are off register does not detract from the fact that these are real rights that should be formally recognised and identified on a spatial basis.

All land administration systems require property information, and a standard naming protocol is necessary for data to be interoperable. Irrespective of the land administration model adopted by policy makers, there is an immediate need to revise the standard naming protocol to identify property parcels to include the extended SG code, i.e. the 32-digit SG code²². The adoption of the LADM as the national spatial data standard is an option, the advanced ‘fit-for-purpose’ model an alternative, with the Land Management Paradigm as the technical engine for the land administration system a further consideration. Other land tools that give effect to principles, policies and legislation may also be considered for the South African circumstances. The Global Land Tool Network, the Food and Agriculture Organisation of the United Nations, the World Bank and others have developed several options from simple checklists through to complicated models. This investigation is beyond the scope of this research but should be considered for further research.

In summary, all land administration systems require property information. Municipal registers of properties contain, or ought to contain, current and complete property data for every municipality across South Africa. These databases are invaluable to any national land administration or land management system. It is conclusive that for property data to be interoperable there must be a standard naming protocol to uniquely identify each property parcel. This research concludes that municipal registers of properties could make a significant contribution to the accuracy of land information in land administration systems in South Africa. The provisos of attaining this objective include the adoption and enforcement of the extended standard for naming property parcels (32-digit SG code) and municipalities being nominated and undertaking their responsibilities as data custodians of the municipal registers of properties in terms of the SDI Act.

²¹ See Section 3.3 for reference to the City of Johannesburg's GIS systems under institutional considerations.

²² See Section 3.2.4 for the review of the limitations of the current 21-digit SG code.

3.6 CONCLUSION

This chapter examined South Africa's legal definitions and perception of “property”, related institutional arrangements, and operational processes that impact on the assembly and maintenance of the municipal register of properties required for property rates coverage. The specific focus addressed land information, land administration, and whether the municipal registers of property as provided for in the MPRA have an extended role to play in land administration. South Africa's infamous apartheid regime, where rights to own land were extended or denied based on race, left a legacy of complicated and complex land tenure arrangements. These are being redressed through various land reform programmes.

There are several legislative frameworks for property information, the cadastre, property management and property administration. Increased levels of collaboration between data custodians and the various users of the property data are required to achieve an accessible, current and unified property administration system. Property data must be accessible, up-to-date and easily understood. The finding is that the current Surveyor General's 21-digit code has limitations. The adoption of the 32-digit code as the standard naming protocol to identify each property parcel uniquely is a key finding and recommendation of this study. Such a standard should be nationally adopted to enable geospatial property data interoperability through a shared data exchange framework. The development of this as well as other reform recommendations is addressed more fully in Chapter 7.

Municipalities are responsible for assembling and maintaining a municipal register of properties through provisions in the MPRA. The existing provisions do not prescribe the inclusion of spatial data – this is a limitation. The operational responsibility for managing property data, particularly spatial data, is assigned to GIS professionals. Notably property valuers are not responsible for this function within the ambit of preparing and maintaining valuation rolls for the purposes of property rates. This thesis finds that municipalities ought to be recognised as data custodians, as provided for in the SDI Act. The accuracy and currency of geospatial property registers is dependent on active contributions to maintain the currency of the municipal registers of properties. This delegation vests with the municipalities whose responsibility is to update their municipal registers of properties whenever necessary, that is whenever there is a material change to any of the property attributes. This maintenance preserves the equity of the property rates in terms of the MPRA for the duration of the roll's validity.

National Treasury's reforms for local government's financial transactional reporting introduced a further application for the municipal registers of properties. Prescribed reporting requires a locational reference for all municipal financial transactions. This reporting prescription is fully described in the next chapter, Chapter 4, a review of the municipal property register.

Government, at various levels, requires good land information to attend to a multiplicity of governance requirements. These include but are not limited to the provision of water, health services, managing disasters, monitoring climate change, identifying flood zones to limit the development settlements, promoting food security or conservation initiatives, addressing land rights and land tenure issues or managing land use and prohibiting land degradation. Each application is informed

by a sense of place and requires property information. Access to good land information is important and should be extended to the widest range of users as possible. The reticence of government to withhold property data on the grounds that it is incomplete or not up to standard should be addressed. In my opinion, making property data publicly available would address data gaps and improve its overall quality. There is global best practice such as Creative Commons²³, New Zealand that endorses the principle that multiple users create greater opportunity for data correction and improved data integrity. This practice compels data users to report incorrect data to the respective data custodian for rectification.

This chapter concludes that there are various options for land administration systems. Contemplated land administration systems should be customised to South Africa's specific situations and requirements, especially with relation to the requirements to identify and record different forms of land tenure. The municipal register of properties – as provided for in Section 23 of the MPRA – is assembled and maintained primarily to extend coverage for efficient recurrent taxation. Municipalities have a legislative mandate for assembling and maintaining this property dataset. The logical extension of this resource is to consolidate the comprehensive detailed municipal property registers towards the establishment of a national property information system.

Chapter 4 provides a critical review of the municipal register of properties provided in the MPRA established and maintained for property rates and the MFMA that regulates municipal financial management. The thesis focuses on the land information requirements for compliance with both the MPRA and the MFMA and the status of the municipal register of properties, as these are currently implemented in South Africa.

²³ Refer to Section 2.8.1 for a full description of the practice of Creative Commons.

CHAPTER 4: CRITICAL REVIEW OF THE MUNICIPAL REGISTER OF PROPERTIES

4.1 INTRODUCTION

This chapter provides a critical review of the municipal registers of properties, as these are currently implemented and used by municipalities in South Africa. I address the legislative, institutional and operational perspectives pertaining to municipal registers of properties and identify emerging issues. Possible reform recommendations are developed in Chapter 8. This chapter reviews the legislative provisions between the MPRA, the MFMA, and the SDI and describes the present institutional relationship between the respective departments of CoGTA and National Treasury²⁴. This chapter also refers to the Protection of Personal Information Act 4 of 2013 (“POPIA”) and comments on the impact of this legislation on transparency and public accessibility to the municipal registers of properties or current valuation rolls.

The provisions for the establishment and maintenance of municipal registers of properties are provided in Section 23 of the MPRA. These provisions prescribe that a municipality must draw up and maintain a register in respect of properties situated in the municipality consisting of a Part A and a Part B. Given that the municipal register of properties is the crux of this thesis, the whole Section 23 of the MPRA is quoted here for ease of reference:

Part 5: Municipal register of properties

23. Register of properties

- (1) A municipality must draw up and maintain a register in respect of properties situated within that municipality, consisting of a Part A and a Part B.*
- (2) Part A of the register consists of the current valuation roll of the municipality, including any supplementary valuation rolls of the municipality prepared in terms of Section 78.*
- (3) Part B of the register must specify which properties on the valuation roll or any supplementary valuation rolls are subject to-*
 - (a) an exemption from the rate in terms of Section 15;*
 - (b) a rebate on or a reduction in the rate in terms of Section 15;*
 - (c) a phasing-in of the rate in terms of Section 21; or*
 - (d) an exclusion referred to in Section 17(1) (a), (e), (g), (h) and (i).*
- (4) The register must be open for inspection by the public during office hours. If the municipality has an official website or another website available to it, the register must be displayed on that website.*
- (5) A municipality must at regular intervals, but at least annually, update Part B of the register. Part A of the register must be updated in accordance with the provisions of this Act relating to the updating and supplementing of valuation rolls.*

²⁴ Refer to Chapter 1.1 for the description of South Africa’s government institutional arrangements.

The MPRA regulates the powers of municipalities to impose property rates or more commonly referred to in South Africa as property rates (“rates”). The MPRA includes provisions for both the assembly and maintenance of municipal registers of properties. These registers provide the coverage for property rates. Complete coverage or the most inclusive tax base enables municipalities to exercise their power to impose rates efficiently according to the MPRA’s principles of certainty, uniformity and simplicity. Therefore, municipalities need accurate, complete and current municipal registers of properties to enable comprehensive, equitable rating. This thesis also addresses property rating coverage within the broader context of municipal revenue and whether these registers could support the prescribed financial reporting as an extended application.

The MFMA and its associated regulations provide the regulatory framework for municipal financial management including financial reporting. The National Treasury, responsible for enforcing compliance with respect to municipal finances, introduced robust business reforms for municipal financial reporting through MFMA Regulations (Regulations 37577, 22 April 2014: Municipal Regulations on Standard Chart of Accounts) in 2014. These reporting provisions, the Municipal Standard Chart of Accounts (hereafter “mSCOA”), prescribe that municipalities report their financial transactions to National Treasury through a segmented reporting format. One of the prescribed reporting segments is the regional segment. This reporting segment reports details of the locational origin of municipal revenue and the destination of municipal expenditure. This reporting provision requires a spatial platform to enable successful regional segment reporting to National Treasury.

South Africa has wall-to-wall municipalities determined and re-determined by the independent Municipal Demarcation Board²⁵. There are 205 local and 8 metropolitan municipalities in South Africa (COGTA, August 2022) with 9 million registered and unregistered property parcels (Williams-Wynn, 2021). The South Africa Housing Market Report – 2020 records that around 90 percent of the country’s properties are used for residential purposes. Each municipality must record the properties in its jurisdictions in Part A of the municipal register of properties, i.e. the valuation roll. Valuation rolls are provided for in Section 48(1) of the MPRA.

This thesis addresses the assembly and maintenance of the municipal registers of properties as these are currently implemented in South Africa. A principal objective of the MPRA’s provisions is to establish coverage, or the inclusion of all properties in each municipality area for the purposes of rating. The MPRA’s provisions for the municipal registers of properties omits the prescription of spatial attributes to be assembled and maintained in these registers. This thesis investigates whether the prescription for geospatial attributes would enable improved accessibility to the municipal registers of properties. Currently municipal valuation rolls may be presented on spreadsheets. Part B of the municipal registers of properties has a different function; this is addressed in detail in Section 4.2.1.2.

²⁵ Refer to Section 1.1 for details of the legislative provisions for the demarcation of municipalities.

Chapter 1 of this thesis establishes the property rates contribution to own-source revenue. This context provides the relevance for property rates or property rates in South Africa²⁶. Funding for municipalities is derived from various sources. Own-source municipal revenue excludes grants and the equitable share extended by National Treasury to municipalities. The annual allocation of the equitable share is determined through the Division of Revenue Act, 4 of 2020. The preamble to the Division of Revenue Act reads as follows:

“To provide for the equitable division of revenue raised nationally among the national, provincial and local spheres of government for the financial year; the determination of each province’s equitable share; allocations to provinces’ local government and municipalities from national government’s equitable share; the responsibilities of all three spheres pursuant to such division and allocations; and to provide for matters connected therewith.”

The primary objectives of the equitable share are:

- to enable municipalities to extend free basic services to poor households or indigents; and
- for municipalities to afford administration and governance capacity to perform their core municipal functions.

Property rates constitute a significant contribution to municipal own source revenue. The relevance of achieving complete coverage for rating is confirmed. The initial section of this thesis addresses the differing interpretations regarding the assembly and maintenance of municipal registers of properties amongst various stakeholders. Operational inconsistencies including different methodologies and practices to establish and maintain municipal registers of properties result from a lack of clarity. In addition, municipal registers of properties, the fundamental instrument to establish coverage for recurrent property taxation, are neither checked nor reviewed by any oversight agency.

The technological advances in GIS software²⁷ enable property data to be shown through digital representation. Technology is transforming static maps to dynamic imagery, snapshots in time to real-time depictions of what is happening on the ground. The literature survey²⁸ details what previous authors have written of the merits of sharing land information or the interoperability of property datasets as an increasing global trend with the potential to compliment land governance. These authors caution of the risks associated with poor quality data within the immediate ambit of property rates and, at the macro level, of inclusive land governance.

²⁶ Refer to Section 1, Figure 1.1 for the analysis of property rates as a percentage of total municipal revenue, 2018-2023.

²⁷ See Section 3.2.4 for the review of GIS software.

²⁸ See Section 2.7.3 for the review of spatial data and spatial data infrastructure.

4.2 LEGISLATIVE AND INSTITUTIONAL REVIEW

This chapter reviews the legislative provisions that exist between the MPRA and the MFMA. The SDI Act²⁹ is reviewed in Chapter 3. Additionally, this chapter delineates the current institutional relationship that exists between the CoGTA, National Treasury and the SDI Directorate.

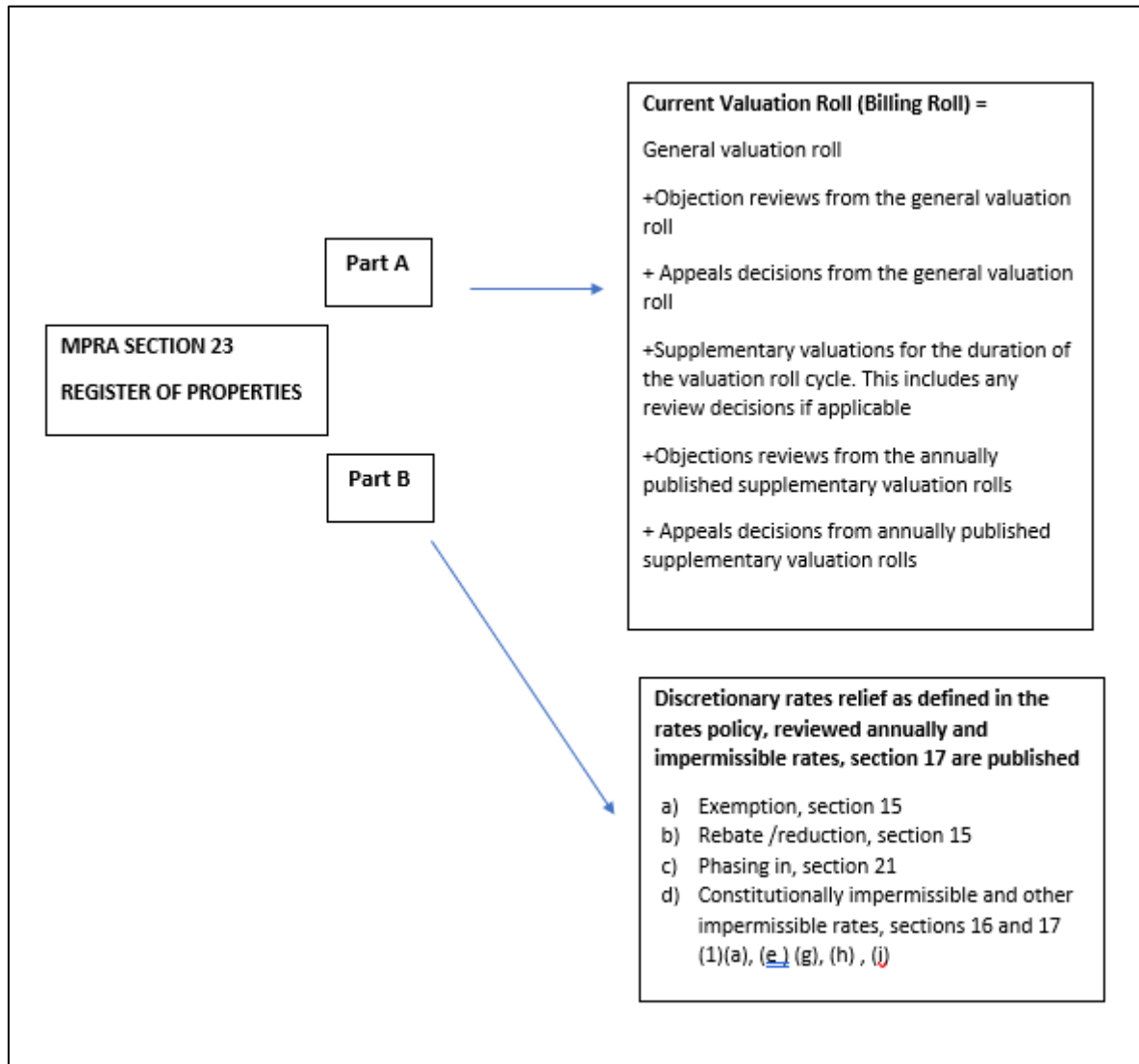
4.2.1 Local Government: Municipal Property Rates Act 4 of 2006 (MPRA)

The MPRA is the legislative framework that regulates the levying of property rates. The preamble to the MPRA states that its purpose is to regulate the powers of a municipality to impose rates on property. From a service delivery perspective electricity, water, sanitation and refuse removal services are delivered to or collected from a physical address, an immovable property. Thus, service delivery and billing for utilities is also dependent upon the identification of uniquely identified individual properties in the municipality. The municipal register of properties has utility for effective rating, service delivery and the billing of utilities. To achieve accurate billing, the respective property and both its rates and utility consumption details need to be linked to the correct ratepayer account in the municipal billing system. Part A of the municipal register of properties could provide the necessary property information to the municipal billing system for both utility consumption and recurrent property taxation. The extended use of Part A of the municipal registers of properties for the purposes of improving service delivery and utility consumption billing are discussed more fully in Section 4.7.

The MPRA's provisions allocate the responsibility for both the assembly and maintenance of the municipal register of properties to the municipality. The schematic illustrating the municipal register of properties is provided in Figure 4.1. Part A and Part B of the municipal register of properties are clearly delineated. Part A of the municipal register of properties is referred to in Section 23(2) of the MPRA as the current valuation roll.

²⁹ See Section 3.2.4 for the review of the legislative provisions of the SDI Act.

Figure 4.1: Parts A and B of the municipal register of properties, MPRA Section 23.



Source: Author's interpretation of the municipal register of properties (Section 23, MPRA).

The assembly of municipal registers of properties establishes the coverage for effective rating. The next sections address Part A and Part B and their respective legislative requirements.

4.2.2 Part A and Part B of the municipal register of properties

4.2.2.1 Part A of the municipal register of properties

The MPRA states that Part A of the municipal register of properties consists of the current valuation roll³⁰. Practitioners also use the term the “consolidated” or “billing” roll. Part A of the municipal register of properties includes all of the property records reflected in the general valuation roll, together with any changes to any record effected through objection reviews, appeals decisions, as well as any subsequent supplementary valuations prepared after the use of the general valuation

³⁰ Refer to MPRA, Section 23(2). Part A of the register consists of the current valuation roll of the municipality.

roll³¹. Section 23(5) provides that Part A of the municipal register of properties must be continually updated. Part A of the municipal register of properties remains valid for the duration of the validity of the valuation roll as the current valuation roll. Part A is the platform for both the initial preparation and the ongoing maintenance of the valuation roll. Part A of the valuation roll is also used for the integration with the municipal financial system to generate the rates accounts. This thesis investigates the operational linkages between Part A of the municipal register of properties (current valuation roll) and the municipal financial systems. The definition of Part A of the municipal register of properties consisting of the current roll requires careful clarification. It is a common misperception that the municipal register of properties and the valuation roll are separate and distinct. There is also misinterpretation that the municipal registers of properties are the property master file, or the valuation roll GIS cadastral layer, neither term is provided for in the MPRA. Part A of the municipal register of properties is the current valuation roll (author's own emphasis), as provided in section 23 of the MPRA.

Practitioners preparing the municipal register of properties are required to denote each individual property parcel with a unique identifier. The expanded SG 32-digit code³² should be used to denote each property record as the recommended naming standard. Property data required for the preparation of general valuation rolls is drawn from various sources. These datasets³³ include deeds data for the registered ownership details, financial system data to link the valuation roll record to the financial systems account details, building plans showing the nature and extent of the improvements, spatial cadastral data indicating the physical or spatial location of the property, and land use management or town planning data that detail the permitted use of the property, etc. The deeds data may be referred to as the registered layer or the legal cadastre if the municipal register of properties is presented spatially.

Accurate property data is an asset to a municipality. All data produced by the valuers and the data collectors as they prepare and maintain Part A of the municipal register of properties, or the current valuation roll vests with the municipality concerned. This provision is explicitly provided for in Section 85 of the MPRA, dealing with copyright of valuation rolls and other data³⁴. Ackerman *et al*/ (2022, p. 214) contend that:

“The timing of the transfer of the data is often a bone of contention. The municipality should have access to the documents and data as soon as it is compiled, even if it is not the final version. Data must be shared from day one.”

³¹ Refer to the schematic illustrated in Figure 4.1.

³² See Section 3.3.3 for the recommendations regarding the expanded SG 32-digit code.

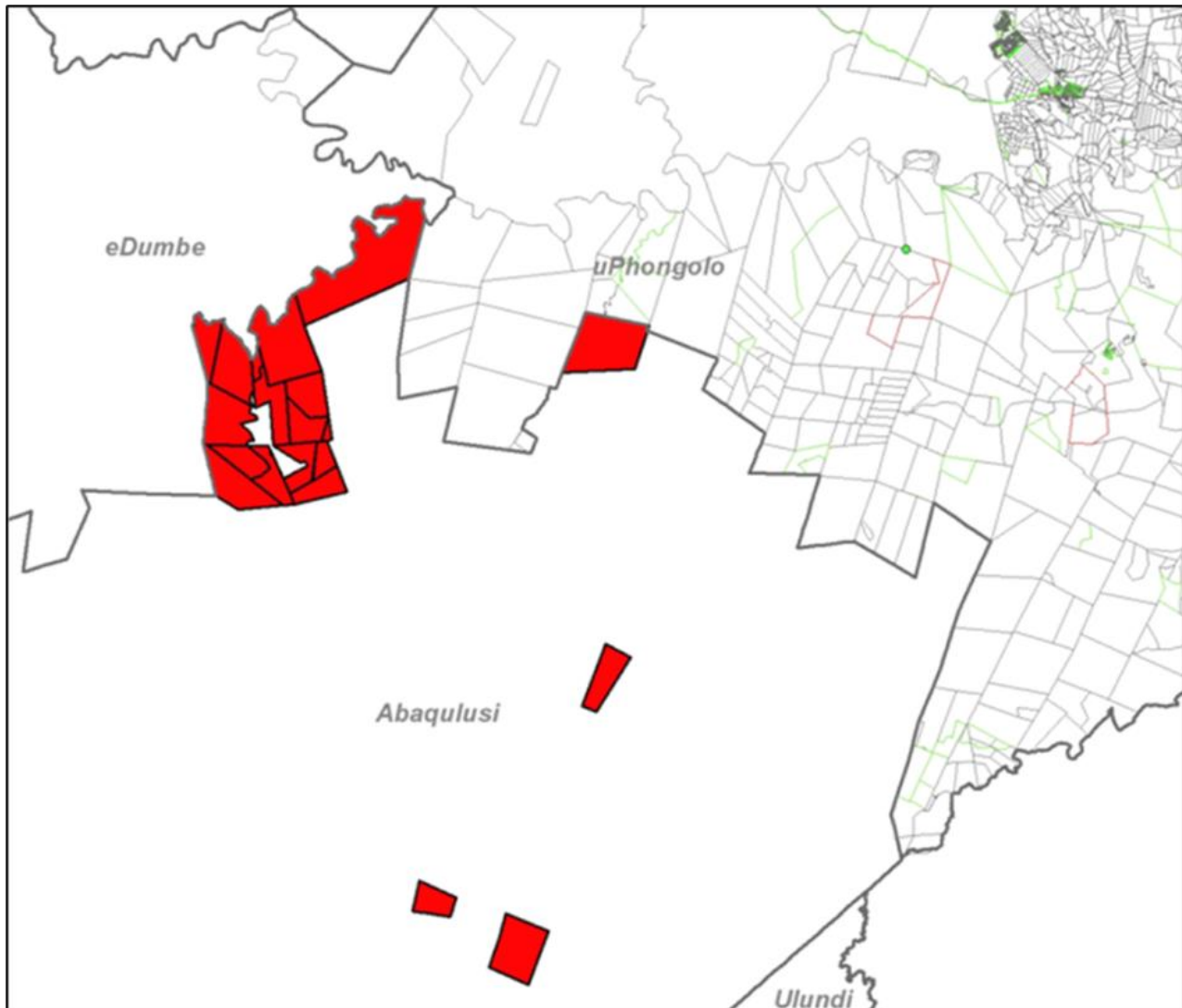
³³ See Section 3.1 for the legislative review of the input datasets for municipal registers of properties.

³⁴ See Section 4.2.1, for the legislative review of copyright.

The provision to hand over the project data to the municipality is frequently misunderstood or deliberately ignored by certain valuation service providers, who exit their municipal contracts with the entire complement of the project's property data. A ready excuse regarding why the GIS data is not handed over by the exiting valuers is that the municipality does not have an in-house GIS resource. Where a municipality fails to receive or take ownership of the full property datasets, they risk adding considerable cost of the preparation and maintenance of all subsequent valuation rolls. Without appropriate monitoring or adequate penalties, valuation of these service providers is likely to perpetuate this poor professional conduct. The recommendation is that the property and valuation data is retained by the respective municipality. This affords the newly appointed valuation service provider the opportunity to verify, update and fill in any data gaps. This iterative process will enhance the currency and completeness of the data as a municipal asset. This practice will also avoid incurring repeated costs of property data collection for the purposes of recurrent property taxation. Without a firm set of industry standards implemented by an oversight authority with commensurate enforcing authority, it is unlikely that this status quo will alter.

A further inconsistency is that with the lack of prescription for the municipal registers of properties to be geospatial, municipal valuers may assign their own unique identifiers to the various property records. This poses a risk for the interoperability of the municipal registers of properties. Such valuer-generated identifiers cannot be linked to any other datasets and have limited utility. In addition, valuer-generated naming protocols are a challenge when uploading the current valuation roll (Part A of the municipal register of properties) into the municipal financial systems to generate the municipal accounts. A further implication of the legislator's omission to provide for spatial data in the municipal register of properties is that neither the municipal valuer nor the municipality have a mechanism for discerning whether the tax coverage is complete or accurate. Such verification is easily achieved through mapping or the use of spatial reporting to show omissions or duplications or where properties fall outside the municipal boundaries. The ease of this application is illustrated in Figure 4.2, whereby the property records outside the municipal boundary are immediately recognisable. A similar exercise using a tabular register or a spreadsheet may not be as efficient.

Figure 4.2: Illustration of municipal boundary issues



Source: Author's own extract from a geospatial municipal register of properties.

A further challenge is experienced when municipal valuers appointed to prepare general valuation rolls only use the deeds data as the foundational dataset upon which to prepare the valuation rolls. Such an approach is informed by Section 24 of the MPRA that states that the registered owner of a property is liable for the payment of rates. This further illustrates the inconsistency in the understanding of municipal registers of properties and valuation rolls. The risk of using the deeds as the foundational dataset is twofold: That the deeds data used by the municipal valuer may be outdated, or that the deeds data may be misaligned with the active account holders recorded in the municipal financial system. Such misalignment may only be revealed when the certified valuation roll is uploaded to the financial system to generate the rates accounts.

Despite the contract specifications for the preparation of a valuation roll, appointed municipal valuers frequently circumvent the acquisition of deeds data. This is achieved by using the ownership or account details contained in the financial system as a proxy for the registered data obtainable from the Deeds Office. This strategy has cost saving advantages, but the practice is not condoned. Public sector procurement is driven by price, so this strategy is an option for reducing the fixed cost

of bid submissions for the procurement of services to prepare and maintain valuation rolls. Risks include the assembly of incomplete ownership details. Any historic omissions of property records may be perpetuated with the inevitable revenue slippage for the municipality. There are usually explicit bid specifications for the appointed vendor to procure the deeds data. However, without informed contractual management by municipalities, the procurement of the deeds data remains unmonitored.

Emerging good practice in the industry is that the municipal financial datasets containing the active or current account holder details (both registered owners and tenants) are included as input property data in the assembly phase of the municipal registers of properties. This operational good practice emphasises the need for a naming standard to enable data interoperability and the potential extension of the current role of the municipal registers of properties beyond solely providing coverage for property rates.

The finding from the previous paragraphs is that the property information should be managed by the municipalities themselves. In other words, the custodianship for Part A of the municipal registers of properties should vest with each municipality, or a shared responsibility between a group of municipalities. This would enable successive designated municipal valuers to prepare new general valuation rolls and supplementary valuations using the property datasets in Part A of the municipal registers of properties. The proposed shift in responsibility from the valuation service providers to the municipality would lower the cost of preparing successive general valuation rolls. Property data collection for the preparation of new general valuation rolls would be limited to collecting current market data, data verification and gap filling rather than re-commencing property data collection from scratch. The proposed reform would also address coverage or the inclusion of all of the property parcels in the municipal area in the municipal register of properties. In my opinion, this function should be entrenched as a municipal function.

Section 8(1) provides for differential rating, whereby a municipality may levy different rates for different categories of rateable property in terms of the criteria set out in their respective rates policies. The relevant amendment of the MPRA was enacted on 1 July 2015 in terms of the Local Government: Municipal Property Rates Act. Amended in 2014 (Act 29 of 2014)³⁵ it became operational on 1 July 2021, the determination of categories of properties was discretionary. Both metropolitan and local municipalities determined categories of properties that reflected their local economic profiles. From 1 July 2021, the amended Section 8(2) prescribes categories of property. These include residential, commercial, industrial, agricultural, public service infrastructure³⁶, mining properties, properties owned by public benefit organisations, properties owned by an organ of state and used for public service purposes³⁷ and properties used for multiple purposes.

³⁵ Published under Government Gazette 38259, 28th November 2014.

³⁶ Public service infrastructure is defined as publicly controlled infrastructure.

³⁷ Public service purpose property means property owned and used by an organ of state.

Properties allocated to a multiple purpose category of property are properties with more than a single land use. Properties used for multiple purposes must be valued through apportioning the value, once determined, across the different uses and assigning the respective tariff to each use, according to Section 9 of the MPRA. There is debate within the valuer profession as to whether the apportioned value methodology used for multiple purpose properties achieves a determination of market value on the prescribed basis of valuation. This debate is merely noted but not interrogated for the purposes of this thesis.

Public service purpose properties are defined by a closed list as properties owned by the state and used by the state. This closed list includes hospitals, clinics, schools, pre-schools, childhood development centres and further education and training facilities, libraries, (provincial and national), police stations, correctional facilities and courts of law. According to Section 8(3), the final prescribed category of property is vacant land. This category of property includes all vacant land in a general plan irrespective of its permitted use. All property outside of a township general plan, a layout with erven and streets, is considered agricultural land. While the issue of valuing and rating vacant land is considered a significant issue both locally as well as internationally, this is not the focus of this thesis. This aspect could possibly be considered for future research.

Certain additional categories of property may be included in municipal rates policies, provided these do not circumvent the prescribed categories identified in Section 8. Municipal-owned property is included as an additional category of property. This inclusion enables the municipality to comply with the provisions of Section 30(3), that all properties must appear in the valuation roll, irrespective of whether they are rateable or not. Municipal-owned property is non-rateable, unless through separate provisions of a lease or management agreement with a third party. Impermissible categories of property are included in Part A of the municipal register of properties as additional categories of properties. These include constitutionally impermissible and other impermissible rates such as places of public worship, formally protected areas, as well as proclaimed heritage sites. Section 17 provides details of all impermissible properties.

The MPRA enables differential property rates to be levied to the different categories of property. The differential tariffs are determined annually by the municipality - not the municipal valuer. These tariffs may be combined with discretionary rates relief assigned to categories of property and categories of owners defined in the municipal rates policies. The municipal financial system provides the functionality to multiply the respective tariffs (rates and rates relief) by the market value for every property record in the current valuation roll (Part A of the municipal register of properties) to calculate each respective property rate. Ratepayers receive consolidated monthly municipal accounts that detail the separate amounts due for property rates and utilities. The utilities portion of the account is calculated on availability charges and actual consumption.

There are further legislative requirements for differential rates tariffs. Such tariffs must be cognisant of the prescribed ratios for certain categories of property³⁸ (Republic of South Africa,

³⁸ As outlined in MPRA Regulation No 33016, 12 March 2010.

2010). The prescribed ratios are benchmarked against the residential tariffs. Compliance with these prescribed tariff ratios is routinely monitored by provincial and national COGTA departments. The maximum rate that a municipality may strike for agricultural properties, properties owned by registered public benefit organisations and public service infrastructure is a rate of 25 percent of the rate determined for residential property, i.e. a rates ratio of 0.25 against the rate set for residential use. It is anticipated that a further regulation will also promulgate a prescribed ratio for properties used for a public service purpose.

Once the property data has been collected the designated municipal valuer selects an appropriate valuation methodology to determine the market value of each property in the municipal register of properties. Section 46(1) prescribes market value as the basis for general valuation of rateable property. Market value is defined in the MPRA as the amount that the property would have realised if sold on the date of valuation in the open market by a willing seller to a willing buyer. The MPRA requires the municipal valuer to consider the actual or permitted use or a combination of both in the determination of market value. The provisions for the general valuation of rateable property also include the date of valuation. Section 31(1) requires the municipality to adopt a date of valuation through a council resolution within 12 months of the start of the financial year in which the valuation roll is first implemented. The municipal financial year runs from 1 July through to 30 June that is across two calendar years.

The valuation methodology or mass appraisal techniques for rating are not prescribed by the MPRA. Section 45(1) refers to generally recognised valuation practices, methods and standards, and the provisions of the act. Market value requires sales evidence to support its determination. A lack of evidence or inadequate market evidence pressures the municipal valuer to use proxy sales or an alternate method to comparable sales analysis. In metropolitan municipalities with mature real estate markets, the market approach is appropriate. However, in many of the rural and remote B3 and B4 municipalities³⁹ inadequate sales evidence and/or the presence of informal property markets force consideration of whether market value is the only option for determining values for the purposes of recurrent property taxation. In my opinion, the MPRA sets the bar for legislative compliance unrealistically high prompting investigation into whether a single uniform system of property rates for the whole country is appropriate. Franzsen (2022) poses this research question in his article “Should market value be retained as the only tax base for municipal property rates in South Africa?” Franzsen contends that there are legislative provisions in Section 45(3) for using a mass valuation system or technique, if this is approved by the municipality. An alternate approach may be based upon predetermined bands of property values and the designation of the different property records to one of these value bands. Such a technique requires minimal market-related data. Franzsen (2022: 22) recommends that a cost-benefit analysis of the alternate approaches to market value property rating is undertaken stating that:

³⁹ The classification of municipalities from A (metropolitan municipalities) as well as B1; B2; B3 and B4 (local municipalities) is discussed in Chapter 1.

“The current market value system is simply not appropriate for all local municipalities. Furthermore, pragmatic approaches applied in other countries or jurisdictions suggest that there are solutions to the problem.”

Franzsen (2022) suggests, based on his review of the available alternatives, that an adjusted area-based system along the lines of a point-based or self-assessment system may be a more pragmatic and cost-effective approach. This approach is proposed as relevant and cost-effective for rural B3 and B4 municipalities with extensive tracts of communal land and limited formal property transactions. Irrespective of the value-approach, the municipal register of properties remains essential for the provision of coverage.

Although property is immovable it is dynamic, in other words, it changes. For example, property is bought and sold, subdivided, or consolidated, buildings are constructed on vacant land and derelict or obsolete fixed improvements are demolished. New townships transition from agricultural land and are laid out with streets and erven, inner cities decay. Each of these changes affects the market value of the property. The MPRA accommodates changes to the market value of properties in Part A of the municipal register of properties (current valuation roll) through the preparation of supplementary valuations. The maintenance of the valuation roll enables every property in the valuation roll to continue to reflect the market value of the property as at the date of valuation for the duration of the roll's validity period. The preparation of supplementary valuations is also referred to as valuation roll maintenance. The work processes included in updating the valuations for properties whose attributes have changed is discussed more fully under the operational considerations, refer to Section 4.6.

Having addressed the legislative requirements for Part A of the municipal registers of properties the next section reviews Part B.

2.2.2.2 Part B of the municipal register of properties

Part B of the municipal register of properties⁴⁰ is, in my opinion, the least understood component of the municipal register of properties. Section 23(4) of the MPRA provides that the register, that is Parts A and B, must be available for public inspection during office hours, as well as displayed on the municipality's official website. To provide context to Part B's compliance requirements, municipalities must draft and review their rates policies⁴¹ annually. Rates relief may be extended to the different categories of property through exemptions, rebates (discounted rates) or reductions in the market value of the selected properties. Municipalities must balance the extension of discretionary rates relief to vulnerable households with considerations of municipal affordability.

In addition to rates relief for categories of property, Section 15(2) of the MPRA enables municipalities to extend discretionary rates relief to specific categories of owners of property from

⁴⁰ See Section 4.6.2.8 Part B, legislative review of the municipal register of properties.

⁴¹ See Section 4.2.1.1 for the legislative review of Part A and Part B of the municipal register of properties.

the payment of rates. This relief may be through a rebate (discount), a reduction in the market value of their properties to reduce the rates payable, or an exemption from the payment of rates. The specific categories of owners of properties are contained in a closed list in Section 15(2) of the MPRA. These include indigent owners, Section 15(2)(a), owners dependent upon pensions or social grants, Section 15(2)(b), owners who are temporarily without income, Section 15(2)(c), owners whose properties have been affected by a disaster or adverse social or economic conditions, Section 15(2)(d) and owners of residential properties with a market value lower than the amount determined by the municipality or owners of agricultural property who are bona fide farmers, Section 15(2)(f). All income foregone through discretionary rates relief must be reported in the municipality's annual budget in terms of Section 15(4) to be monitored by National Treasury.

In terms of Section 17(1)(a) to (i) of the MPRA, the rating of certain categories of property are defined as impermissible, i.e., categories of properties where rates are disallowed. These include places of public worship (zero rated), public infrastructure (where the first 30 percent of the market value of the properties is excluded), and the reduction of the first R15,000 from the market value of all residential properties, amongst others. Land reform beneficiaries are exempt from the payment of property rates for a period of ten years from the registration date. Should the land reform beneficiary alienate the property before the 10-year period expires, the balance of the impermissible rating period is not transferable to the new owner.

The final legislative provision informing property rating is the prescribed ratios. MPRA Regulations, No 32061, 27 March 2009, prescribe the rates on categories of non-residential property that may not exceed the ratio to the rates of residential property by 1:0.25. The categories of non-residential properties include agricultural properties and properties used for public service infrastructure. Public benefit organisations used for humanitarian, health care and education and development are also protected by the prescribed ratio that limits the tariff to 0.25 of the residential tariffs⁴² (Republic of South Africa, 2020).

There are various interpretations of the reporting requirements for Part B of the municipal register of properties. Despite this being defined in the MPRA as a statutory report⁴³, Part B is not rigorously monitored by either the national or provincial CoGTA departments. Ackerman *et al* (2022:101) note that “Emfuleni Local Municipality may be the only municipality that has part B of the register of properties on its website”. To generate a record-by-record Part B report, the current valuation roll, Part A of the municipal register of properties must be integrated with the municipal financial system. The compilation of the Part B report requires access to the relevant tariff codes in the municipal financial system used to calculate the differential property rates. The risks to municipalities when the municipal valuer submits the valuation roll on a spreadsheet, or if the municipal valuer's valuation

⁴² Government Gazette 33016, Amendment to the MPRA Regulations, Government Notice, March 2009.

⁴³ MPRA, Section 23(5): A municipality must at regular intervals, but at least annually, update Part B of the register.

roll management system is deployed externally to the municipality's ICT environment are reviewed in Section 4.5.

The next set of input data required for the assembly and maintenance of the municipal register of properties is the municipal financial data. This is reviewed from the perspective of the provisions of the Local Government: Municipal Finance Management Act, ("MFMA").

4.3 LOCAL GOVERNMENT: MUNICIPAL FINANCE MANAGEMENT ACT, ("MFMA")

Municipal finances are regulated through the MFMA. The preamble to the MFMA states that this legislative framework prescribes sound and sustainable management for the local government's financial affairs. National and provincial treasury departments are responsible for supervising the use of the MFMA.

Complete and correct property rates billing is achieved when a municipality aligns all the accounting records in the municipal billing system with the records included in Part A of the municipal register of properties, the current valuation roll. Part A of the municipal register of properties or the current valuation roll is uploaded to the integrated municipal financial system with the relevant valuation records. The respective differential tariffs are applied to each property record according to its category of property. This assessment amount less any discretionary rates relief is what is due and payable by the registered property owners as property rates to the municipality. Inadequate systems, poor work processes and incomplete or inaccurate data may contribute to inefficient rates revenue. This thesis poses the question as to whether the municipal register of properties may be an effective reporting instrument in the prescribed municipal financial processes.

As referenced in the literature review in Chapter 2, various authors including Bahl and Bird (2018), Kelly (2000) and Franzsen and McCluskey (2017) highlight the importance of the completeness of the property inventory or coverage. To investigate the coverage of property rates a limited sample of variously classified (B1-B4) municipalities, 10 in total, was conducted. Data was extracted from National Treasury's Municipal Money portal (mSCOA data). The data extraction relates to the period, circa 2022, during which municipalities procured integrated financial systems through the national transversal, RT 25⁴⁴. No metropolitan municipalities are included in the sample. The municipalities within the sample had used the national transversal to procure new integrated financial systems. As with any data migration certain challenges were experienced. In this survey data was extracted from the financial system, the current or billing valuation roll and reported against the spatial municipal register of properties. In theory, records in these three datasets ought to align on a record-by-record basis. The analysis indicated mismatches between the financial system and the valuation roll and, yet more worryingly, property records in the spatial dataset that were in neither the financial nor valuation roll. The latter indicates that these municipalities omitted these property records entirely from both the valuation roll and the financial system. There is a high probability that neither property rates nor utilities are being billed for these properties. Such data analyses enable

⁴⁴ Refer to Section 4.3.1 for details of the national transversal procurement mechanism.

remedial action plans to be developed. Once the remedial plans are successfully implemented, full coverage and complete billing may be achieved for both property rates and utility consumption. The survey results illustrated in Table 4.1 indicate that between 10 and 45 percent, or an average of 21 percent of the municipal base datasets required remedial action. It is acknowledged that this is a limited sample and that further broader analysis is required with the remedial action identified per municipality for this to be a meaningful exercise.

Table 4.1: Analysis of financial, current valuation roll and GIS property data.

Municipality classification	Total number of property records	Total discrepancies between the financial system, valuation roll and spatial register	Remedial action required to achieve full coverage (%)
B1	87,009	13,394	15%
B1	73,121	15,478	21%
B1	68,764	14,323	21%
B2	47,629	22,018	46%
B3	18,498	6,674	36%
B3	16,224	2,508	15%
B3	15,860	1,571	10%
B4	9,398	539	6%
B4	4,189	998	24%
B4	9,710	1,522	16%
		Average discrepancies	21%

Source: Author's own analysis using data extracted from National Treasury's Municipal Money portal.

This survey illustrates the risks attributable to imperfect coverage for property rates, as well as incomplete utility billing, both important sources of municipal revenue. These revenues are directly linked to municipal financial sustainability. Municipalities are required to respond to the needs of their communities and to foster a culture of both accountability and transparency. They have fiduciary responsibilities to remain solvent and to manage public monies in the short, medium and long term to meet their constitutional objectives. A municipality's constitutional mandate is to deliver at least a minimum level of basic services to all community members. Section 27 of the Local Government: Municipal Systems Act 32 of 2000 (hereafter "Systems Act") provides a framework for integrated development planning, whereby each district municipality after following a consultative process with the local municipalities in its area, adopts a framework for integrated development planning in the

area. The Integrated Development Plan projects a 5-year horizon for all planning projects in the local municipalities and, collectively, the district municipalities under which the locals fall.

As indicated in Table 1.1, municipalities in South Africa are classified in terms of their size and capacity⁴⁵. Higher capacity municipalities and metropolitan municipalities (A and B1; B2) with a greater tax base may generate proportionately more rates revenue than poorer, more rural municipalities (B3; B4). The latter have a higher dependency on grant funding. The provision of grants to municipalities does not necessarily ensure the sustainability of municipalities or how effectively and efficiently these funds are disbursed and administered (Oosthuizen & Thornhill, 2017). There are stringent consequences – enforced, at least in principle, by National Treasury for municipalities who underutilise or misuse these funds (e.g. due to maladministration and corruption). Municipalities are required to prepare annual financial statements that fairly present the financial position of the municipality, its respective performance against its budget and the management of its municipal resources. Generally recognised accounting practice (GRAP)⁴⁶ standards are used in South Africa. The annual municipal financial statements must be submitted to the Auditor General⁴⁷ annually by 31 August. The annual audit report forms part of the overall annual report recording all of the activities and performance of the municipality.

Mahabir and Mabena (2015) highlight two types of intergovernmental fund transfers: general purpose (conditional) and specific purpose (general purpose) grants. Conditional grants are often used for capital expenditure, to address gaps where the costs exceed revenue generated. Equitable shares from the central government consider demographic and developmental aspects of each province or municipality. Municipal councils are authorised to develop credit control and debt collection measures for property rates and other service charges. The Systems Act allows municipalities to collect money due and payable to their councils. Municipal financial management includes budgeting, revenue, cash and expenditure management, procurement, asset management, and reporting and oversight. The Municipal Financial Management Act (MFMA) provides the framework for regular and consistent reporting, ensuring accountability for public finances. Municipal budgets must be transparent, with the community involved in the adoption of the annual budgets.

Each municipality has the discretion to establish their own rating tariffs and levy their own property rates, provided these remain within the provisions of the MPRA and the MFMA. National Treasury issues budgetary circulars to provide guidelines regarding the increase limits for the total revenue per annum. Typically, the annual national inflationary index informs this escalation. The MPRA's Section 20(1)(b) places limits on annual increases in rates. The Minister of CoGTA may, with the

⁴⁵ See Section 1.1 for description of municipal classifications.

⁴⁶ Generally Recognised Accounting Practice or GRAP is a set of fundamental concepts that serve as accounting process guidelines. However, unlike GAAP, they apply to the public sector. GAAP stands for Generally Accepted Accounting Principles. The term 'GRAP' is common in South Africa.

⁴⁷ See Section 5.5.5 for the review of the Auditor-General's monitoring function.

concurrence of the Minister of Finance and by notice in the Gazette, set an upper limit on the percentage by which the total revenue derived from rates on all property categories, or a rate on a specific category of properties may be increased.

The selection of an appropriate rate for the differential rating per category of property accommodated in the MPRA is guided, according to the Toolbox on Local Government Finances and Budgets, Education and Training Unit for Democracy and Development (2016), by four main factors:

- affordability,
- impact on business,
- extent of cross subsidisation, and
- rates relief.

Differential rating for different categories of property is calculated by multiplying the market value of the property by the respective tariff or rate randage determined for the respective category of property. The financial system applies the selected tariff to the property record from Part A of the municipal register of properties - the assessment value of the property and the category of property. While the municipal valuer determines market value and the allocation of categories of property based on its actual use, the municipality is responsible for determining differential tariffs and determining discretionary rates relief based upon the applicant's eligibility and affordability factors that are determined annually by council. In terms of Section 102(1)(a) of the Systems Act, property rates are combined with the utility and refuse collection charges and consolidated on the ratepayer accounts. This provision is intended to smooth cash flows for municipalities towards improving municipal financial sustainability.

National Treasury introduced a series of business reforms to standardise financial data structure, reporting formats and business processes for all municipalities known as mSCOA. The next section reviews mSCOA from a legislative and institutional and operational perspective focusing on the potential role of the municipal registers of properties to support municipal financial reporting.

4.3.1 Municipal Standard Chart of Accounts ("mSCOA")

mSCOA is the commonly used acronym for the standard chart of accounts contained in the MFMA Regulation No. 37577, 2014, effective from 1 July 2017. These regulations prescribe uniform financial reporting, standardise financial processes and aim to improve municipal data integration. The objectives of these reforms support municipal financial sustainability. In addition, and of specific interest to this thesis, mSCOA's Regulations make the integration of municipal systems mandatory. The integration of the VRMS and the financial systems is discussed under the operational review⁴⁸. I do not comment on the financial reporting standards.

⁴⁸ Refer to Section 4.6 of this chapter for the operational review.

Municipal financial systems dominate municipal systems architecture. Circular 80, 2016, issued in terms of the MFMA, prescribes the minimum requirements for the full seamless integration of valuation roll management systems (including the municipal register of properties) with the financial systems. The driver for this requirement is compliance with the seamless integration for correct and complete billing. National Treasury Circular 93, 2018, prescribes periodic reconciliation between the datasets in the financial system and the current valuation roll, Part A of the municipal register of properties. This oversight enables National Treasury to review the anomalies between these two municipal datasets, as well as identify any remedial action required to achieve a record-by-record match.

A further aspect of the mSCOA Regulations with specific relevance to this thesis is the prescription of the core municipal financial system and all associated business processes to report against 7 prescribed mSCOA reporting segments. These processes include the seamless transactions across the seven segments and the extraction of data for all segments through the web-enabled municipal data portal hosted by National Treasury. The mSCOA Regulations make it mandatory for a municipality to have adequate ICT and infrastructural systems to process the prescribed systems solutions. Information technology is commonly understood as the use of computers to store, retrieve, transmit and manipulate data in an organisation.

All municipal transactions are reported against the extensive mSCOA chart. Version 6.8 of the mSCOA chart includes over 4,500 data strings in the classification framework. Municipal financial transactions are reported against the following prescribed mSCOA segments: The source of the funding; the function against which the transaction should be recorded; the nature of the transaction: asset, expenditure or loss; the regional indicator to which project the item should be recorded; the impact of the item on cost drivers, tariffs and tariff structures, and lastly the discretionary municipal classification that denotes against which organisational vote (budget) the item should be recorded. This final reporting segment is optional. Of relevance to the municipal register of properties is the regional reporting segment. This denotes where a revenue transaction is generated or where a municipal expense is incurred. This segment identifies and assigns municipal transactions to the lowest relevant geographical region as prescribed. The appropriate classification code is determined according to the defined geographical area within which the intended beneficiaries who are deriving the benefit from the transaction, whether this is a service or capital investment, are located. The currently prescribed reporting level is ward level⁴⁹.

To achieve successful regional segment reporting, municipalities require complete, accurate and current geospatial registers of properties. The mSCOA Regulations refer to Section 23 of the MPRA without further explanation. The MPRA does not prescribe that the municipal registers of properties should be geospatially presented. The geospatial component is required for successful regional segment reporting to enable mSCOA compliance. The omitted prescription for spatially assembled

⁴⁹ A ward is a geopolitical subdivision of a municipality that is used for electoral purposes. Each metropolitan and local municipality is delimited by the Municipal Demarcation Board.

municipal registers of properties is a finding that necessitates a legislative reform by either National Treasury or by CoGTA. This omission leaves the prescription of the MFMA regional segment reporting unclear and potentially compromised, should a municipality only have access to a tabular municipal register of properties. A further disjuncture occurs between the mSCOA chart, Version 6.8, that prescribes mSCOA classifications for the various categories of property and the categories of property prescribed in Section 8, MPRA.⁵⁰ This disjuncture between the MPRA and the MFMA are noted from a legislative perspective in this section. The operational implications are reviewed in Section 4.6.

Various financial systems are deployed by municipalities. National Treasury is empowered to evaluate the different financial management systems and to recommend appropriate improvements (Section 5(2)(d) of the MFMA). A comparable study undertaken by National Treasury in 2019 indicated inherent advantages and disadvantages to each of the evaluated municipal financial systems. The study concluded that it is beyond National Treasury's prerogative to prescribe the use of any single system to municipalities. The lack of system uniformity poses challenges for data interoperability. These include the lack of standardised data structures across the different financial systems. Even different versions of the same financial system include various data configurations.

Not only are municipalities required to assemble municipal registers of properties, but they are also obliged to maintain these registers. The MPRA requires that municipal registers of properties are updated as the property attributes change. Examples of attribute changes include, but are not limited to, subdivisions, consolidations, establishing new townships from agricultural land, rezoning and the issuance of building completion certificates. Attribute changes trigger instructions for supplementary valuations to be prepared in terms of Section 78 of the MPRA whenever necessary. A change in property attributes has implications for change to the value of the property. These updates are captured into the current valuation roll, Part A of the municipal register of properties, to maintain coverage and equitable recurrent property taxation. The municipal valuer must prepare supplementary valuations to reflect the changes to the property value whenever necessary. Changes to the property values require changes to municipal billing. Part A of the municipal register of properties must be updated with the supplementary valuation and the financial system must recalculate the rates payable to be issued on the municipal account. Ownership changes do not prompt the preparation of a supplementary valuation. Changes to the owner's and account details linked to the respective property record in the financial system and the current valuation roll should be amended. All these changes are best achieved through the automated integration of the financial system with the system responsible for the management of the current valuation roll, the valuation roll management system.

To support the procurement of integrated financial systems with the functionality required for mSCOA compliance, National Treasury undertook an evaluation of various integrated systems

⁵⁰ Refer to Section 4.2.1.1 for details of the prescribed categories of properties required for differential rating in the MPRA.

available to local government in South Africa in 2022. The outcome of the project was the establishment of a panel of evaluated systems from which municipalities could procure their preferred system. This procurement provision, referred to as a transversal bid, enables municipalities to procure without having to embark on their own procurement processes. The transversal bid specifications provided for a Valuation Roll Management System (hereafter “VRMS”) as a module in the systems of internal control. The transversal specifications placed the municipal register of properties as a database component in the valuation roll management system module. Financial system vendors participating in the transversal bid concluded third party agreements with VRMS vendors. It is notable that none of the existing financial systems included a valuation roll management system as embedded functionality. File transfer protocols or automated programmatic interfaces were developed to enable data to transfer seamlessly between the respective systems, the financial system and the VRMS.

A concerning administrative ambiguity established by National Treasury extended discretion for smaller, less capacitated B4 municipalities to procure the municipal register of properties, that is the register without the VRMS. This variation was motivated as a cost-cutting strategy. In my opinion, scant attention was paid to how the B4 municipalities, who elected to limit their procurement to the register of properties, would integrate their current valuation rolls with their financial systems. This directive from National Treasury serves to illustrate the pervasive misunderstanding about the role of Part A of the municipal register of properties as the current valuation roll. The resultant scenario is that, should a B4 municipality choose to exclude the VRMS, then the valuation roll may be delivered to the municipality as a Microsoft Excel file. It is my opinion that while not derogating from the qualities provided by Microsoft, this adds the risk exposure of data slippage and/or file corruption to the smallest and most vulnerable municipalities.

As the transversal bid’s validity for the procurement of integrated financial systems expired on 30 June 2022, municipalities may now procure integrated financial systems through their own supply chain management processes. These bid specifications include the provision of a valuation roll management system as a module of the integrated financial system. The municipal register of properties is retained as a scope in the valuation roll management system. Given that the updating of the valuation roll is through the municipal register of properties, I contend that the valuation roll management system should be a function of the municipal register of properties. It is currently conversely configured in the bid specifications for an integrated municipal financial system. There is also an alternate procurement option for the VRMS, namely through the procurement of the services of a valuation company to prepare and maintain the valuation roll. This option has implications for municipalities that are reviewed in Section 4.5.

The final section of this legislative review addresses Protection of Personal Information Act 4 of 2013 (“POPIA”), relatively newly promulgated legislation with material implications about how data may be presented within the public domain.

4.4 PROTECTION OF PERSONAL INFORMATION ACT 4 OF 2013 (“POPIA”)

POPIA places certain obligations on the responsible party, that is the body ultimately responsible for the lawful processing of personal information. Municipalities are the custodians of considerable personal information about ratepayer’s property ownership, financial and account details. Provisions in the MPRA (Section 23(4)) require the current roll, the municipal register of properties, to be published on the municipal website. Section 49(2) provides that both the notice and the published valuation roll be displayed on the municipality’s operational website. Section 48(2) prescribes the contents of the valuation roll as (a) the description the property, (b) the category of property, (c) the physical address, (d) the extent of the property, (e) the market value of the property, (f) the owner’s name are published in the certified valuation roll. These particulars include personal information. Section 50 of the MPRA states that the published valuation rolls must be open for inspection during office hours.

A National CoGTA Circular, issued in November 2023, advises that sensitive personal information should be redacted (i.e. hidden) or edited from the published valuation rolls, the valuation rolls within the public domain. This, in my opinion, detracts from the legal requirement that published valuation rolls are publicly accessible documents. Notwithstanding the CoGTA Circular advising municipalities to redact the ownership details in the published valuation rolls, it is anticipated that emerging case law will clarify the position pertaining to the public accessibility of published valuation rolls and sensitivity around the privacy of property data.

It may be argued that POPIA clouds the accessibility of ratepayers to the details in the published valuation rolls. It is notable that no restrictions are placed on Part A of the municipal register of properties, the current valuation roll, that is also required to be available for public inspection.

Details about land ownership are currently publicly accessible in South Africa. POPIA recognises that everyone has a right to privacy. Section 14 of the Constitution, namely that the State, must respect, protect, promote and fulfil these rights, while Section 36 of the Constitution provides for the limitation of certain rights, for example, in the public interest. The purposes of POPIA are to promote the protection of personal information processed by public and private bodies, and to introduce certain conditions to establish minimum standards to secure this information. POPIA took effect on 1 July 2020 with the Information Regulator commencing enforcement from 1 July 2021.

The next section of this thesis addresses valuation roll management systems used to contain and manage the property data required for recurrent property taxation.

4.5 VALUATION ROLL MANAGEMENT SYSTEM (VRMS)

The MFMA’s mSCOA Circular 80, 2016, provides clarity on both the business processes and system specifications required for sound municipal financial management. This treasury circular sets out minimum standards for the integration between the financial systems and related subsystems in the municipal systems environment. The VRMS contains Part A of the municipal register of properties (the current valuation roll) or the database used to calculate the property rates. The VRMS is a related subsystem to the integrated municipal financial system. To enable mSCOA compliance,

valuation management processes must be integrated in the revenue value chain of the municipality, its billing processes and procedures. Achievement of these integrated functions necessitates the deployment of a VRMS.

The MPRA does not refer explicitly to a “VRMS” and excludes any provisions for the functionality of such a system. Given the quantum of data required for the preparation and updating of municipal valuation rolls, a VRMS ought, in my opinion, be prescribed to manage the property data. Whether this provision is directed from within the MPRA or the MFMA is immaterial. In this section I investigate emerging procurement ambiguities for VRMS, Part B of the municipal register of properties that requires a mandatory integration between Part A of the municipal register of properties (current valuation roll) with the financial system and identify possible other risks for municipalities in the absence of a VRMS in their systems environment.

4.5.1 VRMS procurement

Municipal bids calling for the procurement of valuation service providers to prepare and maintain the municipal registers of properties and valuation rolls include specifications for valuation service providers to provide a VRMS. The systems procured through these bids are typically used by the appointed valuation service providers as their preferred tool of trade. A VRMS procured through the appointment of municipal valuation service providers are usually deployed externally to the municipal systems environment. These VRMS support the appointed valuer’s bespoke valuation preparation and roll updating processes. Municipal officials do not have access to such systems.

While a VRMS may be specified within the bid specifications for the appointment of municipal valuer, the bid evaluation scorecards exclude any scoring for this scope item. This omission enables the valuation bidders to meet the criteria for bid responsiveness but continue to use Microsoft Excel for the project upon award. MP Moya, KwaZulu-Natal CoGTA, advises that:

“We fully support the use of Valuation Roll Management Systems and, as you are aware, CoGTA has made recommendations for each appointed service provider to provide such a system as part of the MPRA bid documents. This is an area that, in the future, will require close monitoring by CoGTA, as clearly some service providers are not meeting this requirement”

(Moya, 2022).

A further limitation is the scant reference to the integration requirements between the VRMS and the municipal financial system. National Treasury’s mSCOA Regulations prescribe seamless integration between the financial system and the related subsystems of which the VRMS is one.

Table 4.2 summarises commentary on the specimen bid guidelines pertaining to the VRMS specifications published by COGTA. These include the lack of provision for seamless integration with the municipal financial system. The prescribed monthly supplementary valuation roll provision for smaller municipalities with limited monthly property transactions requires review. This is considered a terminology issue whereby CoGTA’s reference to a supplementary valuation roll should be replaced with the clarification that this should be a review roll, that is a report of all the supplementary valuations prepared for that period. (The underscore is provided by the author to

emphasize the difference). The MPRA prescribes the annual publication of a supplementary valuation roll.

Table 4.2: VRMS bid specifications and review commentary

Ref #	CoGTA bid specification	Review commentary
1	The minimum, requirements of the VRMS are compatibility with the municipal billing system, the GIS system, as well as other management systems affected by the valuation process.	There is no provision for seamless integration nor mention of Automated Programmatic Interface (hereafter “API”) with the financial system. The other management systems are not identified. This is an open-ended requirement.
2	The VRMS must have an audit trail with secure access and the functionality to verify data that has an influence on value.	Clarification is required as to how the VRMS verifies data with an influence on value? These value-forming attributes are not specified. For monitoring purposes ⁵¹ the data collection data structure and property attributes to be collected should be standardised.
3	The specifications require the preparation of monthly supplementary <u>rolls</u> to maintain and update the valuation roll. Note: The inclusion of ‘ <u>rolls</u> ’ is incorrect as the MPRA only requires a single supplementary valuation roll to be published annually.	The MPRA provides for the preparation of supplementary valuations <u>whenever necessary</u> . This is an ongoing process or the validity period of the general valuation roll. No time periods are prescribed in the MPRA. The publication of a supplementary valuation roll is an annual requirement. The monthly provision for smaller municipalities with limited monthly property transactions requires review.
4	Objection and appeal processes in the specifications is omitted.	Functionality to support the objection and appeal processes should be included in the VRMS functionality.
5	Requirements for document management functionality to enable the users to attach building plans, site plans, aerial photographs, and other pertinent data to the relevant property record. The guidelines address the extraction of properties under specific filters, e.g. specific owner types, state owned properties, vacant land.	It is recommended that the VRMS includes a geospatial database. This is excluded from the VRMS specifications.

⁵¹ See Chapter 5 for the monitoring review.

6	The necessity to import data directly from the Deeds Office and to link properties from various databases using the property key number of the Surveyor General. Note: It is assumed that property key number refers to the Surveyor General's digit key.	The recommendation is for naming protocols for the unique property identifiers needs to be prescribed as the expanded SG 32-digit code⁵².
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Source: Author's own analysis of the CoGTA bid guidelines.

In conclusion, the various CoGTA bid guidelines for the VRMS should be revised to provide clearer specifications of the VRMS functionality. Most municipal supply chain management departments follow the bid guidelines closely, rarely changing any details aside from their municipal contact details and category of property totals. The procurement of VRMS in the bids for the preparation and maintenance of valuation rolls is compromised in the areas identified in Table 4.2. As the VRMS is excluded from the bid evaluation scoring sheet the VRMS has no actual bearing on the selection of the preferred bidder.

Most municipalities procure valuation services from the private sector to prepare and maintain their municipal valuation rolls. These appointed service providers operate externally to the municipality. The risk for these municipalities is that all the municipal property and roll data may reside externally to the municipal ITC environment. Municipalities are therefore exposed to the risk that their property data may leave with the valuation service provider at the end of their contract⁵³.

Incongruously, the very same VRMS may also be procured with the integrated municipal financial systems. Under this procurement route, the VRMS is specified as a module in the integrated financial system's technology stack. The prescribed functionality for the VRMS is detailed in Annexure B, MFMA Circular 80, Section 46. Seamless integration between the VRMS and the financial system is a minimum systems specification to enable mSCOA compliance. The risk to municipalities without the prescribed integration is poor property information streams, compromised workflows and probable revenue slippage. The VRMS specifications in the National Treasury bid guidelines specifies that the current valuation roll or Part A of the municipal register of properties forms the basis for the levying of assessment rates and all processes and procedures regulated by the MPRA. Furthermore, there is the prescription for the municipal register of properties to integrate information for spatial analysis in a Geographical Information System (GIS). These details are also detailed in

⁵² Refer to Table 3.2 for the review of the expanded 32-digit SG code.

⁵³ Refer to Section 4.2.1 earlier in this chapter that reviews the MPRA's copyright provisions.

MFMA, Circular 80, 2018, Annexure B – Systems specifications. These provisions underwrite National Treasury’s implicit requirement for a spatial municipal register of properties.

National Treasury has not yet undertaken an in-depth evaluation of the file transfer protocols or automated programmatic interfaces between the municipal financial management systems and other third-party systems including the VRMS. A pilot audit was conducted in 2022 on a sample of municipal systems, but the full review of the systems integration remains outstanding.

In my opinion the use of a VRMS to manage the large datasets required for the preparation of general valuation rolls, whether internal or external to the municipality, has advantages to improve business productivity and efficacies. Microsoft’s Excel spreadsheet software programme’s capacity to handle data is uncontested. The limitations to using Microsoft’s Excel includes the various municipal valuer’s individual data structures, attribute data tables, and internal relationships between the tables in the spreadsheets that contribute to the preparation of the final valuations. Without standardising data structures and metadata, the current valuation databases prepared in Microsoft’s Excel are likely to have limited utility for either the municipality or any successive valuation service provider.

A further practical disadvantage of using the Microsoft platform is the audit limitations regarding changes made to property valuations and/or property category data fields. The municipal valuer’s designation affords him/her the responsibility of making these changes. These material changes must be audited and reviewed against the legislative provisions. Such changes cannot be tracked nor audited in a spreadsheet and, furthermore, only a single user can work on the spreadsheet at any one time. The advantages of using a VRMS enables multiple users’ simultaneous access to property and valuation information. If a VRMS is deployed, both the municipality and the valuer’s office, have real-time access, thus improving communications, streamlining business processes and customer service. Moreover, the VRMS records all changes against the respective user in an auditable log.

The next section reviews the necessary integration between the VRMS and the municipal financial systems. The municipal financial systems are responsible for financial processes, arguably the centre of all municipal business.

4.5.2 VRMS integration with the financial systems

A municipal valuer must prepare a general valuation roll and then, whenever necessary – that is whenever there is a change to a property attribute that invokes a change to the value of that property - prepare subsequent supplementary valuations. Despite the current valuation roll, Part A of the municipal register of properties being the source data for all valuations, certain irregularities are common.

The following paragraphs identify probable risks for municipalities where their appointed valuation service providers work outside the municipal ITC environment. Such risks include the generation of the final version of valuation rolls, especially the general valuation roll, external to the municipal systems. The final printed version of the valuation roll is certified by the municipal valuer and signed

by the municipal manager, date stamped and lodged in the municipal registry as the certified document. Further risks include the contents of the statutory Section 49 notices advising registered owners of the contents of the valuation roll pertaining to their property, and the eventual billing reflecting different details to the property records in the published, certified valuation roll. Mitigation of these irregularities necessitates that valuation rolls are generated from the VRMS that integrates seamlessly with the municipal financial system. This is a minimum municipal systems requirement prescribed in the Treasury Regulation, namely MFMA Circular 80. As mentioned previously, compliance with this regulation remains un-monitored.

Part B of the municipal register of properties⁵⁴ is an annual statutory report reflecting discretionary rates relief and impermissible rates applied to identified property records in the current valuation roll, Part A of the municipal register of properties. Seamless integration between the financial and valuation roll management system enables municipalities to extract Part B as a standard report. If the municipality's financial system and the VRMS are not integrated, the generation of Part B becomes a manual exercise with the inherent risks attached. Part B is not easily attainable for municipalities accepting valuation rolls as spreadsheets from their municipal valuer. Externally prepared spreadsheets lack the programmatic linkages with the municipal financial systems containing the necessary tariff codes denoting discretionary relief per property record required for the annual Part B municipal register report.

In my opinion, inadequate systems integration will be perpetuated until there is a focused and meaningful evaluation of the functionality of the various VRMS by either CoGTA or by National Treasury, preferably National Treasury so that the seamless integration with the financial systems is adequately evaluated. Appointed municipal valuers will likely continue to operate their VRMS or Microsoft Excel software externally to the municipal system's environment. This is a risk to municipalities, not only from their administrative capacity to comply with seamless integration requirements of mSCOA, but through exposure to irregular data changes or in the worst-case scenario, data corruption.

This thesis proceeds with an operational perspective of how municipal registers of properties are currently implemented in South Africa. The review is structured chronologically as an operational review of Part A of the municipal register of properties, the maintenance or updating of valuation rolls, and, finally, consideration of the annual Part B of the municipal register of properties report.

4.6 OPERATIONAL REVIEW OF THE MUNICIPAL REGISTER OF PROPERTIES

4.6.1 Introductory comments

Coverage is the initial objective of property taxation whereby all properties in a jurisdiction are identified and referenced. According to Mathur (2009) and Franzsen and McCluskey (2017)⁵⁵, all

⁵⁴ Refer to Section 4.2.1.2 for the review of Part B of the municipal register of properties.

⁵⁵ Refer to Section 2.3 for the details of what these authors stated.

property parcels should be identified and given a unique reference number. Once the full inventory of properties is known and all the taxpayers identified, recurrent property tax coverage will be comprehensive.

A key operational challenge with respect to the municipal register of properties is that the MPRA does not explicitly prescribe a geospatial municipal register of properties to be assembled and maintained. Section 23(1) of the MPRA only states that “[a] municipality must draw up and maintain a register in respect of properties situated in a municipality.”

There are concomitant risks should the municipal register of properties exclude a spatial component and consist of a tabular register⁵⁶. These are not only in terms of the MPRA, but also towards the municipality’s capacity to comply with the regional financial segment reporting prescribed by National Treasury. In these instances, the utility of the municipal register of properties is restricted to the preparation and maintenance of the valuation roll. This restricts data interoperability between the valuation roll and the financial systems. The current practice of delivering municipal registers of properties and/or valuation rolls on spreadsheets does not afford the municipality any spatial intelligence to identify or correct issues illustrated through a spatial layer. The legislator’s omission of the provision for spatial data from the municipal register of properties is that neither the municipal valuer nor the municipality have any mechanism for discerning whether the tax coverage is complete or accurate. Such verification is easily achieved through mapping or the use of spatial reporting to show omissions or duplications in the property inventory.

In terms of good practice, the assembly of the municipal register of properties, a geospatial register, is achieved by merging the cadastral dataset supplied by the Surveyor General with the registered ownership layer acquired from the Deeds Registry⁵⁷. Each cadastral shape file or property parcel is identified by the expanded Surveyor General’s code or unique identifier and aligned with the respective registered ownership details. The municipal valuer uses this inventory prepared by a geotechnical practitioner as the platform to determine the property category and assign values to each property parcel. Ideally the municipal register of properties ought to be compiled as a preparatory phase of a general valuation roll project.

Emerging best practice is that the municipal register of properties includes the financial data so that the property records are aligned with the municipal billing system. Financial datasets include the municipal account numbers for each record with the associated account holder details, a combination of registered owners and tenant/occupier records. Despite availability of the financial data, municipal valuers frequently omit the financial dataset, relying exclusively on the deeds data for the preparation of the general valuation roll. Omission of financial data from the preparation of the valuation roll has risks. Most compelling are emerging discrepancies when the certified valuation roll is uploaded to the financial system for the generation of the rates accounts. KwaZulu Natal CoGTA is taking a firmer monitoring stand by requesting municipalities to supply certain reports.

⁵⁶ See Figure 4.4 for the illustration of the risk of using a tabular municipal register of properties.

⁵⁷ Refer to Sections 3.2.1 and 3.2.2 for details of the deeds and cadastre.

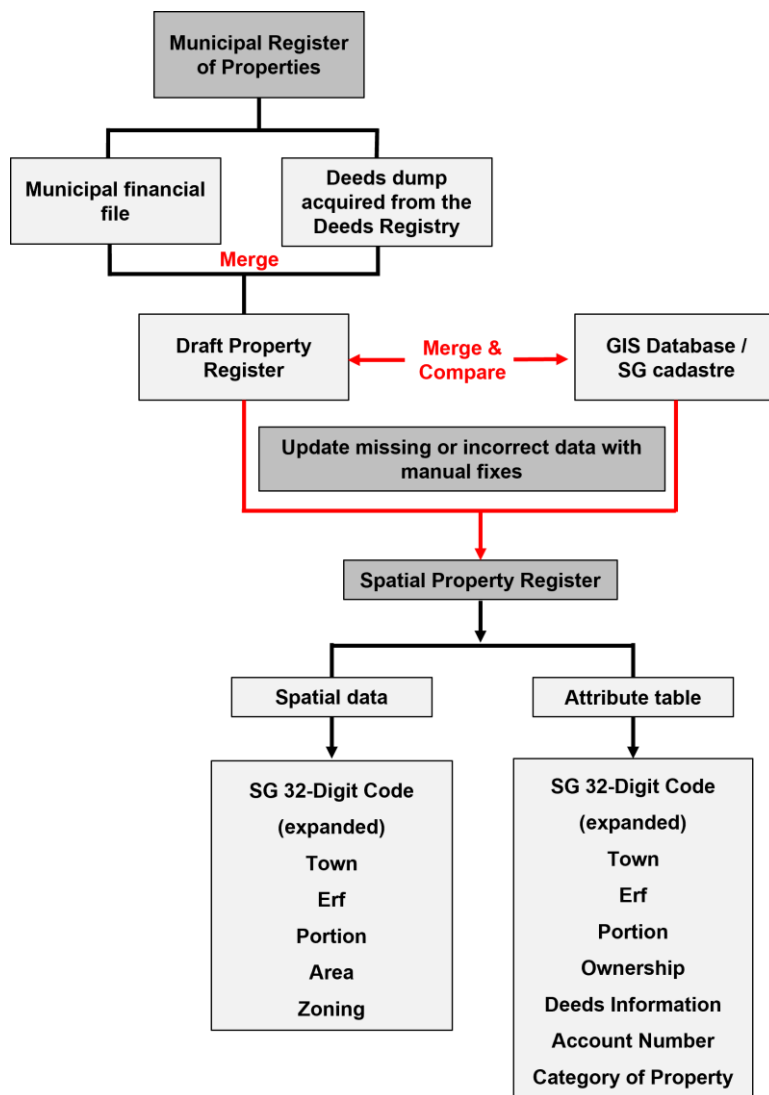
These reports include data from the existing current rolls, Part A of the municipal register of properties, the financial system, and the newly prepared draft valuation rolls with an associated comparable analysis towards mitigating the risks of data misalignment, but also to review any potential rates shocks or significant changes to the rates payable. POPIA compliance⁵⁸ by KwaZulu Natal CoGTA to provide the necessary safeguards for these submitted datasets has not been investigated. Notwithstanding, this poses a potential risk for all parties.

To be fully compliant with both the MPRA and the MFMA, municipal registers of properties should be geospatial. In terms of the chronological processes: once the datasets have been assembled the next step is to link the initial draft municipal register of properties to the existing municipal GIS or spatial database. In the absence of any available GIS from the municipality, the Surveyor General's cadastral set is used. A series of queries are run to determine and resolve any anomalies. The output is a fully matched dataset with a spatial component (SG 32-digit code, Township, Erf, Portion, Extent, Zoning) and an Attribute component (SG 32-digit code, Township, Erf, Portion, Ownership details, Deeds information, Account number, Rates and Use categories, etc.). The draft municipal register of properties is the product of merging and overlaying the deeds data, the cadastre received from the GIS department or from the Surveyor General, and the municipal financial file. It is useful for the municipal register of properties to include additional layers of relevant data, often referred to as a multi-purpose cadastre. Examples include infrastructural data that enables views of provincial, municipal, town and ward boundaries, as determined by the Municipal Demarcation Board, townships or suburbs, streets, and SPLUMA data from the municipality's land use management schemes (town planning or zoning data). Municipalities are the custodians of address and street information, and this layer should be included as a priority. Often streets remain unnamed and unnumbered causing challenges for the delivery of services, both municipal and other.

Once the municipal register of properties is in place, the municipal valuer's function is to determine the category of property based on the property's actual use and the market value of the property for each property in the municipal register of properties. The municipal register of properties should also contain land and building extents, conditionality assessments of improvements, vacancy figures, maintenance costs, tenant schedules, in fact any data or calculations of value that may inform the determination of value. The current mSCOA regional reporting uses ward boundaries as the level of regional reporting. The schematic, Figure 4.3 illustrates the process for assembling a municipal register of properties.

⁵⁸ Refer to Section 4.4.

Figure 4.3: Process of assembling a municipal register of properties

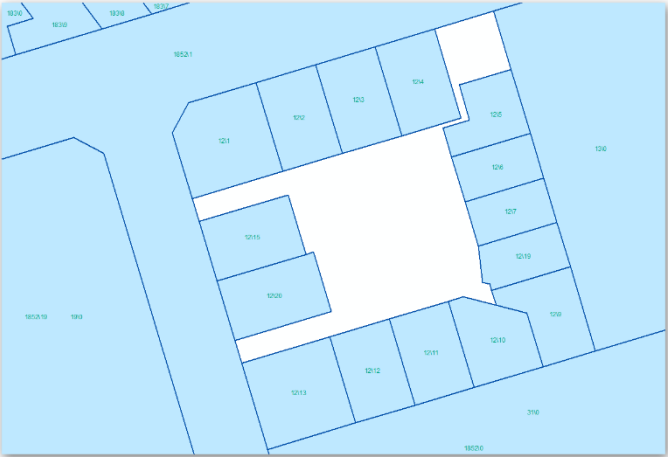


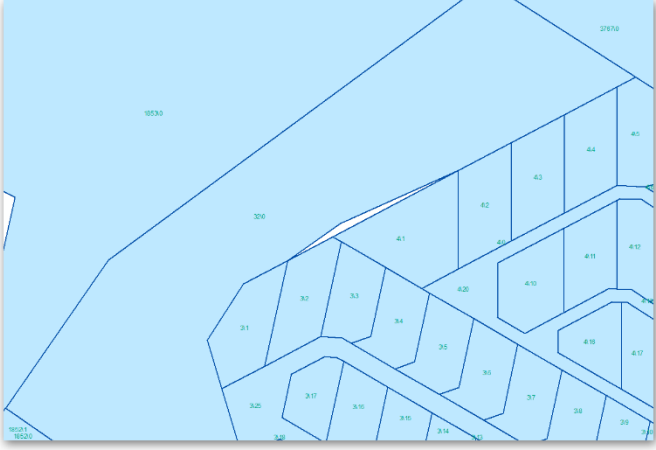
Source: Adapted from *Municipal Property Register: Practitioners guidelines* (James & Channing, 2020).

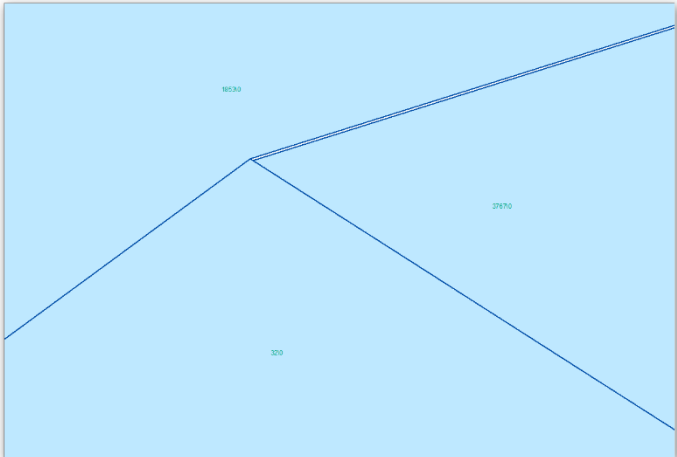
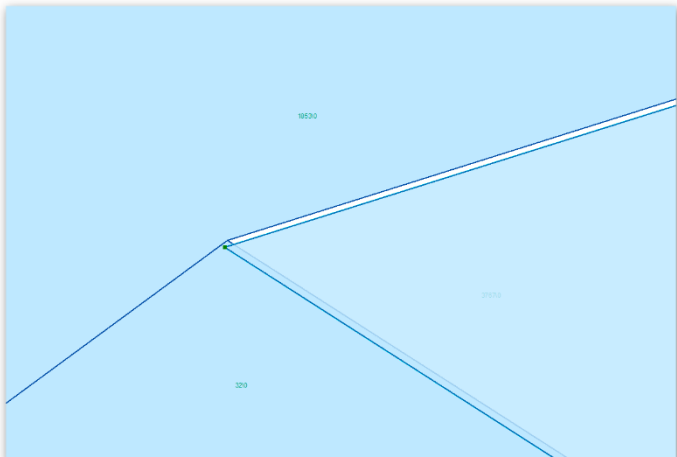
Geospatial technicians work with a rule of thumb that between 10-15 percent of the property records in the municipal registers of properties require fixing during the assembly phase. These fixes must be achieved manually as each fix is potentially different. Once the manual fixing process is completed the final spatial register or municipal register of properties may be compiled.

Table 4.3 provides details of a sample of the general and typology fixes required to rectify data during the assembly of the municipal register of properties.

Table 4.1: Fixes required for the assembly of an accurate geospatial municipal register of properties

Overlapping properties In this example portion 18 is the access road and should exclude portions 4-8 and 20. The area comparison between the SG diagram and the deeds should identify these properties.	General Fix	
Missing properties The remainder of Erf 12 is missing and must be downloaded, verified, and captured.	General Fix	

Gaps between properties In this example there is a gap between Erven 32 and 3/2 & 4/1: This could be from: A missing property A missing co-ordinate on Erf 3/2 & 4/1, or An extra co-ordinate on Erf 32. Both diagrams need to be downloaded and checked to amend the data.	General fix	
Incorrect property boundaries If a property overlaps with another, the diagrams for both should be downloaded and the polygons verified and corrected. Topology checks should be done to ensure a clean property dataset.	General fix	
Spatial record but no ownership details in Deeds records By linking the deeds data to the spatial property dataset, properties without owners can be identified. Blue = has ownership details; Red = no link in Deeds dataset) For all properties with no link in the deeds dataset:	General fix	

Check the correctness of the SG code Check the diagram to ensure the property still exists. It may have been consolidated, fully subdivided, or cancelled. Check parent property information.		
Gaps between properties (slivers) In this example there is a gap between Erven 1853 and 3767 – this is caused by dirty data where vertices are not snapped together. Both diagrams need to be downloaded and checked to amend the data.	Topology fix	
Overlaps between properties In this example there is a gap between Erven 3767 and 320 – this is caused by dirty data where vertices are not snapped together or polygons have been moved by accident. Both diagrams need to be downloaded and checked to amend the data.	Topology fix	

Source: Adapted from Municipal Property Register: Practitioners guidelines (James & Channing, 2020).

This interpretation of the establishment of the municipal register of properties enables compliance with the mSCOA Regulations as well as the MPRA. The assembly and maintenance of the municipal registers of properties must prompt consideration towards upskilling of GIS practitioners in municipalities.

Certain operational inconsistencies emerge as practitioners deploy different approaches for the assembly and updating of Part A of the municipal register of properties, the current valuation rolls. I address some of the identified and most notable operational issues in the following sections. Identified operational considerations include the inherent challenges of public sector procurement processes for the appointment of municipal valuers to prepare and maintain the valuation roll, the divergent bid specification guidelines that bidders respond to in order to be considered for appointment of these projects, the procurement of aerial photography and its associated cost implications, the capacity of municipal officials to manage the valuation contracts for the preparation and maintenance of the valuation rolls, the costs of property rates administration, especially for large, remote rural municipalities with predominately traditionally owned land, issues of recurrent property tax coverage, data copyright⁵⁹, the review or quality checks for values determined for property rates, implications for the rating tariffs, especially in the year in which a new general valuation roll is implemented, and lastly, the maintenance of the valuation roll or updating of Part A of the municipal registers of properties. The final section addresses the inconsistent operational understanding of Part B of the municipal register of properties and the requirements of these statutory annual reports.

The next section, key operational considerations, commences with a review of the procurement of municipal valuers of valuation services from the private sector to prepare and maintain municipal valuation rolls.

4.6.2 Operational considerations - Part A of the municipal register of properties

4.6.2.1 Procurement of municipal valuers from the private sector

The role of the valuer is only one component of MPRA implementation; the balance of the responsibilities resides with the municipal administration.

Public sector procurement, while ostensibly an open bidding process, has inherent challenges. Municipalities, through subscribing to their Supply Chain Management Frameworks may appoint the cheapest bidders to prepare and maintain their valuation rolls. Inaccurate or non-compliant valuation rolls impact negatively on rates revenue, ratepayer perceptions regarding the integrity of the municipality and ultimately the financial sustainability of the municipality. Without strict contractual oversight municipalities are at risk of receiving imperfect service delivery from their valuation service contractors.

There are a range of bid specification guidelines for the procurement of service providers to prepare general valuation rolls and provide roll updating services available to municipalities. These

⁵⁹ See Section 4.2.1.1 for the review of data copyright with respect to valuation rolls.

vary from the exceptionally detailed bid specifications provided by KwaZulu-Natal CoGTA to inadequately scoped and ambiguous specifications at the opposite end of the scale. To compound the impact of varying scopes of work and identified deliverables, municipalities frequently fail to plan or budget adequately for the time required to conduct their procurement processes. Objections lodged by unsuccessful bidders about pending awards may incur delays in the finalisation of appointments. Mechanisms for dealing with public sector procurement objections are both clumsy and lengthy. The inevitable time delays impact project deadlines for the preparation of the general valuation roll. Such appointment delays may compromise project timeframes.

Though these bid specifications are titled as 'guidelines', municipalities are cautioned to neither alter nor deviate from these. Despite pressure from CoGTA, the MPRA bid specification guidelines have not been updated to accommodate Treasury's mSCOA Regulations, especially as these pertain to the scope for the municipal register of properties. KwaZulu-Natal CoGTA's general valuation project bid guidelines include reference to MPRA standards as compliance benchmarks. However, this provincial department only monitors the attainment of procedural milestones negating any adherence to the compliance benchmarks. This monitoring is achieved through calling routinely for various data reports. The work of KwaZulu-Natal CoGTA's MPRA department is perceived to embody good practice with respect to provincial monitoring of MPRA compliance.

The next operational issue is the inclusion or exclusion of imagery datasets to support the determination of valuations for recurrent property taxation. Certain bid specifications include the provision of imagery datasets as a specific project deliverable, while others extend the discretion to procure supporting imagery to the appointed valuation service provider.

4.6.2.2 Aerial photography

The MPRA - Section 45(2)(a) states that physical inspection of properties is optional. Current or up-to-date aerial photography is a useful tool for the preparation and maintenance of valuation rolls. Imagery datasets are presented in a GIS-ready high-resolution digital format (ortho-rectified) compatible with most industry-standard GIS and Computer Aided Design (CAD) software. Imagery enables mapping features and visible infrastructure directly from the imagery on a desktop computer. Standard products are geo-registered and include colour balanced natural colour mosaics.

In terms of a cost-benefit analysis, aerial imagery may present a cost saving strategy, either as an alternative to or complementing physical data collection. Aerial colour imagery is optimally suited to growing urban environments, especially in the peri-urban areas where land use changes are fast moving. The utility of aerial photography in rural areas with low development incidence and few sales transactions is debatable.

Aerial digital imagery has various complementary applications in a municipality. These include municipal planning and reporting functions, as well as developing strategies for disaster management. Imagery permits the identification of different land uses, identification and measurement of property extents and building footprints. Oblique imagery refers to imagery that permits the interpretation and recognition of structures. Oblique imagery enables valuers to measure

the area, height and elevation of a structure in addition to its building footprint or extent. The use of oblique imagery is a recommendation for metropolitan and the urban centres of high-capacity municipalities.

The terms of reference in the various versions of the bid specification guidelines show that KwaZulu-Natal CoGTA's bid specification guidelines prescribe the procurement of imagery, while the other provinces including the guidelines provided by national CoGTA are either silent on the imagery scope or note that the bidders should acquire the imagery at their own discretion, i.e. their own cost. Given that public sector procurement is driven primarily by the lowest priced tender, the acquisition of supporting imagery is an unlikely inclusion for these contracts.

The KwaZulu-Natal CoGTA's bid specification guidelines for the preparation of municipal general valuation rolls include requirements for ortho-rectified imagery with a prescribed resolution of 0.25m ground pixel size within a 1:10 000 scale. The imagery is acquired through specialist third party vendors. The imagery prescription adds significant costs to bid pricing, especially for B4 municipalities with small tax bases. Such municipalities with largely rural areas may also have extensive properties falling under traditional or customary land ownership. Table 4.4 shows a sample of quotations from Land Resources International, an imagery vendor. It also shows the imagery costs as a percentage of the total project costs for recent general valuation roll projects, circa 2023/2024. This sample is drawn exclusively from municipalities within KwaZulu-Natal. The debate is whether the inclusion of obligatory aerial photography presents value for money for small, poorly capacitated and under-resourced rural municipalities with a limited rates revenue. The costs of the imagery across this sample of 25 municipalities represent an average 21 percent of the total bid costs.

Table 4.2: Aerial photography costs

Municipal classification.	Municipality Name	Total parcels	Aerial photography costs (rural + urban) Incl. VAT	Total bid price Incl. VAT	% of imagery to total price
B4	Nquthu	9043	R336 490,00	R1 582 022,00	21%
B4	Umfolozi	801	R251 045,00	R948 738,00	26%
B4	Impendle	1545	R399 395,00	R1 696 697,00	24%
B4	Ulundi	7593	R458 620,00	R2 296 278,00	20%
B4	Umhlabuyalingana	512	R486 910,00	R1 400 664,00	35%
B4	Umzimkhulu	4975	R382 145,00	R2 269 208,00	17%
B4	Umzumbe	1293	R316 825,00	R1 413 686,00	22%
B4	Uphongolo	4896	R447 580,00	R1 978 476,00	23%
B4	Nkandla	1575	R382 375,00	R1 473 753,00	26%
B3	AbaQulusi	19321	R542 110,00	R4 443 733,00	12%
B3	Big 5 Hlabisa	2648	R457 930,00	R1 977 161,00	23%
B3	Emadlangeni	3435	R402 040,00	R1 932 479,00	21%
B2	Greater Kokstad	12648	R382 605,00	R2 986 412,00	13%
B2	Inkosi Langalibalele	13724	R555 565,00	R3 886 155,00	14%
B3	Mtubatuba	7301	R331 315,00	R3 074 597,00	11%
B4	Jozini	2504	R380 995,00	R1 469 473,00	26%

B4	Mandeni	7525	R205 735,00	R1 709 235,00	12%
B4	Mkhambathini	1639	R188 830,00	R1 299 004,00	15%
B3	Mpofana	5923	R341 320,00	R2 055 271,00	17%
B4	Msinga	1310	R366 390,00	R1 348 889,00	27%
B4	Mthonjaneni	2072	R343 965,00	R1 616 522,00	21%
B4	Ndwedwe	1083	R308 545,00	R1 246 614,00	25%
B4	Nongoma	750	R376 970,00	R1 348 693,00	28%
B4	uMlalazi	7144	R394 910,00	R2 747 126,00	14%
B4	Maphumulo	581	R278 875,00	R881 293,00	32%
			Average % of the total bid costs		21%

Source: Land Resources International, imagery quotations 2022-2023.

The following examples drawn from Table 4.4 are worth further commentary:

Umhabuyalingana Local Municipality, a rural and remote B4 municipality in northern KwaZulu-Natal, has only 512 property parcels, with a high percentage of communally owned land. The imagery contributes 35 percent of the cost of preparing and maintaining the valuation roll.

Umzumbe Municipality, a B4 municipality, KwaZulu-Natal, also has a large component of traditionally owned land and a collection rate of below 60 percent (Mthenjwe, 2023). The cost of the imagery is R275,000, or 33% of the total bid price.

This finding indicates that the procurement of imagery for the purposes of preparing the general valuation rolls is financially onerous. Further investigation needs to be conducted into options for CoGTA to procure such imagery on behalf of the municipalities, or for a shared service approach to procurement to be adopted to mitigate certain overheads through economies of scale.

A further set of operational challenges revolves around the assessment and rating of communally or traditionally owned properties. These properties are held under customary land tenure. The benefits of occupation and land use are extended through customary or unwritten practices. Such land cannot be alienated by sale and is presided over by traditional landholding institutions. The South African Constitution Section 25(6) states: “A person or community whose form of tenure of

land is legally insecure as a result of past racially discriminatory laws or practices is entitled, to the extent provided by an Act of Parliament, either to tenure which is legally secure or to comparable redress” (South African Constitution, 1996). Delius and Beinhart (2021) note that, to date, the government has not been able to pass legislation that is constitutionally acceptable to enable this clause to be put into practice. This poses operational challenges for both the land holder, the occupiers, and the respective municipalities in terms of delivering services and levying property rates to these communities.

4.6.2.3 Valuing and rating communally owned land

Section 24 of the MPRA states that property rates must be paid by the owner of the property. A graduated continuum from private ownership, leasehold, easements, mortgages, and the different types of common, communal and customary land tenure arrangements is the best illustration of the various tenure arrangements in South Africa⁶⁰. The operational challenges with respect to traditionally owned land are thesised from the perspective of the Ingonyama Trust, which holds extensive tracts of land, 2.8 million hectares, within the province of KwaZulu-Natal. The limitation of this thesis should be addressed through further research incorporating additional examples of traditional land holding institutions.

The Ingonyama Trust, KwaZulu-Natal, is a Schedule 3A Public Entity, defined in the Public Finance Management Act 1 of 1999. This traditional trust owns approximately one third of the landholding within KwaZulu-Natal. The Zulu king, His Majesty Misuzulu Zwelithini, is the sole trustee of the Ingonyama Trust. The Trust holds the land on behalf of the communities who occupy these properties. This land is held in perpetuity for the exclusive use of the land by communities with no obligation to pay rent. Municipalities have obligations to extend service delivery, access to sufficient water, basic sanitation, and collection of refuse to all the communities residing on properties within their jurisdiction (Mshengu and others v Msunduzi Municipality and Others High Court 11340 [2017]). There has been substantial litigation between eThekweni Municipality, a metropolitan municipality in KwaZulu-Natal, and the Ingonyama Trust around the liability for the payment of property rates. The Constitutional Court judgement in eThekweni Municipality v Ingonyama Trust ([2013] ZACC 7) found that property vested in the Ingonyama Trust is rateable. Therefore, the Ingonyama Board has the liability for the payment of property rates to the respective municipalities where trust land is located. Operationally such payment is constrained by budgetary considerations.

The recommended valuation approach for valuing properties under traditional ownership valuations for property rates is to assign and value these in the multiple purpose category. In compliance with Section 9 of the MPRA the valuer must apportion the market value to the different land uses or purposes for which the property is used. The municipal financial system is required to allocate the appropriate tariffs to apportioned land uses and extend the registered owner the current account.

⁶⁰ See Section 2.7.2, Figure 2, for the illustration of the continuum of land rights.

From an operational perspective, the application of the extended SG 32-digit code is necessary to uniquely identify each respective land use on traditionally owned properties. These may include schools, clinics, commercial entities, or property used for residential or agricultural purposes. Through the adoption of the extended SG 32-digit code as the unique identifier, the property data held for communally owned properties is accessible to all stakeholders. These include the municipalities and the Department of Public Works as client department for the state-owned improvements such as schools and clinics, properties owned by the state and used by the state for public service purposes⁶¹. Such property identifiers may be aligned to the fixed asset registers at the Department of Public Works.

In the face of insecure tenure and the rural location of the properties, many occupiers of traditionally owned properties may genuinely not be in a financial position to contribute to the payment of municipal services or property rates. However, in peri-urban areas, this situation assumes a different guise. There is an escalating prevalence of high-value homes constructed on communally owned property within these neighbourhoods. Occupiers of these high-value residential dwellings, have, in most instances, secured occupational rights through an informal agreement with the traditional leader paying a nominal once-off contribution for the right of occupation. These occupiers make no financial contribution to the municipality through the payment of property rates, irrespective of whether they receive municipal services. Stakeholder discussions towards addressing options about how affected municipalities may derive revenue from these occupiers who can evidently afford to contribute to both services and property rates are underway.

The initial preparation of general valuation rolls and the ongoing maintenance or updating of the current valuation rolls through the preparation of supplementary valuations are large scale projects. The operational considerations are addressed in the next sections.

4.6.2.4 Operational considerations for the preparation and management of valuation rolls, Part A of the municipal register of properties

The first step towards preparing a compliant general valuation roll is the inclusion of all the properties in the municipality in Part A of the municipal register properties, the current valuation roll. Acquisition of existing municipal data informs the project's data requirements. If the municipality has retained or taken ownership of the existing property data, then the appointed service provider will scope the data collection to include data verification, market analysis and any gap filling that is required. If there is no property attribute or valuation data available from the municipality, the valuation service provider is compelled to re-collect all the property data required for the market assessments required for property rates.

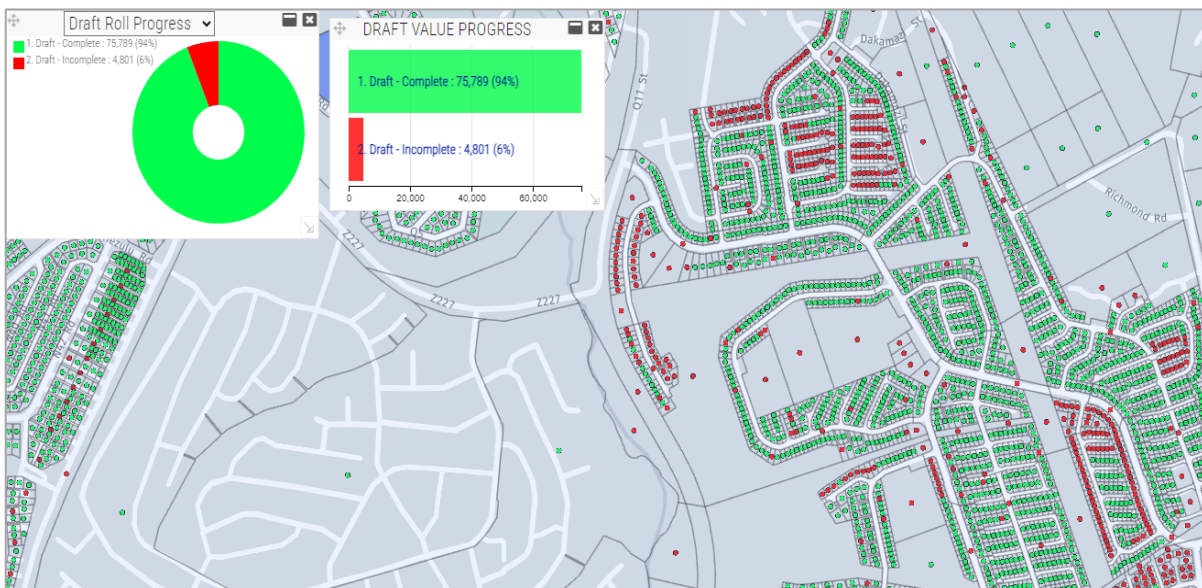
A further consideration is the consistency of both the quantity and quality of property data collected for the preparation of the general valuation rolls, as well as for the updating of these

See Section 4.2.1.1 for the legislative review of public service purpose properties.

valuations as required for the duration of the roll validity period. The International Association of Assessing Officials' Mass Appraisal Standards (2017) indicates that property attributes required for accurate valuations are reliant on local market forces, selected valuation methodology, the legislative requirements, and cost efficacies of the collection. The completeness of the municipal register of properties is an important factor without which the municipality is unable to achieve full coverage for its recurrent property tax base. Given this context, the assembly of a municipal register of properties ought to be a preparatory project preceding the preparation of a valuation roll.

Once assembled, the geospatial municipal register of properties may support reporting on progress of the general valuation. The geospatial municipal register of properties may be used as a project management tool to report this progress. Through recording the status of each property as data is collected, draft values or final values determined, viewers (whether the municipal official, the internal project team or CoGTA's monitoring team) may assess the project's progress and, most importantly, verify the inclusion of all properties in the general valuation roll. Figure 4.4 illustrates the application of this reporting application with green denoting properties where draft values have been determined and red where these remain outstanding.

Figure 4.4: Illustration of the progress of a general valuation project management reporting using the geospatial municipal register of properties



Source: Author's own compilation.

Neither mandatory property attribute collection nor valuation methodologies for the determination of the market value assessments for property rating are prescribed by the MPRA. The property attributes collected by various municipal valuers differ. Certain valuation service providers collect many attributes per property record, while other service providers focus on limited data fields such as the size of the erf and the extent of the improvements. Valuers may use their preferred valuation methodology, either Computer Assisted Mass Appraisal (hereafter "CAMA") or another valuation

methodology or valuation techniques⁶² for generating values for inclusion in the general valuation roll.

The submission of the draft general valuation roll with the preliminary values as a discrete project milestone is frequently under-appreciated. If project contract timeframes are constrained, whether for delayed appointment processes or other operational delays, careful review of the draft general valuation roll may be forfeited. The timeframes for the date of the submission of the draft roll is dependent upon the size of the municipality and the date of appointment of the valuation service provider. Draft roll review affords municipalities the opportunity to review the coverage and the assessed values. This is preferably conducted using a geospatial platform as illustrated in Figure 4.4.

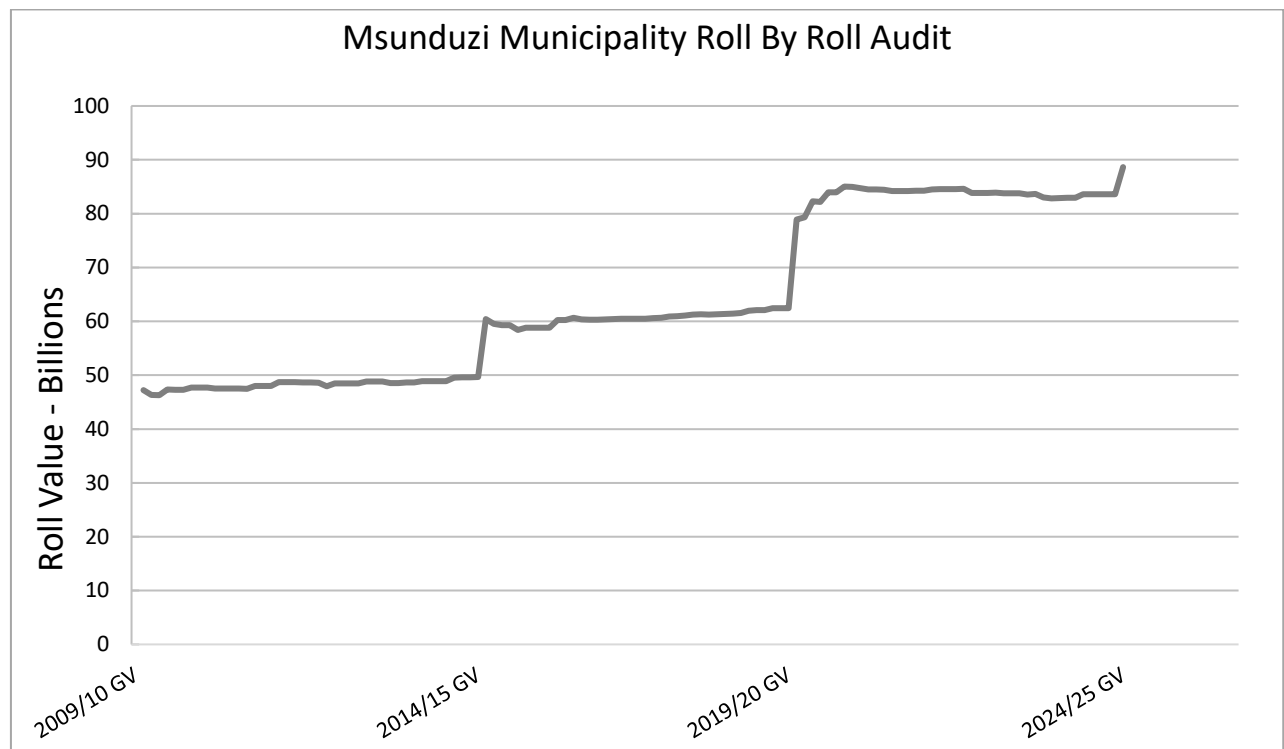
Reviewed responsibly, the draft values in the draft valuation roll inform the completeness of the coverage, as well as highlight shifts in tax incidence through value changes. For example, the development of a new shopping centre may cause residential values in the immediate surrounds to escalate while a land invasion⁶³ may prompt devaluation of the neighbouring properties. Such value shifts ought to be recognised and accommodated in the municipal budgetary preparatory processes. Municipal draft budgets must be tabled and adopted by the end of March, ahead of the commencement of the municipal financial year on 1 July.

While the valuations constitute one side of the rating equation, the assignment of tariffs is equally important, more so in the financial year in which the municipality implements a new general valuation roll. Evidence from a B1 classification municipality, Msunduzi Municipality in KwaZulu-Natal, indicates that each new general valuation cycle experiences an escalation of an average 20 percent in total asset value of the valuation roll. The ongoing preparation of supplementary valuations reflecting the valuation changes since the general valuation are evidenced as gradual increases in the asset value of the current valuation roll, Part A of the municipal register of properties. This is depicted on the x-axis of Figure 4.5. This figure illustrates the significant escalation in asset value through successive general valuation rolls, 2014/2015, 2019/2020 and 2023/2024, with steady escalation realised through the ongoing preparation of supplementary valuations during the maintenance phase of the current valuation rolls, Part A of the municipal registers of properties.

⁶² MPRA, Section 45(1): Property must be valued in accordance with generally recognised valuation practices, methods and standards and the provisions of this act.

⁶³ Land invasion refers to the illegal occupation of land with the intention of erecting dwellings or establishing settlement.

Figure 4.5: Msunduzi Local Municipality: Current valuation roll asset value increases for the period 2009 – 2024



Source: Msunduzi Local Municipality, KwaZulu-Natal.

Where a new general valuation roll's values correlate with an upward shift in market value, responsible tariff modelling is required to mitigate potential rates shocks. Section 20 of the MPRA enables the Minister of CoGTA in concurrence with the Minister of Finance to limit the total revenue derived from rates. For municipalities where revenue maximisation is a budget driver, such a cautionary may be ignored. The revenue maximisation approach places an onerous burden on property owners where the market value has increased significantly, as the new general valuation roll and tariff escalation combine to create significant rates shocks.

Municipalities are cautioned against escalating the tariffs by a straight year-on-year escalation index without sensitivity to the changed asset value of properties when implementing new general valuation rolls. The example illustrated in Table 4.5 shows the resultant rates shocks if the tariffs disregard value changes. The rates shock is compounded by the market value of properties as well as the tariff escalation. Option A in Table 4.5 results in an 85 percent increase in the monthly property rates payable through deploying a straight year-on-year tariff escalation index.

Option B, the recommended tariff modelling strategy following the preparation of a general valuation roll, is based on actual revenue increases. In this scenario, the property owner would pay R424.63 monthly, a 6 percent increase in property rates aligned to a national inflationary index considered acceptable to ratepayers. Consultation between the municipality and civic stakeholders is mandatory in compliance with Chapter 4 of the Systems Act. The municipality should engage with

bodies such as residential, business and farmers' associations, as well as other civic groupings especially around municipal budgets.

Table 4.3: Tariff modelling scenarios for the financial year with the implementation of a new general valuation roll

Current roll value for Property X	Current Tariff	Current rates payable – Property X	Current property rates payable, per month	Percentage increase in rates payable
R 1 401 500,00	0,00343	R 4 807,15	R400,60	0
Option A: Straight year-on-year escalation index.				
New GV roll value 25% increase in market value	GV tariff	Projected rates payable – Property X	New property rates payable, per month	Percentage increase in rates payable
R1 750 000	0,0036358	R 6 362,65	R530,22	32%
Option B: Escalating property rates revenue by the inflationary index.				
New GV roll value 25% increase in market value	Rates revenue escalation	Projected rates payable – Property X	New property rates payable, per month	Percentage increase in rates payable
R1 750 000	6%	R5 096	R424,63	6%

Source: Author's own extrapolated from Umfolozi Municipality (B4 municipality, KwaZulu-Natal), 2022/2023 tariff modelling.

Frequently municipal budget officials view the increased asset value of a newly prepared general valuation roll as a financial windfall. Resistance from ratepayers is inevitable. Timeous submissions of the draft general valuation roll to the municipality enable preliminary budgetary modelling using the new draft roll values. This pre-emptive strategy ensures that rates shocks, as illustrated in Figure 4.5, Option A, are mitigated.

Upon certification of the general valuation roll, any changes or alterations must be processed through objections and appeals processes with accompanying audit trails, administrative procedures, and the associated costs. A further risk of not reviewing the draft general valuation roll is potentially higher numbers of objections and appeal applications. A key finding is that the failure to review the draft values may contribute to further administration costs for property rates. Such costs are borne by the municipality and, ultimately by the ratepayers. The required submission of draft valuation rolls, and the timeframes required for diligent review are identified as an operational concern, as well as a recommended oversight intervention.

This review of the operational challenges associated with the municipal register of properties considers how the current valuation roll is managed and administrated. While property is an immovable asset, property attributes are dynamic. The following section discusses the operational processes for the maintenance of the municipal register of properties as provided in Section 23(2) of the MPRA. This provides that the current valuation roll, Part A of the municipal register of properties, must be maintained and updated whenever necessary to preserve the rating equity within the municipality.

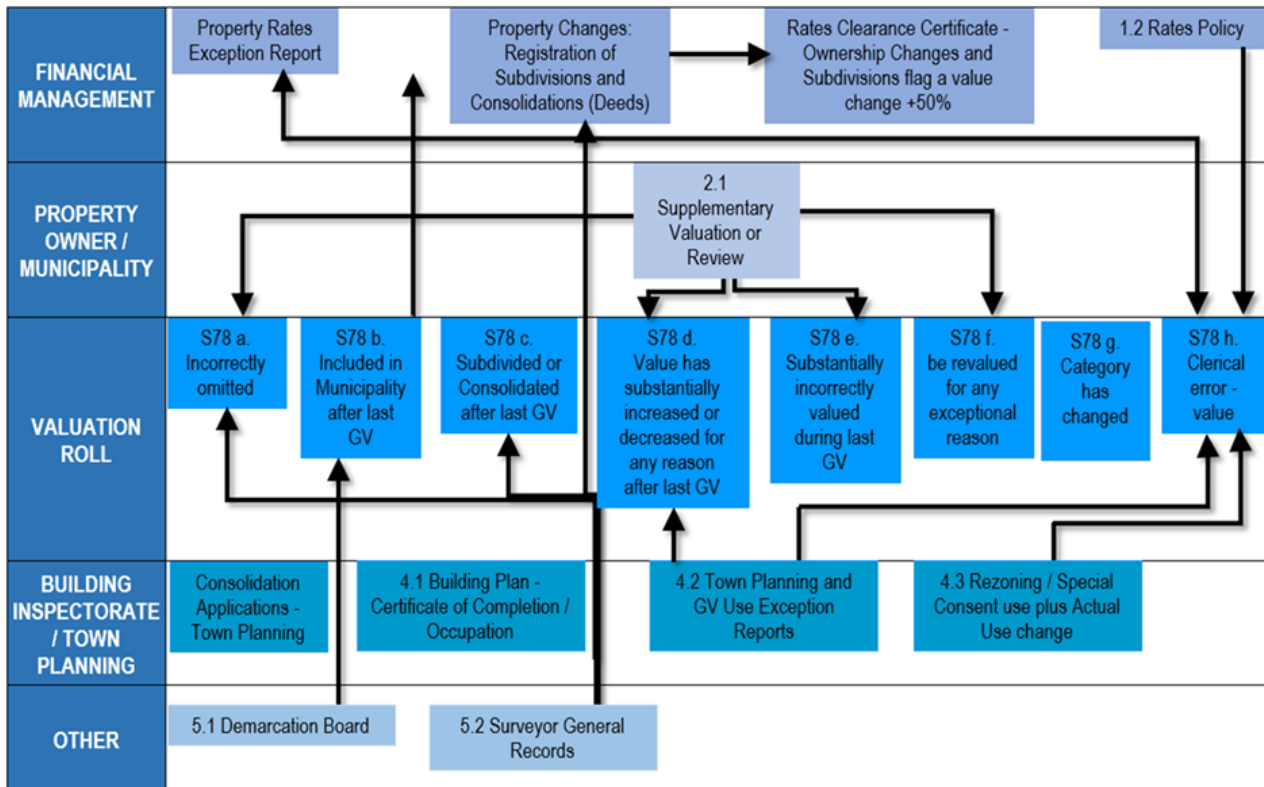
4.6.2.5 Maintenance of the municipal register of properties

Property may be bought, sold, subdivided, consolidated or re-zoned. Vacant land may be developed, and derelict or unsafe buildings demolished. To ensure that the coverage of the municipal register of properties is retained and property rates remain equitable, the municipal register of properties must be updated to record appropriate changes to property values. The MPRA's Section 78(1) provides that a municipality must, whenever necessary, cause a supplementary valuation to be made in respect of any rateable property that is - (a) incorrectly omitted from the valuation roll, (b) included in a municipality after the last general valuations, (c) subdivided or consolidated after the last general valuation, (d) of which the market value has substantially increased or decreased after the last general valuation, (e) substantially incorrectly valued during the last general valuation, (f) that must be revalued for any exceptional reason, (g) of which the category has changed, or (h) the value of which was incorrectly recorded in the valuation roll as a result of a clerical or typing error. The MPRA was amended in 2014 and came into effect from 1 July 2015⁶⁴ to provide for "real-time" updating of the valuation rolls, or as noted by Ackerman *et al* (2022: 194) "changed the rules of the supplementary valuation game substantially". It is now possible to implement the supplementary valuations as soon as they are prepared through the Section 78 processes. The various changes to the property attributes need to be followed systematically, otherwise these could become "messy". The example provided by Ackerman *et al* (2022) is an agricultural property that excised farm portions that are consolidated and a new township established. Thereafter 2 erven within the township were consolidated and a sectional scheme proclaimed. The finding with these types of property transactions is that the probability of mistakes is high in the absence of a VRMS.

From an operational perspective, changes to property attributes prompt the preparation of supplementary or re-valuations. The regularity of the maintenance and updating of the current valuation roll is reliant upon the changing property attributes, or in other words, the size and growth of the respective municipality. Provisions in Amendments to the MPRA, Section 78(4)(a), state that the property owner becomes liable for the payment of rates from the effective date. This is defined as the first day of the month following the posting of the review notice. Alternatively, where revaluations are triggered by an event, for example, the date of the subdivision or issuance of the occupation certificate, then the liability for the payment of property rates commences from the date of the event. A schematic illustrating the workstream for the preparation of supplementary valuations and the related municipal departments responsible for this information is included in Figure 4.6. The preparation of supplementary valuations requires municipal inter-departmental communication regarding the instructions for supplementary valuations to be prepared. The schematic highlights the necessity for institutional cohesion rather than a siloed approach.

⁶⁴ MPRA Amendments, Government Gazette 38259, 28 November 2014.

Figure 4.6: Triggers for the preparation of a supplementary valuations



Source: Author's own interpretation of Section 78 of the MPRA.

Poor institutional integration in the municipality results in the risk of the municipal valuer (typically working outside the municipal environment as a contracted vendor) being unaware of changes to property attributes. The risk of the preparation of supplementary valuations not meeting the legislative criteria of “whenever necessary” is high as a result. The recommendation is for all respective municipal departments together with the appointed municipal valuer to work in the VRMS. This arrangement enables all changes to property attributes to be communicated through the system permitting timeous changes to be affected through the preparation of supplementary valuations.

Omissions of property records from the valuation roll impacts directly on municipal revenues. Omissions are the subject of Section 78(4) in the MPRA. Omissions are a common occurrence in mass valuation projects that include large numbers of properties. Typically, omissions include properties that have transacted after the general valuation cut-off date, as well as properties that may be discovered late during the preparatory phase of the preparation of the general valuation roll. The liability for the payment of rates for supplementary valuations that address omissions is the first day of the month following the posting of the review notice to the registered owner. The parliamentary public hearings considered that when addressing the timeous resolution of errors, prejudice must vest with the municipality (Parliamentary Portfolio – MPRA Amendments, 2014). The omission of property records from the municipal register of properties (current valuation roll) is a mistake or error by the municipality. Thus, if the municipality does not send the Section 78 review notice, they may not raise the rates account nor collect the rates revenues due retrospectively. In short, rates revenue is foregone if the supplementary valuations addressing omissions are not executed timeously.

The advantage of the iterative or ongoing updating of the Part A of the register or current roll, is that when the annual statutory supplementary valuation roll is required for publication and public inspection, this published roll may be processed without delays. The preparation of the supplementary valuation roll with the accompanying statutory Section 49 notices to the affected property owners entails compiling all of the supplementary valuations prepared during the preceding financial year into a single supplementary valuation roll for certification and publication.

Updating and maintenance of the municipal registers of properties also includes changes in ownership status through sales transactions. It is noted that an ownership change is not a trigger for the preparation of a supplementary valuation. A common operational error perpetuated by municipalities is to instruct their municipal valuer to prepare a supplementary value reflecting the purchase price reflected on the rates clearance certificate. A rates clearance certificate is required ahead of the conveyancing processes to register the transacting property in the name of the new owner. Such valuation instructions ignore the date of general valuation that endures for the roll's validity cycle ensuring equitable rating. The emerging good practice is the inclusion of monthly ownership changes in an administrative roll. Section 79 of the MPRA enables changes in the particulars of the roll, in this case, ownership changes, to be accommodated through such a process. Notices are not required for administrative rolls where there is no material impact nor change to the value of the property.

A further operational risk is where financial officials assume responsibility to 'update' values in the financial system without these value changes being recorded through supplementary valuation procedures provided in Section 78 of the MPRA. Routine balancing and reconciliation reports between the VRMS and the financial systems address such irregularities and should inform compliance. The proposed seamless integration between the VRMS and the financial system would mitigate any risks of non-alignment between these key municipal datasets. The absence of full compliance of the regulatory seamless integration is a key operational finding. These operational findings outlined above serve as a motivation for further education to clarify the current valuation roll as the source document for all valuation information in the municipal rating domain. Without oversight and monitoring, inadequate or inconsistent responses from the municipal valuer and/or the relevant municipal officials may result in revenue losses or the risk of non-compliance.

The preceding section discussed the operational challenges associated with the updating and maintenance of Part A of the municipal register of properties or the current valuation roll. I dispute the differentiation between the municipal register of properties and the datasets referred to by Ackerman *et al* (2022, p. 115) as the property master file. The municipal register of properties is the current valuation roll and should include the current valuation roll, together with the billing system, ownership details and cadastre. The misconception between the municipal register of properties and these master files or erf master databases created and named by different valuers and other stakeholders is a key finding of this research. The description of Ackerman *et al*'s property master file is that this dataset is the municipal register of properties or the current valuation roll. I agree with Ackerman *et al*'s (2022) proviso that all properties must be uniquely identified. This thesis

recommends the expanded 32-digit SG code as the intelligent identifier, refer to Section 3.2.4, Table 3.2. It is recommended that certain emerging practices, such as the property naming protocols, be standardised for inclusion in the monitoring and oversight frameworks towards improving the efficacies of property rates in South Africa.

The final operational consideration of this thesis of the municipal register of properties is directed to the statutory annual Part B report of the municipal register of properties. This statutory report is often either ignored or misunderstood by municipal and CoGTA's national/provincial monitoring officials alike. Critically the generation of the Part B municipal register of properties includes the integration of valuation and tariff data, achieved through the integration of the municipal financial system and VRMS.

4.6.2.6 Part B, municipal register of properties

The legislator's intention of the municipal register of properties Part B⁶⁵ report is to promote good governance through transparency with respect to the application of rates relief. Categories of property and categories of owners of property are extended discretionary rates relief through municipal rates policies⁶⁶ that must be reviewed annually. The Part B report also includes details of properties that reflect impermissible rating, where rating is disallowed in terms of Section 17 of the MPRA. The publication of Part B of the municipal register of properties is required to be published at least annually, as provided in the MPRA's Section 23(5).

The initial consideration of the operational review of Part B of the municipal register of properties is whether a VRMS is deployed. If this is affirmative, then the second operational consideration is whether such system is included, or excluded from, the municipality's ICT environment.

The MPRA compliance monitoring for the municipal register of properties by provincial CoGTA departments (in this case, Mpumalanga CoGTA) includes checking annual procedural compliance to publish Part B of the municipal register of properties. If the VRMS, deployed by the contracted valuer, resides outside the municipality without integration with the municipal financial system, then the Part B report is achieved through a manual exercise. Anecdotal evidence from Emalahleni Municipality, a B1 municipality in Mpumalanga, is that officials manually captured 144,000 valuation roll records in a Microsoft Excel spreadsheet and applied appropriate tariff codes to each record to meet provincial monitoring requirements for the Part B report (Vilakazi, 2023). The risk of human error in developing an accurate report is an obvious operational risk.

Annual analysis of Part B reports details the income foregone through the extension of discretionary rates relief. This may support applications for financial support (for example, the deferment of property rates due to unemployment), or applications for indigent status by vulnerable households within municipalities. Such information is useful financial intelligence for a municipality.

⁶⁵ See Section 4.2.1.1 for the legislative review of Part B of the municipal registers of properties.

⁶⁶ Rates policies are described in Section 4.2: Legislative and institutional review.

The findings are that the information contained in the Part B municipal register of properties is inadequately reviewed as a compliance requirement. The Part B reports could also be considered by the National Treasury towards supporting responsible decision-making around the calculations of the equitable share and other grant support to municipalities.

While the previous sections addressed key findings from the MPRA or valuations perspective, the next section identifies key operational challenges for property rates from a finance or rating perspective.

4.7. LOCAL GOVERNMENT: MUNICIPAL FINANCE MANAGEMENT ACT 56 OF 2023 - OPERATIONAL CONSIDERATIONS:

4.7.1 Introductory comments

National Treasury's 2012 MFMA Circular 64, emphasises the fiscal framework underpinning the financial sustainability of local government. This circular, refer to Section 4.1.1, states that the municipality must first ensure that it has accurate information of all of the properties within its jurisdiction as its property rates base, or to achieve complete coverage. This inventory not only establishes full coverage for property rates but has bearing on service delivery and utility billing.

In 2017, National Treasury introduced mSCOA Reporting Regulations for all municipalities in South Africa⁶⁷. The mSCOA regulations were promulgated in response to challenges of data inconsistency, variable budgeting and reporting formats, indecipherable transaction classifications, limited transparency and poor information about warning indicators flagging financial distress in municipalities. National Treasury issued subsequent regulations with further compliance requirements guiding municipalities towards better financial management and improved financial sustainability. Certain challenges pertinent to the municipal register of properties are identified in the following sections.

In 2022 National Treasury conducted an independent audit towards establishing the status of municipal compliance with mSCOA use. The next sections identify National Treasury's audit and other findings as these pertain to the municipal registers of properties from a municipal financial or mSCOA perspective. These identify municipal ICT infrastructure, budgetary preparation implications, municipal collection rates including recurrent property taxes, the applications contained in the indigent register data, and finally how objections and appeals processes are processed in the VRMS and the integrated financial system as key operational findings with direct implications for the municipal registers of properties.

4.7.2 Operational consideration: ICT infrastructure

Municipal registers of properties, hosting all property and valuation data, ought to be contained in a VRMS licenced to the municipality and operating in the municipal ICT environment. Integrated

⁶⁷ Refer to Section 4.3.1 for the legislative review of mSCOA.

municipal financial systems are the principle municipal system with the VRMS, an associated third-party system. One of the findings of the 2022 independent audit commissioned by National Treasury is the recommendation for municipalities to modernise and maintain their ICT infrastructure.

The auditors identified obsolete infrastructure, or the requisite systems/applications licences not being timeously renewed. Another critical issue identified through the audit is inadequate municipal disaster recovery and back up procedures. This was attributed to poor communication between systems vendors and the municipality where the parties assumed that the other party was responsible for these processes. Municipal ICT policies frequently excluded requirements and procedures to address remote access or to adequately accommodate third-party system integration. These include security controls and responsibilities of the third-party systems. The need for all third-party systems to be fully integrated is identified as a vulnerability and will be reviewed more rigorously going forward (Rautenbach, 2022).

4.7.3 Operational considerations: Budgetary processes

According to Sections 16(1) and (2) of the MFMA, municipalities must prepare draft budgets for adoption by their councils no later than 30 March preceding the commencement of the municipal financial year, 1 July. Municipal budgets must be finalised and adopted by 31 May. Municipalities must also review their rates policies annually. Should any changes be required to the rates policies, these should be tabled with the draft budgets for consideration and in the final budgets for council's adoption. There are mandatory requirements legislated in Sections (20)(2)(a) and (b) of the Systems Act for the communities to be consulted regarding the municipal budgetary processes.

Section 8 of the MPRA provides for differential rating, i.e. different tax rates are levied on different categories of property⁶⁸. The annual budgetary process to establish the differential tariffs is referred to as tariff modelling. The final monetary value of discretionary rates relief is informed by the number of qualifying annual applications for such relief. Such rates relief includes rates relief extended to vulnerable households through indigent relief, homeowners temporarily without income and bona fide farmers whose applications that have met the eligibility criteria and followed the correct procedures for accessing the relevant relief.

Part A of the municipal register of properties/current valuation roll are used by municipalities to generate monthly ratepayer accounts. Owners of properties with pending objection reviews and appeals applications are obliged to continue to pay rates until the respective decision, either the objection review or the appeal decision, is finalised. Lodging an objection does not defer liability for the payment of rates beyond the date determined for payment. Similarly, an appeal application also does not defer a property owner's liability for payment of rates beyond the dates determined for payment.

⁶⁸ See Section 4.2.1.1 Part A of the municipal register of properties for the legislative review of the rates policy.

4.7.4 Operational considerations: Collections

The ability of a municipality to generate internal income is important, especially from the perspective of financial sustainability. In South Africa, municipalities generate between 20-30 percent of their own income from property rates⁶⁹. An important operational finding are the mechanisms available to municipalities to send statutory notice and accounts to their ratepayers. The postal services in South Africa are dysfunctional with many post offices closed and the entity itself under business rescue (SA Post Office SOC Ltd A/B: DCDT briefing, with Deputy Minister, 2024).

CoGTA's response to queries about the provision in the MPRA regarding the distribution of statutory notices by ordinary mail⁷⁰ is that the MPRA will be amended at the next opportunity. The proposed amendment is likely to reflect that the statutory notices required to be sent to registered owners may be served by ordinary or by electronic mail or any appropriate electronic communication in accordance with Section 115 of the Systems Act. Postal addresses, email addresses or cell phone contact details are contained in the financial system for the purposes of sending out municipal accounts and should be accessible for the statutory notices required for the MPRA. Such access is conditional upon the integration between the financial system and the valuation roll.

When the MPRA was initially promulgated newly incorporated properties, including farms and rural land that had not previously fallen within municipal jurisdictions, were included in the property rates net. These properties had not previously received rates accounts and, as such, their address details were excluded from municipal financial system's databases. Incorrect or an absence of billing details for the agricultural sector still contributes to poor rates collections in certain sectors. Despite the MPRA conferring the onus to the property owner to advise the municipality if accounts are not received, ratepayer surveys return results advising that poor payment is due to incorrect postal addresses or billing details or that the accounts were never received.

Technological improvements also enable ratepayer payment methods to be managed electronically as opposed to physical cash payments at the municipality's banking halls. Municipalities with spatial municipal registers of properties may generate reports identifying debtor arrears by value and by age. Additional information such as the payment methods and further customer profiling is useful intelligence for the municipality in its endeavours to serve its communities better and become more financially sustainable.

In their study of a sample of municipalities within the North-West Province, Enwereji and Kadama (2018) recommend that municipalities tread cautiously as debt collection in the poor communities may not yield much revenue. The authors' study described aggressive debt collection as evoking unwelcome political repercussions. Civil protest action against poor service delivery is a constant challenge for cash strapped municipalities. Politicians demonstrate a reluctance to endorse strong

⁶⁹ See Chapter 1, Figure 1.1 for the analysis of rates revenue as a percentage total of municipal revenue, 2018-2022.

⁷⁰ MPRA, Section 49(1)(c)...serve by ordinary mail, or if appropriate, in accordance with Section 115 of the Municipal Systems Act, on every owner of property listed in the valuation roll.

enforcement strategies, especially within poorer neighbourhoods. Taxpayer attitudes are material with a culture of non-payment prevalent in certain areas of the country. This attitude is not unique to South Africa and is mitigated to a certain extent by a relatively high level of tax enforcement, risk profiling, community education and services (Ali *et al*, 2014). Penalties for non-payment of municipal accounts may be unenforceable, especially close to elections. It is common practice for municipalities to write off debt as a gesture, possibly also to garner electoral support. Poor debt collection practices also include deceased debtors included in the gross debtors' balance at year-end. In addition to not paying the municipality, debtor's services are not disconnected, nor any payment arrangements made with the municipality to recover amounts from the beneficiaries. As a result, amounts owed to the municipality prescribe⁷¹ and are written off resulting in financial losses for the municipality.

South Africa's diverse political affiliations and socio-economic status prompt municipalities to be versatile in their approach to addressing collection challenges. Collaboration between role-players, traditional leaders, councillors and communication dynamics can enhance payment culture, promoting a sustainable payment culture in the Northwest province. Enwereji, and Kadama (2018), in their study about debt management and the payment of residential property rates reveal that factors such as policies, legislation, social influence, deterrence, fiscal exchange, payment understanding, budget transparency and service administration influence payment compliance for municipal services. They advise that municipal administrators should evaluate customer psychology, adopt effective communication measures, be involved with escalation procedures around collections, detect early warning signals, deal with difficult debtors and monitor customer goodwill. Too often defaulters are aware of the penalties but continue to default anyway.

A line of research enquiry is whether such reporting using the geospatial municipal register of properties is useful. The management of defaulting payers is a critical component of municipal financial management and municipal financial sustainability. The feasibility of the extended role of the municipal register of properties is addressed in the next section that reviews the extended role of the municipal register of properties as the instrument to manage the municipal indigent registers.

4.7.5 Operational considerations: Using the municipal register of properties to map indigent households

Due to the high poverty and unemployment rates in South Africa, municipalities extend relief to indigent households qualifying with certain poverty criteria. The official unemployment rate stands at 32.9 percent (StatsSA Q3: 2022). This equates to 11.9 million unemployed people. Where an owner falls below a designated income threshold their registered property is eligible to apply for free basic services with nominal property rates or complete property rates exemptions against the property. Municipalities are required to establish criteria and review annual applications from indigent households to ensure their continued eligibility. Theoretically, indigent status is not granted

⁷¹ Municipal accounts for services prescribe after a period of 2 years, section 118, Systems Act.

indefinitely as the economic status of the indigent family may improve over time. One of the extended applications of an accurate geospatial municipal register of properties is support to the management of the municipal indigent registers. Such reporting could support the verification of indigent applications. Through reviewing the details provided on the municipal registers of properties officials may check that qualifying households meet the municipal criteria outlined in their respective credit control or customer care policies.

Further findings from a financial perspective include using the municipal registers of properties to support budgetary estimations by which objection review and the outcome of valuation appeal board decisions adjust property values and impact on the recurrent property tax revenues. These are reviewed in the next section.

4.7.6 Operational consideration: Managing objection and appeals processes

Objection and appeals processes are likely to apply a downward adjustment to the projected rates revenue; this is known as roll leakage. The objection period is required to commence 21 days after the submission of the certified valuation roll for a minimum of 30 days. The MPRA provides for the municipal valuer to prepare the objection reviews promptly. Thus, the objection outcomes may be unavailable to the municipal budget team ahead of the budget preparatory processes, 31 March, when the draft municipal budget is tabled.

Journal entries in the financial system against the records affected by the objection reviews and appeal decisions must be recorded retrospectively to the effective date of the general valuation roll or the supplementary valuation, whichever is applicable. Where the final correction is a result of an error by the municipality, the calculated correction together with the interest due must be refunded to the property owner. If the decision goes against the ratepayer the amount due without interest (author's own underscore for emphasis) must be calculated and included in the amended rates account. The interest rate prescribed in Section 55(2)(b) of the MPRA is the prime rate levied by the bank at which the primary account of the municipality in question is kept, plus 1 percent, as at the date of calculation by the municipal manager. In the metropolitan and larger municipalities budgeting for interest refunds to ratepayers is considered as a contingency budgetary requirement and may be a material amount. Mapping objections as a layer on the municipal register of properties assists the municipal valuer with the review process and enables the respective municipality to identify areas where no objection applications are received. These areas may be further investigated for possible under-valuation. Irrespectively using a spatial platform enables the valuers and the municipalities to thesis objection incidence and where objection reviews are completed. This application of the municipal register of properties is similar to the general valuation monitoring tool, refer to Figure 4.4.

4.8 CONCLUDING REMARKS

There are various legislative, institutional and operational findings identified with respect to the municipal register of properties and the establishment and maintenance of rates coverage. Part A of the municipal register of properties as the current version of the valuation roll must be integrated with

the financial system to generate the ratepayer accounts for billing purposes. Given the economic constraints it is important that municipalities collect all property rates due and payable. Through generating a discrepancy report between Part A of the municipal register of properties or the current valuation roll against the billing system, municipalities may identify where the municipality may not be billing completely or correctly and take the necessary remedial action.

Municipalities are advantaged through improved revenue management from investing in assembling and maintaining accurate geospatial municipal registers of properties. Conversely there are risks of less successful revenue management if the municipal registers of properties are neither assembled nor maintained. The municipal register of properties maintenance supports the maintenance of equitable property rates and as such, must be continually updated as property attributes change. This thesis finds that a feasible additional role for the municipal register of properties is to support equitable service delivery, utility billing, as well as providing business intelligence to inform revenue management decisions.

The municipal register of properties should provide a schedule of all of the properties in the municipality. An accurate and complete municipal register of properties equates to full coverage whereby every property is categorised and valued as an entry in the valuation roll. Updating Part A of the municipal register of properties through preparing supplementary valuations is provided for whenever necessary, in terms of Section 78 of the MPRA. Full coverage of valuation rolls promotes improved tax efficacies.

A further role for the municipal register of properties is as an accurate geospatial reporting platform against which municipal financial transactions may be reported to National Treasury. Municipalities are required to report all municipal expenditure and revenue against a regional location; these are currently denoted as ward level reporting. The regional reporting segment forms part of the mandatory reporting as prescribed by National Treasury's mSCOA Regulations.

Where the data is accessible through a spatial platform reviewing financial data is transparent. For example, reporting billing discrepancies towards complete and correct billing is accessible, even to non-financial managers. The analysis of discrepancies, anomalies, duplications, zero values etc on a tabular register or a spreadsheet is challenging and frequently obfuscates obvious correlations and possible reasons for poor collection rates. The risk of compromised coverage impacts on municipalities' capacity to execute their constitutional mandate of fulfilling their developmental responsibilities.

In summary, a key finding is that the scope for the establishment and maintenance of municipal registers of properties is differently interpreted. Resultant institutional confusion leads to operational inconsistencies with various methodologies and practices deployed to manage municipal spatial data.

Ambiguous or conflicting legislative provisions between the MPRA and the MFMA are illustrated through the present institutional impasse between CoGTA and National Treasury. The explicit identification of challenges as these pertain to the municipal registers of properties resulting from these defective institutional arrangements should prompt urgent dialogue between the relevant

strategic officials. The outcome should promote improved alignment between the MFMA and the MPRA legislative frameworks within the parameters prescribed by the SDI Act.

Municipal registers of properties are neither checked nor reviewed by any oversight body, neither CoGTA from an MPRA perspective, National Treasury from a financial reporting perspective nor the appointed committee to oversee the responsibilities of spatial data custodians according to the provisions of the SDI Act⁷². In Chapter 5, I investigate the current monitoring and oversight conducted by the relevant stakeholders, municipalities, CoGTA, National Treasury and the SDI Directorate of the municipal registers of properties.

⁷² See Chapter 3, Section 3.2.4 for the review of the SDI Act.

CHAPTER 5: MONITORING AND OVERSIGHT OF THE MUNICIPAL REGISTER

5.1 INTRODUCTION

In this chapter, I investigate current oversight and monitoring provisions identifying the risks of inadequate monitoring and oversight provisions for the municipal register of properties or the current valuation roll. This thesis addresses the coverage extended through the current role provided by the municipal registers of properties, and oversight of the accuracy of the valuation assessments prepared for the purposes of property rating towards developing recommendations for improving rating efficacy.

The introductory section, Section 5.2, provides a case for monitoring and oversight from a theoretical perspective. This is followed by an investigation of the escalating legal and social changes, or the escalating incidence of civil protest actions around inadequate municipal service delivery in South Africa. A study by Fransman and Von Fintel (2024) establishes a statistically significant negative correlation between protest action and service delivery. Improved service delivery is directly correlated to improved municipal revenues. As property rates are a significant contributor to municipal own source revenues⁷³, improved rating efficacy would result in higher municipal revenues and more financially stable municipalities.

This analysis of oversight and monitoring considers how municipal registers of properties are presently monitored to support property rates and municipal revenue reporting and whether there is room for improvement. This is achieved through reviewing the monitoring provisions in the MPRA, MFMA and SDI Act as these are currently used. The MPRA resides under CoGTA, while the MFMA and mSCOA fall under National Treasury. Each legislative framework prescribes its respective oversight functions. The thesis addresses the efficacies of revenue collections and how these could be improved through the geospatial municipal registers of properties.

National Treasury's evaluation criteria for mSCOA compliance are the subscription of all property information into one database, the "single version of the truth". Compliance with the mSCOA Regulations requires the seamless integration between the financial system and the valuation roll management system, while CoGTA's mandate to review compliance with the provisions of the MPRA remains predominately procedural in nature. From the perspective of the SDI Act, this thesis addresses the existing monitoring of spatial data collection, storage and management of the datasets required for the establishment and maintenance of the municipal registers of properties.

This chapter includes consideration of alternative independent monitoring agencies including the South African Auditor General (Auditor General), the South African Information Technology Agency, the Office of the Valuer and the role of the valuers' profession, with respect to the provision of relevant oversight and monitoring. With further reference to Poister *et al* (2013) consideration is extended to the allocation of an appropriate agency for executing the monitoring function noting the

⁷³ Refer to Chapter 1, Figure 1.1.

merits of an independent monitoring agency as implemented in New Zealand⁷⁴. The South African Auditor General is an independent oversight agency that extends oversight of annual municipal financial reporting requirements.

5.2 THE CASE FOR MONITORING AND OVERSIGHT

Drucker (1994) defines the effectiveness of any given performance measure as dependant on how it will be used. There is an assumption that performance management is a useful tool for increasing the effectiveness of the relevant industry segment thus promoting the need for structured monitoring and evaluation. Benchmarking is defined as the process of identifying the highest standards of excellence for products, services or processes and then making the necessary adjustments to reach “best practices” (Bhutta & Huq, 1999). Questions in public sector management revolve around how to establish these performance goals, the allocation of the most appropriate agency for executing the monitoring function and the use of comparable performance information to achieve effective productivity and improved results in terms of quality (Poister *et al*, 2013). The caveat articulated by Ammons and Rivenbank (2008) advises that claims of oversight and monitoring in influencing decisions and improving services tend to be broad and disappointingly vague.

The essence of benchmarking is the process of identifying the highest standards of excellence for products, services or processes, and then making the improvements necessary to reach those standards – commonly called “best practices”.

This review of the monitoring requirements for property rating follows the established chronological sequence of this thesis - investigating the monitoring of municipal registers of properties from legislative, institutional and operational, or in this case, procedural perspectives. Specific focus is directed to the oversight of property data required to establish and maintain the municipal registers of properties, the current valuation rolls. Given that both municipal officials and private sector valuation service providers fulfil the designations of the municipal valuer, there is a compelling requirement for an agreed standard for preparing and maintaining current valuation rolls⁷⁵ or Part A of the municipal registers of properties.

The introductory commentary to this chapter provides contextual background about perceptions of limited public confidence in the integrity of valuation rolls, evidence of inexplicable valuation shifts and irregular rating processes in South Africa.

⁷⁴ **Refer to Section 2.7.1 for the review of the application of land information and land administration systems in a developed country - New Zealand’s LINZ system.**

⁷⁵ See Chapter 4 for a critical review of the municipal registers of properties as these are currently implemented from legislative, institutional and operational perspectives.

5.3 LEGAL AND SOCIETAL CHANGES

The public is increasingly critical of valuation and rating processes implemented under the MPRA, citing concerns about transparency and perceived defects. The MPRA mandates a general valuation every four years by metropolitan and five years by local municipalities. The publication of certified valuation rolls and raising of rates accounts are the catalyst for media commentary. The MPRA was promulgated in 2005 and only implemented from 1 July 2006. The relatively recent enactment results in limited case law.

In 2018, the Supreme Court of Appeal upheld a ruling compelling the City of Tshwane, Gauteng Province, to set aside the exorbitant rates regime. A commercial property value escalation from R3,750,000 in the 2015 general valuation roll to R13,870,000 in the 2020 general valuation roll underscored the lack of ratepayer confidence in the accuracy of valuations and placed question marks over the integrity of the valuation roll as a platform for levying fair and equitable property rates. In 2022, the Pretoria High Court instructed the Tshwane Metropolitan Municipality, to refund ratepayers unlawfully charged property rates dating back to 2011. The 2019 general valuation roll for Msunduzi Local Municipality, a B1 high-capacity municipality in KwaZulu-Natal, was criticised for being fatally flawed, leading to unfair rates increases and a petition from ratepayers. The City of Johannesburg's valuations and rates departments (a metropolitan municipality in Gauteng) used outdated rates policies, resulting in an unheralded change from residential to commercial tariffs for most residential properties, without any change to property attributes. This led to prejudicial overbilling to residential property owners. Rates Watch, a civil ratepayer's watchdog, noted that approximately 20,000 properties out of a total of about 200,000 parcels were either omitted from or incorrectly valued in the "Main" Ekurhuleni Metropolitan (Gauteng) Valuation Roll, 2019. Buffalo City Metropolitan Municipality's (Eastern Cape) roll was described as "Buffalo City rates value shock: Buffalo City Metro residents are discontented at the city's new property valuations" (Dispatch Live, 2018). The City of Cape Town experienced civil backlash with proposed increases in property rates and other utility charges for their 2022/2023 financial year.

Court judgements are slowly but surely contributing to the clarification of certain complex provisions in the rating and municipal finances dispensation. To date there has been no court ruling on the withdrawal or total cancellation of valuation rolls that media reports contend are fatally flawed. The preceding paragraphs narrate a range of issues pertaining to both valuation and rating processes. The subject of this chapter is how property rates efficacies including transparency may be addressed through more effective quality assurance and monitoring. This thesis's findings assert the need for improved monitoring and oversight.

5.4 MONITORING AND OVERSIGHT: FROM A LEGISLATIVE PERSPECTIVE

According to Daud *et al* (2013), the quality and quantity of data, whether the valuations were conducted using manual or automated methods, and an assessment of the impact of the value of the new valuation roll against the previous roll require investigation. The quality and quantity of data

are pertinent to both the tax base coverage and the accuracy of the valuations recorded in current valuation rolls, Part A of the municipal registers of properties.

5.4.1 MPRA monitoring and oversight

Following the initial promulgation of the new rating legislation, the MPRA, there was limited information and inadequate stakeholder understanding of the new rating legislation⁷⁶. The case law as well as media references mentioned in the preceding paragraphs evidence public perceptions that valuations prepared for the purposes of rating are flawed and that municipalities may not be fully compliant with all of the legislative requirements. Civil society is becoming increasingly sophisticated in their challenges of municipalities and the state of local government. The MPRA provides for fair and equitable valuations with recourse to both objections to any information included in or omitted from the valuation rolls and the right to appeal against any review decision. These provisions enable the rate-paying public to review and assess the details of the valuation rolls, an effective oversight mechanism.

The initial consideration from a legislative perspective addresses the omission in the MPRA for the prescription for municipal registers of properties to be geospatial. Section 23 of the MPRA states that a municipality must draw up and maintain a “register” in respect of properties situated within that municipality, consisting of Part A and a Part B. The omission of “geospatial” is obvious. The insertion of the geospatial requirement for the property register may be achieved through the promulgation of a MPRA regulation. With this reform in place GIS practitioners, (whether internal municipal resources or service providers) would be compelled to provide the municipal register of properties as geospatial databases.

Section 81 of the MPRA provides the prescribed oversight reporting assigned to provincial CoGTA. This provision entirely omits any mention of the municipal register of properties. This poses risks to municipalities in that the coverage of their newly prepared general valuation roll may be incomplete, with implications for the rates revenue generation for the validity period of the general valuation.⁷⁷ The MPRA’s prescribed monitoring frameworks also omit any reference to the Part B reports for the municipal register of properties. The Part B reports could serve as an instrument to cross-check the income forgone reported to National Treasury against the extension of discretionary rates relief.

As the implementing agents of the MPRA, municipalities ought to be the first line of monitoring and oversight for both the completeness and the accuracy of their current valuation rolls. However poor contract management and inadequate municipal capacity in combination with possible underperformance by contracted valuation service providers contribute to limited oversight or meaningful quality assurance by the municipalities themselves. There is no monitoring framework

⁷⁶ The MPRA was promulgated in 2004, effective from 2 July 2005. This meant it could only be implemented from 1 July 2006 as the commencement of the municipal financial year is from 1st July.

⁷⁷ The validity period for general valuations is 4 years for metropolitan and 5 years for local municipalities.

for accuracy of the market value assessments contained in the valuation rolls aside from Section 82 of the MPRA.

It is the responsibility of the municipal valuer to ensure that both the valuation methodology and the contributing data is accessible to the municipality. The success of a municipality's review of the draft values is a function of municipal capacity. Municipal officials are frequently compromised by not understanding the valuation processes nor being unfamiliar with the market trends in their municipalities. This capacity constraint returns limited useful input from the municipality to the valuation service provider ahead of finalising the general valuation rolls.

The MPRA does not prescribe any specific valuation methodology, nor are physical property inspections mandatory. The comparable sales method is universally understood as the most appropriate valuation methodology for the value determination of residential properties. This valuation approach requires the analysis of recent sales of similar properties transacted around the date of valuation to inform the determination of value. General valuation contracts ought to include explicit deliverables for these sales analyses and market reports. Failure by municipalities to request these market reports, even as draft versions, to enable their review of both the draft values and the ongoing supplementary valuations is, in my opinion, a dereliction of the municipal contractual oversight. Equally, for valuation service providers to submit these market reports at the end of their project term is merely fulfilling a contractual obligation, or a tick box to release the retention payment. Such reports have absolutely no utility at the end of the project term or roll cycle.

Additionally, there is no prescribed template for the market reports. It is recommended that market reports should be prepared for each category of property, in each neighbourhood, group of properties or homogeneous area. An upper and lower value threshold should be determined. Outliers, or modelled valuations that fall outside of a pre-determined range, for example 40 percent of the median from the established market value, should be investigated. These values should be either overridden by the valuer's discretion or identified for their unique value in their respective neighbourhoods or property groups. Operationally, the municipality relies on these market reports as their monitoring instrument, both for the assessed values in the general valuation roll and for the preparation of supplementary valuations and the maintenance of rating equity for the entire validity period of the valuation roll.

Once the valuation roll, whether a general or annually published supplementary roll, is published the MPRA extends responsibility to civil society, most specifically to the registered owners of property, to review the published valuation rolls. Ratepayers can review and, if necessary, object to any content included or omitted from the valuation rolls⁷⁸. Processing objections and the subsequent appeal applications that follow should an objector be dissatisfied with the outcome of the objection review has financial implications for municipalities in terms of administration, valuation services and paying the costs of valuation appeal board hearings heard on a case-by-case basis. Additionally, should the valuation appeal board decision go against the municipality, the municipality must refund

⁷⁸ See Section 4.2.1 for the review of the objections and appeals processes.

the ratepayer the amount due together with interest, prescribed as prime rate plus 1 percent. The municipality also has recourse to lodge objections against its own valuation roll.

In terms of Section 81(1) of the MPRA, provincial CoGTA departments have statutory obligations to monitor compliance with the legislative framework. The provincial monitoring framework provides compliance reporting on identified procedural milestones in the process of preparing the general valuation roll. These procedural milestones detailed in Table 5.1 include the council resolution adopting the date of valuation, the designation of a municipal valuer, the submission of a project plan for the preparation of a general valuation roll, as well as the respective dates for these identified procedural milestones.

Table 5.1: Provincial monitoring requirements in section 81 of the MPRA

MPRA reference	Provincial monitoring and reporting requirements
81(1)	The MEC for local government in a province must monitor whether municipalities in the province comply with the provisions of the Act.
81(1A)	Critical milestones must guide monitoring, these include but are not limited to:
81(1A)(a)	A municipality must determine its date of valuation;
81(1A)(b)	A municipality, without in-house capacity must advertise for the appointment of a valuer;
81(1A)(c)	A municipality must designate a municipal valuer;
81(1A)(d)	A municipal valuer must submit a project plan;
81(1A)(e)	A municipal valuer must submit a certified valuation roll to the municipal manager by the prescribed date, 31 st January preceding the use date.
81(1)(B)(a)	A municipality must submit a project plan to the MEC outlining the detailed actions for the valuation of properties in the municipal area, indicating when valuations will commence and will be finalised including the following milestones:
81(1)(B)(a)(i)	The date of valuation for the next general valuation and the date by which this will be determined;

81(1)(B)(a)(ii)	The date by which the municipality will advertise for the appointment of a municipal valuer;
81(1)(B)(a)(iii)	The date by which the municipality will designate a municipal valuer;
81(1)(B)(a)(iv)	The date by which the municipal manager will submit quarterly progress reports to the MEC that are based on the municipal valuer's monthly reports;
81(1)(B)(a)(v)	The intended date by which the municipal valuer is to submit the certified valuation roll to the municipal manager.
81(1)(B)(b)	The municipality must no later than 10 days after the date on which each milestone referred to should have taken place submit a report to the MEC regarding the status of the milestone, and if the milestone has not been achieved, the remedial actions to rectify the failure to deliver on the milestone and any deviation from the action plan that will impact on the submission date of the certified valuation roll;
81(1)(C)	A municipality must submit to the MEC such information, reports, documents, explanations and motivations as may be required by the MEC;
81(1)(D)(a)	The Minister may, by notice in the Gazette, determine to which municipalities the provisions of this section apply;
81(1)(D)	A determination may differentiate between municipalities in terms of categories, types or budgetary size or any other manner;
81(2)	If a municipality fails to comply with a provision of the Act the MEC may take any appropriate steps to ensure compliance including proposing an intervention by the provincial executive in terms of Section 139 of the Constitution.

Source: Author's own summary of Section 81 of the MPRA.

The compliance milestones prescribed in Section 81 do not specifically mention the preparation of the municipal registers of properties, nor reference any required input data to assemble or maintain the municipal registers of properties. KwaZulu-Natal CoGTA MPRA Monitoring Team called for various data extracts and reports to monitor the progress of the preparation of general valuation rolls.

The provincial CoGTA departments for KwaZulu-Natal and the Western Cape request the submission of draft general valuation rolls. The intended purpose of the draft roll review is to verify the accuracy of the draft values determined by the municipal valuer and to check that all property

records from the previous valuation roll are included in the new general valuation roll. The loophole in this oversight approach is that should a property record be excluded from the previous valuation roll, it is probable that it will also be omitted from the new general valuation roll. The exception is where geospatial municipal registers of properties are used as the reporting platform to identify such discrepancies. Without spatial analysis, reconciliation of the valuation and billing datasets is limited. The ability to establish property discrepancies through viewing a map is far easier than discerning these details from a spreadsheet. The assembly of an accurate geospatial municipal register of properties⁷⁹ would mitigate these risks and advance full coverage by the valuation roll.

There is also no monitoring for the ongoing updating of the current valuation roll or Part A of the municipal registers of properties,⁸⁰ as property attributes change, and supplementary valuations are prepared. If not properly executed the coverage of the tax base and, therefore, the equity of the property rates may be compromised.

The chronological history of changes to property attributes and the evolvment of records should be retained for audit purposes. For example, when a property is sub-divided, the parent property record should be superseded by the new property records reflecting the separate subdivisions. Omission to remove the parent property record leads to a duplicated entry with the new subdivisions, as well as the original parent property record retained in the property register. Industry vernacular refers to the original property record as 'dead'. The geospatial property register enables the status of the new property records to be superimposed over the 'dead' property, thus retaining the transaction history. The example cited above is simple. The more complicated the transactions, the more motivation there is for the various data movements to be captured in the spatial property register. The key finding is that the failure to use a geospatial municipal register of properties presents operational risks to the municipalities, as this pertains to the maintenance of the municipal registers of properties and updating of their current valuation rolls.

The KwaZulu-Natal CoGTA Department monitoring includes an exercise to support the alignment between the current valuation roll, Part A of the property register, and the municipal billing. In a personal communication, Michael Moya, MPRA Project Team, KwaZulu-Natal CoGTA Department states that this monitoring requirement supports municipalities to identify and implement the necessary corrective action (Moya, 2022). The limitation of these provincial monitoring reports is that these reflect a snapshot in time rather than the ongoing synchronisation required for accurate and complete billing.

In addition, the evolving structure of the provincial reporting templates makes the compilation of these reports onerous for both municipalities and their appointed service providers. It is recommended that the monitoring report templates are standardised so that they may be automated and, ideally, generated from the VRMS. My experience indicates that there is inadequate follow-up

⁷⁹ See Chapter 1, Figure 9 for the illustration of how property discrepancies in the municipal register of properties are identified.

⁸⁰ See Section 4.6.2 for the detailed review of updating the current valuation roll.

by the monitoring department on whether the identified remedial actions are implemented by the municipalities. While all provincial CoGTA departments have the same monitoring mandate, their respective approaches differ substantially between the provinces. In my opinion, KZN CoGTA's dedicated MPRA Team is demonstrably more vigilant than the other provincial departments. Ackerman *et al* (2022) mention their awareness of provincial monitoring in Gauteng province. These authors conclude that national CoGTA is not monitoring what the different provinces are doing in terms of monitoring the MPRA.

In summary, all provincial CoGTA departments have statutory obligations to monitor compliance with the legislative framework, specifically the preparation of general valuation rolls and the maintenance of current valuation rolls (Part A of the municipal registers of properties). The lack of formal oversight and monitoring for the ongoing updating of municipal registers of properties is a significant finding. The current monitoring framework provides compliance reporting on procedural milestones, such as council resolutions, designations of municipal valuers, and submission of project plans. However, the compliance milestones do not specifically mention the preparation of the municipal registers of properties or details of any required input data. Standardisation of monitoring report templates is recommended to enable automation.

The following section analyses the national department's monitoring functions. Section 82(1) of the MPRA provides for national monitoring and reporting. This reads:

"The Minister of Local Government may monitor and from time to time investigate and issue a public report on the effectiveness, consistency, uniformity and application of municipal valuation for rates purposes."

This provision provides for studies that may include ratio studies of valuations to sales prices and other statistical measures to establish the accuracy of valuations for the purposes of municipal rating. National CoGTA reviewed the status of use of 71 municipalities (CoGTA Annual Report, 2021). This report was prepared for the purposes of the annual report and as such remains unpublished.

The amendments to the MPRA, 2014 (Act 29 of 2014) revised the national monitoring provisions. The amendments include provisions for municipalities to submit reports, in such form and at such intervals as may be prescribed by the Minister on the use of the provisions of the MPRA relating to various matters. The monitoring reports are detailed in Table 5.2. The reports requested by National CoGTA, on behalf of the Minister, include compliance with prescribed rating ratios, - Section 82(A)(b). These refer to the ratios between residential and other property categories. The ratios are referenced as rate randages published in the annual municipal resolution for the levying of property rates. The shortcoming with the Section 82 provisions is that these have not yet been implemented by CoGTA and certain timeframes and report intervals are yet to be prescribed. Ackerman *et al* (2022: 211) state that "CoGTA has not yet formally actioned Section 82".

Table 5.2: National monitoring requirements in section 82(A) of the MPRA

MPRA reference	Reporting requirement	Reporting Source
(a)	Categories of property determined, the cent in the Rand rates, and any discretionary rates relief determined for categories of property owners;	Rates policy contains prescribed categories of properties. This policy must be reviewed annually, Section 5. The rates policy includes criteria for discretionary rates relief. Part B of the property register is the annual report that quantifies discretionary rates relief or income foregone, Section 23(5). The rates randages are published in the municipal tariff advertisement and the annual resolution levying of rates, Section 14, MPRA.
(b)	The ratios between residential and all other categories of property;	The rates randages are published in the municipal tariff advertisement and the annual resolution levying of rates, Section 14, MPRA.
(c)	Total rates revenue;	Valuation roll statistical report generated from the valuation roll management system. No date is prescribed for this report.
(d)	Total rates revenue per category of property;	Valuation roll statistical report generated from the valuation roll management system. No date is prescribed for this report.
(e)	Total revenue foregone in respect of any properties subject to partial exclusions or discretionary rates relief;	Part B of the property register is the annual report that quantifies discretionary rates relief or income foregone, Section 23(5). No date is prescribed for this report.
(f)	Any other matters prescribed or provided for in the Act.	Nothing to date - 2024.

Source: Author's own summary of the provisions of Section 82(A).

CoGTA's national minister, in a directive to municipalities entitled 'Valuation Roll Property Register / Draft Roll - October 2022', requested municipalities to supply datasets from their current valuation roll, Part A of the property register, and their billing system. The spreadsheet accompanying the report's instructions detailed requirements for a SG code to be supplied for each property record. The request for the Surveyor General's code used interchangeably, albeit in

spreadsheet format, indicates that geospatial reporting may be included in future reporting instructions. Furthermore, the national monitoring provisions have monitored compliance with the prescribed categories of properties, - Section 8(2)(a-j), the formal designation of municipal valuers and the date of general valuation. National CoGTA reviewed municipal rates policies and sent municipalities written recommendations to address identified shortcomings.

Towards investigating the impact of the current national monitoring provisions, I analysed a sample of 15 municipalities of various classifications to establish whether the areas of non-compliance identified by CoGTA were addressed in the following year's findings.

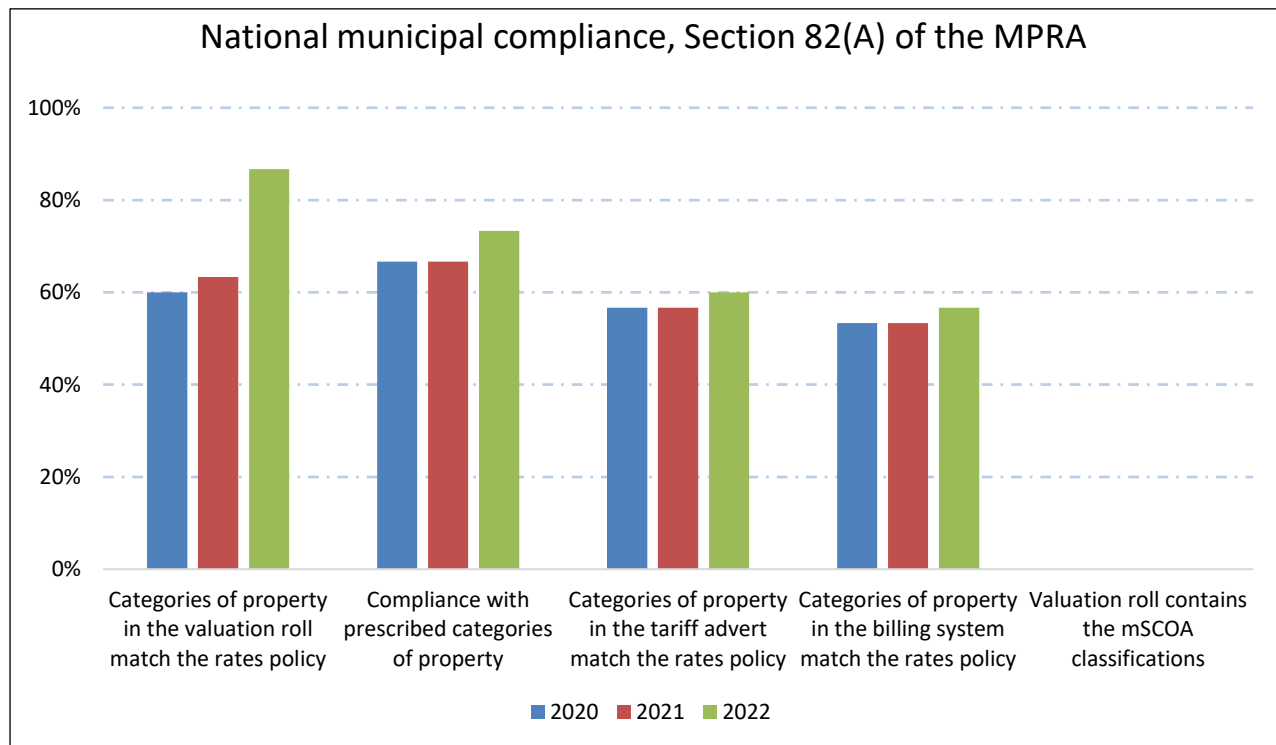
The following compliance aspects were considered:

- Alignment of the categories of properties defined in the municipal rates policies with the categories of properties reflected in the valuation rolls,
- Adoption of the prescribed categories of properties, Section 8 of the MPRA,
- Alignment of the categories of properties in the annual tariff advertisements with the categories of property in the billing datasets,
- Match between the categories of property in the billing datasets against the categories of properties reflected in the rate policies, and
- The inclusion of the mSCOA chart classification in the valuation rolls as a 'prescribed particular', provided for in the MPRA – Section 48(g).

The analysis was conducted over a 3-year period. Municipal compliance with the prescribed categories of property was mandatory from 1 July 2021 with a period of 7 years provided for the adoption of these prescribed categories of properties.

Figure 5.1 indicates full and partial compliant statuses between the categories of properties in the rates policies, valuation rolls, annual published tariff advertisements and the category of property match between the rates policies and the billing systems from a sample of municipalities of varying classifications over the 3-year period, 2020-2022. There is a discernible upward trend from partially compliant to more fully compliant. Notably no municipality in the sample achieved a fully compliant status. This evidence raises questions about the effectiveness of the national monitoring initiatives suggesting room for improvement.

Figure 5.1: Categories of properties, an illustration of municipal compliance with Section 82(A) of the MPRA over a three-year period



Source: Author's own compilation based on rates policies, tariff advertisements and valuation rolls

The assessments or valuations in the valuation roll form only one side of the rating equation for recurrent property taxation. The other side is the tariffs, also known as rate randages. The tariff is multiplied by the valuation for the purposes of calculating the property rates due to the municipality. The MPRA permits differential rates for different categories of properties and discretionary rates relief⁸¹. Both the rates and the relief are determined by municipalities through their annual budgetary processes. The supervision of the municipal rates revenue including disclosure of discretionary relief from rates or revenue foregone is a National Treasury function. In the next section I review National Treasury's monitoring and reporting mandate, with the focus on the current roll or Part A of the municipal registers of properties. A research objective of the thesis is to identify whether and, if so how, the municipal registers of properties could play an extended role to support more complete and correct municipal billing and contribute to more financially sustainable municipalities.

5.4.2 Municipal Finance Management Act monitoring and oversight

National Treasury initiated a swathe of business reforms through mSCOA⁸². The mSCOA reforms support uniform reporting and more financially sustainable local government. Enwereji and Uwizeyimana (2019) found that key factors affecting municipal financial accountability in South Africa

⁸¹ Refer to Section 4.2.1 for the review of differential rating and discretionary rates relief.

⁸² Refer to Section 4.2 for the review of mSCOA reforms.

include financial misappropriation, inability to achieve clean audit reports, and limited capacity of financial officials to implement effective internal control measures. The authors identified limited performance benchmarking, risk management, inadequate financial management, and poor performance of Municipal Public Accounts Committees as contributing factors.

The MFMA's mSCOA Regulations merely note "Section 23" [of the MPRA] as the source for prescribed regional segment reporting. The mSCOA chart fails to expand fully on this provision nor reference the relevant act. Explicit reference to geospatial property registers in the chart would serve to improve the success of the regional segment reporting prescribed by National Treasury through the MFMA as well as enhance monitoring the coverage for the purposes of recurrent property taxation.

The MFMA Circular 93, 2018, prescribes quarterly reports containing reconciliations of the Part A of the property register or the current valuation rolls with the respective billing data in the financial system. The purpose of this oversight is to check that the anticipated revenue from property rates is based on actual figures i.e. safeguarding against unrealistic or unattainable collection rates. The relevance of including reference to the National Treasury report illustrates the inadequate understanding of the manner in which current valuation rolls or Part A of the municipal registers of properties are updated. The National Treasury Circular 93 reports and the monitoring reports requested by national and provincial CoGTA are alike. Municipalities express frustration about duplicated reporting requests or, alternatively, are unaware as a different municipal department compiles the respective reports, possibly even with different inputs. A comparison between the evidence presented in the Circular 93 reports and the CoGTA valuation to billing reports has not been undertaken, but is worthy of further investigation, specifically to motivate for the extended role of the geospatial municipal property registers.

To achieve correct and complete municipal billing alignment between the financial system and the valuation roll contained in the VRMS and the prescribed categories of property, as well as the rating tariffs for the different categories of property in the mSCOA, the chart should match. An identified reform is to include the mSCOA classification as a prescribed particular⁸³ in the contents of the valuation roll prescribed in Section 48 of the MPRA. The MFMA's mSCOA Regulations are prescribed and are therefore enforceable. Such monitoring reform could provide a useful cross-check between the category of property in Part A of the property register or current valuation roll against respective billing details in the municipal financial systems. This would advance the objective of complete and correct billing.

The other related aspect of Treasury's reporting reforms is the requirement for municipal transactions to be reported against a regional segment. To achieve this municipalities, require a geospatial property register. The stated purpose of the regional segment is:

⁸³ Refer to Section 5.4.1 for details of the proposal from the MPRA perspective.

“Communities need to see where in their daily lives service delivery (sic) is occurring. Only through planning and physical delivery can these services be communicated and reported effectively.”

(Republic of South Africa: National Treasury, 2021)

The intention of effective financial reporting is to support the evaluation of resource allocations in municipalities, to enable monitoring of these at a district municipal level within the parameters of the national Spatial Development Framework⁸⁴.

Each municipality's Service Delivery and Budget Implementation Plan (“SDBIP”) details service delivery and service budget reporting for both capital and operational projects. This forms the basis for monitoring the municipality's performance in respect of service delivery. mSCOA's regional segment reporting indicator provides details on municipal transactional information at ward level, currently prescribed at the lowest geographical level. Municipal spending, revenue collection, capital, and wealth creation must be reported as a geographic view or in a geospatial report, the regional segment indicator. This thesis finds that successful mSCOA regional segment reporting relies on an accurate and complete geospatial property register. Personal communication with Jan Hattingh, Chief Director: Local Government Budget Analysis, National Treasury, is that the prescribed reporting level may evolve to erf (individual property) level (Hattingh, 2022)⁸⁵. As municipalities are required to both assemble and maintain such registers of properties in terms of the MPRA, this database is, or should be, already available in municipalities. Poor engagement and an inadequate understanding of the provisions of the MPRA by National Treasury are possible reasons for the extended utilisation of the geospatial municipal registers of properties being overlooked as a reporting instrument.

The use of the mSCOA reforms has been an enormous undertaking for all stakeholders. Integrated financial system vendors were compelled to modify or even rewrite their systems to meet National Treasury's functionality specifications. The various valuation roll management systems and applications currently deployed by municipal valuers are not all seamlessly integrated with the municipal financial systems as prescribed. Valuation systems, used by municipal valuers procured from the private sector, operate externally to the municipal system environments⁸⁶. This reality compromises the prescription by the mSCOA Regulations for an integrated software solution in municipal systems' environments. In my opinion, one of the greatest risks to property rates efficacies is the generation of the valuation rolls, especially the general valuation rolls, externally to the municipality. This eventuality leads to the municipality uploading spreadsheets containing the valuation records supplied by the municipal valuer to their financial system. Without the internal controls prompted by the automated reconciliation between the VRMS and the billing systems, data

⁸⁴ Refer to Section 3.2.2 for the review of the municipal Integrated Development Plans and the National Spatial Development Framework.

⁸⁵ Personal communication with Jan Hattingh, Chief Director: Local Government Budget Analysis, National Treasury (September 2022).

⁸⁶ See Section 4.5 for the review of the VRMS.

risks are inevitable. Such risks include the published rolls, the version certified by the municipal valuer, being at variance to Part A of the municipal registers of properties or the billing rolls in the financial system informing the rates accounts. An effective reform would be to regulate the deployment of the VRMS for all municipalities, so that all valuation rolls are generated by systems in the municipal systems environment. To date there has not been any formal evaluation of the functionality, nor the integration performance of the VRMS by either National Treasury or CoGTA.

The preceding sections reviewed the MFMA and the MPRA's monitoring provisions from the perspective of the municipal registers of properties respectively. The next relevant legislation for monitoring the municipal registers of properties is the SDI Act. The monitoring provisions in the SDI Act are investigated in the section to follow.

5.4.3 Spatial Data Infrastructure Act (SDI Act)⁸⁷

The introductory comments provide context for the status of spatial data as a fundamental for prescribed regional segment reporting. Hlela *et al* (2016) criticise the SDI Act for not being explicit in defining the criteria for geospatial datasets, nor clearly identifying who the data custodians are or ought to be. This opinion is supported by Mey *et al* (2020) who state that, while South African spatial data is available, it is, in most cases, poorly captured, co-ordinated, collated, maintained and presented. In his 2019 Presidency Budget Speech, President Ramaphosa noted South African government structures' propensity for establishing operational silos - that is different departments in each sphere of government with their own independent datasets to support their work processes. It is my observation that this phenomenon is not necessarily limited to spheres of government departments but is also prevalent in individual municipalities.

In this section I review the input datasets⁸⁸ required for the establishment and maintenance of the municipal registers of properties and posit whether the current monitoring instruments provided by the SDI Act may be improved. The study conducted by Drimie *et al* (2012) found that the SDI is not adequately explicit on the spatial function or the custodianship of the base datasets. The definition of a data custodian is criticised for being so broad that it may apply to any institution capturing spatial information. The finding is that the definition of base datasets in the SDI Act should be more narrowly defined.

With reference to base datasets, the South African Deeds Registry is the land registration authority, while the Surveyor General's Office is responsible for the cadastre. Tang *et al* (2011) confirm that a good-quality land registration system plays an indispensable role in supporting property appraisal. In addition to the ownership or registration details, the Deeds Registry is also the source of property transaction records that provide property sales data. This data source supports the valuer's determination of market values. Criticism of the Deeds Registry is the lagging registration

⁸⁷ See Section 3.2.4 for the review of the SDI Act.

⁸⁸ See Section 3.1 for the legislative review of input datasets for the municipal registers of properties.

processes, sometimes just a few months but on other occasions protracted periods. This impacts on the currency of the deeds data available for inclusion in the municipal registers of properties.

The second primary input dataset for geospatial municipal registers of properties is the cadastre or the spatial data. The Office of the Surveyor General is responsible for these cadastral datasets, both the registered and unregistered layers. The Surveyor General's diagrams frame, with a few exceptions, the unique designation of the property, together with boundary descriptions, corner beacons and the extent of each property nationally. Spatial cadastre indicates the physical location of each property parcel and assigns each property parcel a unique identifier. The unique identifier currently used to identify each property parcel or cadastral unit is an alpha numeric cadastral SG 21-digit code⁸⁹. There are notable shortcomings with the Surveyor General's code in its current 21-digit format.

A professional engagement between a representative group of appointed municipal valuers and representatives of the South Africa Geomatics Institute towards addressing the shortcomings of the SG 21-digit code culminated in the development of a practitioner's guide⁹⁰ for the assembly and maintenance of municipal registers of properties. The collaboration developed an expanded Surveyor General's code, a 32-digit code. This expanded code accommodates all of the exclusions of properties presently unaccommodated in the SG 21-digit code. Currently CoGTA-KwaZulu-Natal have adopted a similar expanded Surveyor General's code containing 26-digits. The dissimilarities in the business rules applicable to the different naming protocols, SG 32-digit and SG 26-digit, result in industry confusion.

In addition to providing the unique identifier for properties, the SG code is also used as the common data field between municipal financial systems and the VRMS. The prescribed integration of the municipal systems or seamless data exchange is facilitated through either an Automated Programmatic Integration (API's) or secure File Transfer Protocols (FTP's). The adoption of the expanded 32-digit SG code enables municipalities to match the property records in the municipal register of properties (current valuation roll) with the individual municipal accounts on a one-to-one basis. Adoption of the proposed reform to standardise property naming would support accurate billing for both property rates and other utilities. It is acknowledged that, initially, seamless data integration may not be entirely smooth as the data may be imperfect. However, through ongoing iterations and accompanying data cleansing efforts this objective could be realistically attained. The impact of achieving data interoperability would enable government, specifically municipalities, to streamline their data management and improve organisational efficiencies.

Data custodians are defined as "An organ of state or an independent contractor engaged in the exercise of a public power, or performance of a public function which captures, manages, maintains, distributes or uses spatial data ..." (SDI Act, refer to Section 3.2.4).

⁸⁹ See Section 3.3.2 for the review of the SG 21-digit code.

⁹⁰ See Section 3.2.4 for the details of the Practitioner's Guide for the Assembly and Maintenance of Municipal Property Registers (2020).

The finding of this thesis is that the municipal register of properties should be recognised as a critical base dataset and the SDI Directorate should nominate local and metropolitan municipalities as the appropriate data custodians for the assembly and maintenance of municipal registers of properties. The SDI Act is premised on responsible custodianship and the perfection of base datasets, not just the meta data but the base datasets. As such, municipalities, as the respective data custodians, would be obliged to adhere to all standards and prescriptions provided for in the SDI Act. Sound data governance as well as the use and maintenance of metadata is part of the SDI's Data Custodian Policy.

The development and adoption of spatial data standards addresses the fundamental prerequisites of property data accessibility and interoperability for an increasing number of stakeholders. The principles for spatial data infrastructure (Tonchovska *et al*, 2012) must be understood and used. These include the principle that data should be collected once and effectively maintained, that spatial data should be interoperable, and readily and transparently available. Hjelmager *et al* (2008) write that the spatial data infrastructure should be enabled to be part of a wider e-government initiative. It is noted that intergovernmental initiatives in South Africa have the propensity to be lengthy.

The development of benchmarks and tools is required to ensure that the data available on these property information platforms is both accurate and accessible. Tija and Coetzee (2013) and Lemmen *et al* (2021) state that where data standards are in place, the interoperability between the cadastral systems and other related datasets improves accessibility and data exchange between local, national and international organisations and other parties. In South Africa this is not aspirational but an operating necessity.

Kuusaana (2015) supports the adoption of a standard or domain model⁹¹ as contributing positively to the effectiveness of land information infrastructure. The ISO 19157-1:2023 Geographic information – Data quality, is reviewed to illustrate the contents of an international spatial data standard. This standard establishes the principles for describing the quality of geographic data.

This standard defines –

- a well-considered system of components for describing data quality;
- the process for defining additional, domain-specific components for describing data quality;
- components and the content structure of data quality measures, general procedures for evaluating the quality of geographic data; and
- principles for reporting data quality.

This standard is applicable to data producers to describe the required quality specifications and evaluate how well a dataset conforms to its product specification. The standards are also used by

⁹¹ Refer to Section 3.5 for the review of the land administration system options for South Africa.

data users attempting to determine whether specific geographic data is of sufficient quality for their application.

Alternatively, at a technical level, the South African Director General, Land Survey, could be mandated to address the accuracy of the municipal registers of properties. This proposal is currently provided through Section 2, Land Survey Act, 71 of 1972, whereby the Director General of Land Survey must oversee such geodetic, topographical and cadastral surveying in South Africa. The monitoring function for the municipal registers of properties could also be addressed through a MPRA regulation. Such a regulation would prescribe that the party or data custodian responsible for the establishment and maintenance of the municipal registers of properties complies with the Land Survey Act.

These reform options would enable the municipal register of properties to be interoperable, passed from one service provider to the next, between municipalities, exchanged between local, district, provincial and national government, or extended to users in the private sector. Further motivation for this reform is extending access to a system or database. As referenced in Section 2.8.1, the practice of Creative Commons in New Zealand endorses the principle that the more users a database has, the greater the opportunity for data correction and improved data integrity.

Thus, the simple adoption of standard naming protocols for properties would enable data to be interoperable, streamlining data management without disruptions through system incompatibility or human intervention. The protection of data is a further consideration with interoperable data enjoying a higher degree of data privacy and security.

The prevalence of governmental silos and fragmented datasets is clearly identified throughout this thesis. This next section investigates the institutional arrangements with respect to the oversight of spatial data and towards findings to improve access to and sharing geospatial data beyond the confines of a single municipal department.

5.5 INSTITUTIONAL CONSIDERATIONS FROM A MONITORING PERSPECTIVE

5.5.1 Introductory comments

This section's includes a review of the relevant internal and external, government and private sector institutional arrangements, as these pertain to the monitoring and evaluation of municipal registers of properties.

The institutional review addresses the following issues from a monitoring perspective:

- Consideration of the internal institutional arrangements in municipalities for the assembly and maintenance of the municipal property register;
- A qualitative assessment of the capacity of municipalities to prepare and maintain the municipal registers of properties/current valuation rolls;
- Relationships between the key national departments primarily CoGTA, the custodians of the MPRA, National Treasury, responsible for supervising municipal finances

(MFMA) and the Department of Agriculture, Land Reform and Rural Development, responsible for the SDI Act;

- The potential for the SDI Directorate and the South African Information Technology Agency to contribute to the institutional dialogue around monitoring the assembly and updating of the municipal registers of properties; and
- Consideration of other organisations that may contribute to the oversight and monitoring of municipal registers of properties.

5.5.2 Institutional considerations: Municipalities

The investigation of the institutional arrangements around the monitoring and evaluation of municipal registers of properties starts at a municipal level. Within municipalities themselves there is inconsistency about which department or business unit is responsible for the municipal property register and valuation roll functions. Responses to this enquiry vary across different municipalities from Corporate Services to Finance Departments.

Designated municipal valuers must be registered as a professional or a professional associated valuer in terms of the Property Valuers Profession Act 47 of 2000. These designated professionals are responsible for the allocation of the category of property category based upon the actual use and the determination of the market value of all properties in current valuation rolls, Part A of the municipal register of properties. Only certain metropolitan municipalities and a few high-capacity B1 and B2 municipalities⁹² employ professional property valuers. The rest of the municipalities procure the services of suitably qualified and experienced professional valuers to prepare and maintain current valuation rolls or Part A of the municipal registers of properties. Procurement is conducted through a competitive bidding process⁹³.

Bid specification guidelines issued by both national and provincial CoGTA departments for the procurement of professional valuers to prepare and maintain valuation rolls include the scope of work for the assembly and maintenance of the municipal registers of properties. These specification guidelines call for the procurement of suitable valuation service providers. The core competency of professional valuers is the determination of property valuations. Thus, the inclusion of the assembly and maintenance of the municipal register of properties in the bid guidelines infers that professional valuers appointed to prepare the general valuation rolls are also the industry professionals responsible for the preparation and maintenance of the municipal registers of properties. This is not, in my opinion, supportive of best industry practice, nor conducive to the required oversight of the municipal registers of properties. The finding is that the assembly of the municipal register of properties should be a municipal function enabling access beyond the valuation department to other municipal departments, specifically Town Planning, the Building Inspectorate and Finance.

⁹² See Chapter 1, Table 1.1 for the municipal classifications.

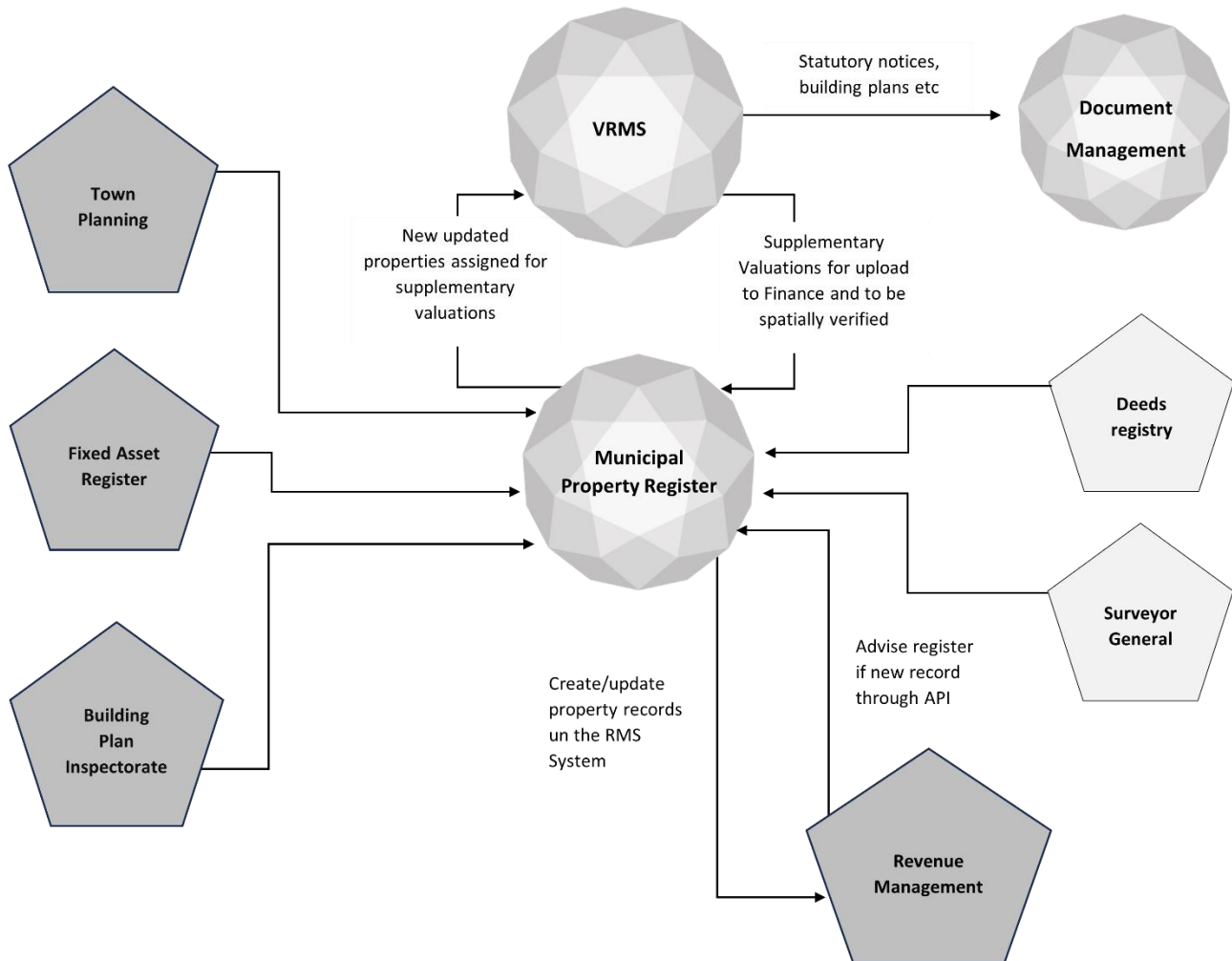
⁹³ See Section 4.6.2.2 for the review of the procurement of municipal valuers.

Once it is agreed that the assignment of the municipal register of properties function vests with the municipality, the next consideration is to ensure an appropriately resourced GIS data management function in the respective municipalities. In high-capacity municipalities (metropolitan, B1 and B2 municipalities), the property data management function resides with the Town Planning Departments. In the smaller municipalities, without a dedicated GIS resource, this function may be assigned to a shared district municipal resource or outsourced to consultants. Municipal registers of properties provide the coverage for property rating and are the databases hosting the current valuation rolls. Spatial municipal registers of properties may also support regional segment reporting required for compliance with the National Treasury mSCOA Regulations. The immediate dilemma is whether the municipal register of properties is a financial department function or alternatively, whether the responsibility for maintaining the municipal register of properties should reside with the department responsible for property data administration, Town Planning.

Ms Ina Barnard, then MEC for Co-operative Government, Western Cape Provincial Government, recommends against the placement of the Valuation Department in the Finance Division. She contends that this detracts from the necessary oversight (Barnard, 2015). My counter argument is that valuation services and data management are separate functions. Thus, the necessary oversight would be better accommodated through the division of functions between the Valuation Department and the department assigned to managing the property data. The Department of Town Planning is proposed.

Figure 5.2 provides an overview of the recommended municipal organisational model of the respective business units required to maintain the municipal register of properties or the current valuation roll. These proposed institutional arrangements presume the municipality as the data custodian of the municipal register of properties. The model places the property register as the single hub of all property-related data in the municipality. Town Planning, Asset Management and the Building Planning Inspectorates all require property data to fulfil their functions. These work streams are listed on the left-hand side of Figure 5.2. Any changes to individual property attributes through these processes are captured in the municipal register of register. Statutory changes, such as changes to ownership or subdivisions/consolidations, are informed through data exchanges with the Deeds Registry and Surveyor General's Offices respectively. This necessitates a direct link between the municipal property register and the relevant external agencies. This is referenced on the right-hand side of Figure 5.2.

Figure 5.2: Recommended model for the municipal register of properties



Source: Author's own compilation.

New property transactions are initially captured from the rates clearance certificates in the financial system. Rates clearance certificates are issued by the municipality in the process of property ownership changes. Timeous changes to the financial system about ownership changes allow rates accounts to be sent to the new property owners upon registration. With seamless integration between the Deeds Office, the financial system and the VRMS, such new ownership details may be automatically updated from the municipal register of properties. Retaining the record-by-record balancing between the property register and the financial system is a monitoring mechanism that advances complete and correct municipal billing.

A further advantage of implementing this organisational model, Figure 5.2, is that instructions to the municipal valuer for the preparation of supplementary valuations are communicated from the municipal register of properties directly to the VRMS. The municipal valuer receives instructions to prepare supplementary valuations, for example for a newly subdivided or re-zoned property, from the VRMS. The municipal valuer prepares the updated value assessments in the VRMS, returning these supplementary valuations to the municipal register of properties. Once the supplementary

valuations for a period are concluded, these are uploaded seamlessly from Part A of the property register, the current valuation roll, directly to the financial/revenue management system for billing purposes. These work streams are all contained in the municipality's ICT environment. This organisational model enables compliance with the National Treasury mSCOA Regulations for seamless integration between the property related municipal systems.

The finding of this institutional review is that GIS practitioners and Town Planning departments have the necessary technical competencies to assemble and maintain geospatial municipal registers of properties. It is recommended that property data management is consistently assigned to this municipal business unit. In the absence of such a function in the municipal organisation, the assembly and maintenance of the municipal register of properties should be contracted to the VRMS vendor or an independent GIS service provider, but not to the valuation service provider. This is an alternative to current practices and, in my opinion, should be adopted for improved monitoring and consistency. The question of where the Valuation Department resides then becomes moot as the VRMS will guide this function.

The investigation of institutional arrangements for monitoring and evaluating municipal registers of properties begins at the municipal level, with inconsistencies regarding which department or business unit is responsible for these functions. This investigation finds that the assembly and maintenance of the municipal register of properties should be a municipal function, enabling access beyond the valuation department to support financial reporting.

The organisational model, Figure 5.2, allows for seamless integration between the external base registers, including the Deeds and SG Offices and internal municipal systems. This integration enables record-by-record balancing and automatic updating of property attributes. In this model the municipal valuer receives instructions to prepare supplementary valuations directly from the VRMS. These updated valuations are then uploaded to the property register that integrates with the financial system for billing purposes. This approach improves monitoring and consistency for property rates, as well as supporting financial reporting.

The next tier of this institutional monitoring investigation is provincial government. The following section addresses the role of provincial government towards monitoring the establishment and maintenance of municipal registers of properties.

5.5.3 Institutional considerations: Provincial government

The Systems Act provides for the provincial monitoring of how municipalities manage their own affairs, exercise their powers and perform their functions. The CoGTA provincial departments have the legislative mandate to monitor the implementation of the MPRA to report to their respective national minister. These provisions are included in Section 82A of the MPRA. National Treasury's provincial departments report to their national counterpart on municipal financial problems, as provided in Section 136 of the MFMA.

Given the findings regarding the recommended retention of the maintenance of the municipal registers of properties as a municipal function, both provincial departments and National CoGTA

should remove this scope from their bid specification guidelines. This would clarify the role of the designated municipal valuer to determine the market value and to allocate each property an appropriate category of property. The adoption of this reform would support the oversight and monitoring of the completeness and accuracy of the municipal register of properties through building internal controls between the functionary responsible for the assembly and maintenance of the municipal registers of properties and the valuation service provider appointed to prepare the general valuation roll and update the valuation roll for the contract period.

In Section 5.3 the benefits of oversight and performance monitoring were described. Poister *et al* (2013) stressed the need for clear and accepted performance goals, the allocation of the most appropriate agency for executing the monitoring function and the use of comparable performance information to determine improvement from a baseline dataset. KwaZulu-Natal's CoGTA bid specification guidelines include requirements for the service providers to comply with the MPRA standards endorsed by the professional valuers' statutory council, the South Africa Council for the Property Valuers Profession (hereafter "SACPVP"). The provincial monitoring agency, KwaZulu-Natal's CoGTA, is unable to confirm whether these contractual specifications, as opposed to legislative compliance, for the establishment of a complete municipal register of properties, are fully or even partially met by municipalities. The bid specification guidelines issued by National CoGTA as well as the other provincial CoGTA departments make no reference to either the municipal register of properties or to the SACPVP's endorsed MPRA standards.

Current oversight and monitoring programmes extended by the various provincial departments of CoGTA are inconsistent across the different provinces. KwaZulu-Natal CoGTA procured a team of consultants including valuers to support the initial implementation of the MPRA from 2005. This dedicated provincial MPRA Monitoring Team continues to provide support to municipalities in respect of the provisions of the MPRA. Research of the current provincial monitoring of the municipal register of properties indicates that this item is solely mentioned in the KwaZulu-Natal CoGTA's reporting template. The municipal register of properties is not called for in any of the other provinces' monitoring initiatives.

From noting the inconsistencies in monitoring approaches of the various provincial CoGTA departments, I analyse the monitoring models implemented by the relevant national departments with specific reference to the municipal registers of properties. These include National Treasury (responsible for the supervising of compliance with the MFMA), National CoGTA (responsible for the supervising of the implementation of the MPRA) and the Spatial Data Infrastructure Directorate responsible for monitoring of the SDI Act. This Directorate falls under the Department of Agriculture, Land Reform and Rural Development. The respective monitoring models are identified and, where appropriate, possible reforms described in the following sections.

5.5.4 Institutional considerations: National government

While dialogue exists between the national departments of Treasury, CoGTA and the Department of Agriculture, Land Reform and Rural Development, the umbrella department for the SDI Act

Directorate, the subject of the establishment and maintenance of municipal registers of properties, is notably absent.

National Treasury regulated a municipal Standard Chart of Accounts, mSCOA, against which all municipal transactions must be reported. The MPRA prescribes categories of property for differential rating. Municipalities may include additional categories of properties in their rates policies, provided these do not circumvent the prescribed categories of properties⁹⁴. National Treasury is yet to align the mSCOA chart with the prescribed categories of properties in the MPRA⁹⁵. The current provisions of the mSCOA chart, Version 6.8, preclude regional segment reporting for properties used for multiple purposes, places of public worship, formally recognised conservation areas, monuments, heritage sites, botanical gardens, as well as properties used for unauthorised purposes amongst others. National Treasury's directive is that should a municipality include additional categories of property in its rates policy, then it may apply to National Treasury for the inclusion of such additional categories of properties in their chart of accounts. To date few municipalities have applied to National Treasury for authorisation of additional categories of properties. An example is Drakenstein Municipality, a B1 municipality in the Western Cape, which applied for 'sports fields' to be identified as an additional category in their mSCOA chart. This situation highlights the necessity for more constructive dialogue between these two key national departments. The current divergence between the provisions of the MPRA in relation to the mSCOA Regulations creates challenges for valuers, systems vendors and municipalities. The situation also obstructs effective oversight and monitoring.

Part B of the property register is a further national monitoring consideration. This report is an annual statutory report provided in Section 23(3) of the MPRA. The report contains details of exemptions, rebates or reductions (discretionary rates relief options) as well as the impermissible rates applied to the current valuation roll or Part A of the register of properties. Part B of the property register provides a schedule of income foregone through discretionary rates relief, as well as the impermissible rates that the municipality is disallowed to collect. There is no mention of the Part B reports in the prescribed monitoring frameworks, either under the national or the provincial monitoring sections of the MPRA.

From a National Treasury perspective, Part B reports could provide useful oversight into income foregone reported by municipalities. Income foregone is defined as the amount of discretionary rates relief that municipalities extend through their rates policies to vulnerable categories of properties or categories of owners of properties. The calculation of the annual allocation of funds in terms of the Distribution of Revenue Act, 4 of 2020, the equitable share formula⁹⁶, considers municipal income foregone as a contributory component. The equitable share is distributed annually by National Treasury and supports municipal operations and the delivery of services to communities. This finding includes a more rigorous analysis of the annual Part B municipal register of property reports, as well

⁹⁴ Refer to Section 4.2.1.1 for the legislative review of Part A and Part B of the municipal register of properties.

⁹⁵ Refer to Section 4.3.1 for the review of the mSCOA, municipal standard chart of accounts.

⁹⁶ Refer to Section 4.1 for the review of the equitable share extended to municipalities by National Treasury.

as improved collaboration between National Treasury and National CoGTA regarding sharing these Part B reports and their business intelligence regarding municipal income foregone.

A key finding regarding the monitoring of municipal registers of properties is the issue of data interoperability. The findings in the legislative and institutional investigation identify that property data must be accessible and able to be shared, in the municipality between departments and outside with stakeholders in both the private and public sectors. The proposed unique property identifier is the SG code. This thesis recommends the adoption of an expanded SG 32-digit code⁹⁷. Standard business rules regarding the concatenation of this unique code need to be finalised and formally adopted. Notwithstanding the recognition of a common dataset is a constructive starting point for enabling datasets to be shared.

From the National Treasury and CoGTA perspectives, there are several options to enhance the monitoring of property rates coverage and the accuracy of the prescribed transactional reporting. The first is the promulgation of a regulation, either by Treasury or by CoGTA, for the requirement of the municipal register of properties to be prescribed as geospatial. The second reform should be implemented through a directive that Section 48(g) of the MPRA that provides for the contents of the valuation roll should require the 'prescribed particular' as the mSCOA classification. Such a reform would be effective towards checking the allocation of the category of property in the property register against the property record tariff details reflected in the financial system. The alignment of the prescribed categories of properties in the MPRA and the reporting classifications in the mSCOA chart could be facilitated through the adoption of this reform. A revised mSCOA chart is released annually by National Treasury towards addressing various identified improvements.

Section 108 of the Systems Act enables the Minister of Local Government in consultation with the Minister of Finance to establish essential national standards for any matter assigned to municipalities in terms of Section 156(1) of the Constitution. A precursor to these proposed reforms is the requirement for active dialogue between National CoGTA and National Treasury as the custodians of the respective statutes.

In summary the findings from this section indicates room for improved dialogue between National Treasury and CoGTA and the Department of Agriculture, Land Reform and Rural Development responsible for monitoring the SDI Act. This would address better coordination and outcomes for each national department's specific monitoring requirements and provide enhanced timely access to accurate spatial information.

The introductory comments to Section 5.1 included potential consideration of other possible oversight agencies. The capacity of the Auditor General, the South African Information Technology Agency and the South African valuation industry through either the Office of the Valuer General or the industry's statutory council are investigated as possible agencies that could possibly contribute to the monitoring and evaluation of the efficacies of property rating. The specific reference of this research is towards the completeness and accuracy of municipal registers of properties. The

⁹⁷ See Section 3.2.4 for the review of the advantages of the SG 32-digit code as a unique property identifier.

independent agencies identified for the purposes of this analysis include the Auditor General, the South African Information Technology Agency and the Office of the Valuer General.

5.5.5 Institutional considerations: Auditor General, South Africa

The Auditor General, appointed by Parliament and accountable to the National Assembly, reports on the accounts, financial statements and financial management of all national and provincial departments, municipalities and other public institutions. The Auditor-General's mission statement states that annual audit reports enable citizens to hold custodians of public resources accountable. However, only 38 out of 257 municipalities achieved clean audits for the 2021-2022 financial year, a decrease from 41 in the previous year. Factors contributing to this include skills shortages, poor accountability and inadequate leadership. Over 55% of municipalities are reportedly involved in financial misappropriation, leading to irregular, fruitless and unauthorised expenditure. The Auditor General's 2021-2022 annual report indicates a lack of internal controls and financial management disciplines, deteriorating financial health and declining service delivery. Factors contributing to this include a high level of vacancies in local government, inadequate capacity in handling financial matters, corrective actions not being applied, limited review and monitoring on internal processes, and an absence of the ability of municipalities to facilitate consequence management or hold persons and/or entities accountable for mismanagement.

With respect to the MPRA, the Auditor General's understanding of the legislative provisions regarding the valuation of immovable municipal assets could, in my opinion, be improved. The following example illustrates this opinion. Section 46 of the MPRA outlines the general basis of valuation. It excludes biological assets, such as annual crops and growing timber, from market value assessments. However, municipal fixed asset registers must determine fair value, including biological assets, on an annual basis. This discrepancy is compounded by the fact that municipal fixed asset registers are re-valued annually, while municipal valuation rolls have a fixed date of valuation with a 4 or 5-year validity period. The Auditor General is of the opinion that the immovable property records with the fixed asset registers and the valuation rolls should be aligned in terms of value. This is incorrect with further training required.

The Auditor General's audit of valuation roll management systems in 2020/2021 focused on user access controls (ITC) requirements, including auditing delegations of users authorised to make value or category of property changes in valuation roll management systems. This audit required municipalities to evaluate user testing and technical support response times and back-up procedures. The finding is that the Auditor General's approach to municipalities with VRMS installations and those without is inconsistent. Municipalities using VRMS must meet stringent criteria in terms of system functionality, audit trails and IT security features. If a municipality chooses not to deploy a VRMS, they avoid the Auditor General's scrutiny and the risk of adverse audit findings. This oversight is, in my opinion, unhelpful as municipalities with poorer capacity and smaller property rates bases are thus exposed to further risks of improper or incomplete integration between their valuation rolls (presented in spreadsheets) and their revenue management systems.

The finding from this limited review is that the Auditor General requires further training on the MPRA and property rates to render a useful oversight function.

5.5.6 Institutional considerations: South African Information Technology Agency

The role of the South African Information Technology Agency (hereafter “SITA”) is to leverage information technology as a strategic resource for government with a specific focus on public sector delivery. SITA’s key operational area is to modernise and integrate applications for modernising and integrating public data. This objective could be likened to the mSCOA business reforms implemented by National Treasury. Geospatial datasets are not explicitly cited in the SITA’s mission, but the modernisation and integration of applications and public facing data are. In my opinion, the SITA could be an important role player in the IT space in the public sector, especially as this pertains to monitoring of geospatial data and spatial data infrastructure.

The prerequisites for National Treasury’s mSCOA business reforms are adequate Information Technology (IT) and infrastructural systems to process the prescribed systems solutions. Information technology is commonly understood as the use of computers to store, retrieve, transmit and manipulate data in a business or in this instance, a public entity. Upgrading IT hardware and software is frequently a challenge for cash strapped municipalities. The result is that sophisticated systems and applications may be required to operate on obsolete equipment impacting their deployment and effectiveness. This perspective emphasises the important role that the SITA could potentially play in improving municipal IT hardware, so that this has adequate capacity for the systems and solutions hosting the geospatial municipal registers of properties. It is therefore recommended that the SITA is included in the institutional discussions around property and valuation data management reforms.

An alternate agency that could possibly fulfil a monitoring role for the MPRA, specifically the municipal registers of properties, is the recently established Office of the Valuer General.

5.5.7 Institutional considerations: Office of the Valuer General

South Africa established an Office of the Valuer General (hereafter “OVG”) as provided by the Property Valuation Act, 17 of 2014. The ambit of the OVG is to determine the value of property for the purposes of land reform and to establish a balance between redistribution of land to beneficiaries in the interests of the public and that of the existing landowners. The valuations prepared by the OVG support the determination of just and equitable compensation offered by the Minister of the Department of Agriculture, Rural Development and Land Reform to landowners whose properties are acquired for the purposes of land reform.

In the proposed service delivery model outlined for the Office of the Valuer General five functional areas are considered. These include:

- Policy formulation,
- The development of industry standards for the valuer profession,
- Market research and property reporting,

- Valuations for government agencies with consulting or advisory services relating to property and real estate matters, and
- The provision of a centralised repository for market research based on reliable information and updated frequently.

(Department of Rural Development and Land Reform, 2013).

It is noteworthy that there are no limitations for promulgating additional regulations or legislative amendments to expand the current roles and responsibilities of the Office of the Valuer General. Personal communication with the Acting Valuer General, Motlatso Maloko, (2022) indicates that there is room for improvement in the capacity and level of competencies of the valuers in the OVG. Notwithstanding there is an existing resourced valuer team in this office.

Prevalent global practices delegate both rating and valuation monitoring and oversight to independent Offices of the Valuer General. The South African Office of the Valuer General undertook a study tour (2017) to establish how mature Valuer General offices in Namibia and the Australian states of New South Wales, Victoria and Tasmania are sustainable in their respective environments. Both the Australian and Tasmanian Valuer General models provide statutory assessments for the purposes of recurrent property taxation. Their secondary function is to determine valuations for compulsory acquisition of land for public purpose. The Namibian model provided specific insight into acquisition of land for land reform purposes, as well as the determination of equitable compensation. While, in my opinion, the utility of the 2017 study tour had limited benefit for the current OVG mandate, it informed the potential of the OVG model to participate in the oversight of recurrent property taxation. This conclusion has been recently reinforced by survey results from an independent study on the impact of the Property Valuation Act, 17 of 2014, on land reform efficacies (2023, unpublished). A specific survey question addressed the sustainability of the OVG and its long-term vision. The survey results concluded that the option for the OVG to fulfil a monitoring function for the use of the MPRA may well be a national imperative.

The next section of this thesis considers whether meaningful monitoring and oversight of the MPRA specifically the municipal register of properties could be conducted by the valuation profession itself. Such oversight could possibly be implemented through peer review or by the statutory registration council for the property valuer's profession, the South African Council for the Property Valuers Profession (hereafter "SACPVP").

5.5.8 Institutional considerations: The valuation profession

Outside of government, the most important stakeholder with respect to monitoring the MPRA is the valuer profession itself. The profession is regulated by the statutory council, the SACPVP. Section 39 of the MPRA requires a municipal valuer to be a person registered as a professional valuer or a professional associated valuer with the Property Valuers Profession Act, 2000. All municipal valuation rolls must be certified by the designated municipal valuer. Thus, collectively the valuer profession is responsible for the preparation and maintenance of all valuation rolls. Professional valuers are considered scarce resources in the South African government. Municipal

valuers may be employed as municipal officials or valuers procured from the private sector. Metropolitan municipalities (Classification A) and a few high-capacity municipalities including Msunduzi Municipality (KwaZulu-Natal), the City of Umhlathuze (KwaZulu-Natal) and the City of Mbombela (Mpumalanga Province) - are B1 municipalities⁹⁸ that employ professional valuers. The balance of municipalities procures valuation services from the private sector.

Through reviewing the current capacity of the valuer profession in South Africa, Mooya (2015) conducted a critical review of qualifications held by professional valuers. Most registered professional valuers hold a national diploma as their highest level of qualification. Mooya's findings indicate that the valuer's competency correlated to their years of experience and professional status, rather than their academic qualifications.

"The study revealed significant levels of dissatisfaction amongst employers with the general competence of valuers under their supervision (candidate valuers). The study concludes that the South African valuation curriculum did not meet international norms in terms of certain criteria."

(Mooya, 2015).

The valuation profession anticipated the inclusion of a comprehensive prescribed monitoring framework in the amended provisions of the MPRA, 2014. The Amendments to the MPRA expanded the monitoring sections, namely Section 81 (provincial monitoring) and Section 82 (national monitoring), to include procedural milestone reporting in the monitoring framework with Section 82's provisions not yet activated.

In her keynote address to the 8th International Property Tax Institute Mass Appraisal/Valuation Symposium, 2013, MEC Dube, KwaZulu-Natal CoGTA, stated that "[t]he lack of oversight over municipal valuations and the overall quality of completed valuation rolls remains a serious challenge" (South African Valuer, 2013). Dube stressed that accurately conducted property valuations would go a long way towards forging cohesion between ratepayers and municipalities. She challenged the valuation profession to improve and adopt industry regulated valuation standards. She further emphasised the need to develop educational programmes to improve skills within the valuation profession, especially professional valuer resources in municipalities. The development of appropriate standards for the use of the MPRA was assigned to the SACPVP. The brief was to draft a set of professional standards from best practice drawn from knowledge and expertise within the profession and applicable to the South African laws and context. Globally, professional standards are drafted by the responsible profession⁹⁹.

In 2016, the SACPVP undertook the responsibility for finalising the relevant MPRA standards to provide the necessary benchmarking for the preparation and updating of valuation rolls. The MPRA standards were finally published by the council in December 2021 after limited consultation with industry professionals. These standards, *The South African Standard Municipal Valuations for*

⁹⁸ Refer to Chapter 1, Table 1 for details of the municipal classifications.

⁹⁹ Refer to Section 2.8 for the review of valuation standards.

Property Rating, Version 2021, together with the *Monitoring Framework Guidance, Version 2021* on the measurement and evidence envisaged by the standards were adopted by the council for publication and use in South Africa. These standards are available online on the SACPVP website.¹⁰⁰ On the face of it, the MPRA Standards prepared by the SACPVP are in place to regulate performance standards required for the compliant use of the MPRA. These MPRA Standards include a chapter on the Municipal Register of Properties, including verbatim extracts from Section 23 of the MPRA. In addition, this chapter refers to terminology excluded from the MPRA. For example, the council's MPRA Standards refer to a consolidated valuation roll, and a valuation roll GIS cadastral layer. Neither of these terms are contained within the MPRA. The MPRA refers to Part A of the municipal register of properties as the current roll, the general valuation roll together with any objection reviews or appeal decisions as well as all supplementary valuations as may be prepared in terms of Section 78. It is conjecture that the valuation roll GIS cadastral layer referred to in the MPRA Standards could be understood to mean the geospatial property register. Given that the terminology in these MPRA Standards is not aligned to the legislation, the impact of these guidelines may not be as effective as intended, specifically in relation to the municipal register of properties.

In the writer's opinion, the inadequacy of the adopted MPRA Standards compromises the SACPVP's capacity towards fulfilling a meaningful oversight role. Globally the oversight function is best performed through an independent monitoring entity. Alternatively, to the South African Council for Property Valuers Profession, external valuation agencies such as the International Property Tax Institute (IPTI) are available to provide independent oversight or roll validation services to municipalities upon request. The International Association for Assessing Officers published quality assurance measures including data integrity reviews, assessment level and uniformity analysis and testing the performance of the various computer assisted mass appraisal systems (Standard on Ratio Studies, IAAO, 2013).

Certain metropolitan municipalities in South Africa including the City of Cape Town and the City of Johannesburg engaged the International Property Tax Institute (IPTI) to review their processes and to develop recommendations to improve the accuracy of their assessed values of their valuation rolls. These services were procured by the City of CapeTown (from 2019) and by the City of Johannesburg (2023). The fees for such oversight and the details of the review services were not investigated in this thesis.

A further option that may be facilitated by the SACPVP is for municipal valuers to procure roll validation services or peer review to confirm the accuracy of the valuation assessments or to verify the correlation between the market and the assessed roll values. Msunduzi Municipality, a B1 municipality in KwaZulu-Natal, procured an independent valuation consultant to provide validation services for their 2014 General Valuation Roll. Significant value was added to the valuation roll through this draft roll review process and the subsequent engagement with the valuation service provider to refresh the assessed values to improve the correlation to sales evidence (Boshoff, 2014).

¹⁰⁰ SACPVP's website address - <https://www.sacpvp.co.za/>.

The investigation of the adequacy of the institutions responsible or potentially responsible for monitoring fair, transparent and equitable property rates produced key findings. These are, primarily for improved dialogue between the different departments of CoGTA, National Treasury and the Department of Agriculture, Land Reform and Rural Development under which the SDI Act falls. The institutional alignment would invoke the necessary coordination of existing legislative provisions for improved oversight of the municipal registers of properties.

The following section addresses the operational considerations for the monitoring of municipal registers of properties.

5.6 OPERATIONAL CONSIDERATIONS FROM A MONITORING PERSPECTIVE

National CoGTA conceptualised a District Development Model to support the process of translating development priorities and objectives into spatial locations. The objective of the District Development Model is to produce a spatially integrated single government plan, as an intergovernmental compact, that guides and directs government-wide strategic investment spending, project delivery and accountability for each district and metropolitan space.

The preamble to CoGTA's position paper on the District Development Model states (Republic of South Africa: COGTA, 2016: 1):

"Lack of coordination between national and provincial governments, between departments and particularly at local government level, has not served the country. The pattern of operating in silos has led to lack of coherence in planning and use and has made monitoring and oversight of government's programme difficult."

The District Development Model includes the recommendation for aggregating local spatial data in a district level plan; this is referred to as OnePlan. The plan identifies transformational processes to achieve identified strategic objectives for the 44 district and 8 metropolitan areas in South Africa. The recommendation to aggregate the accurate and complete geospatial municipal registers of properties into district level plans is developed more fully in Section 7.9.2. The success of the proposed spatialisation is only achievable through the adoption of monitored standards by nominated spatial data custodians¹⁰¹ and the adoption of standard naming protocols for the unique identification of property parcels to enable data sharing.

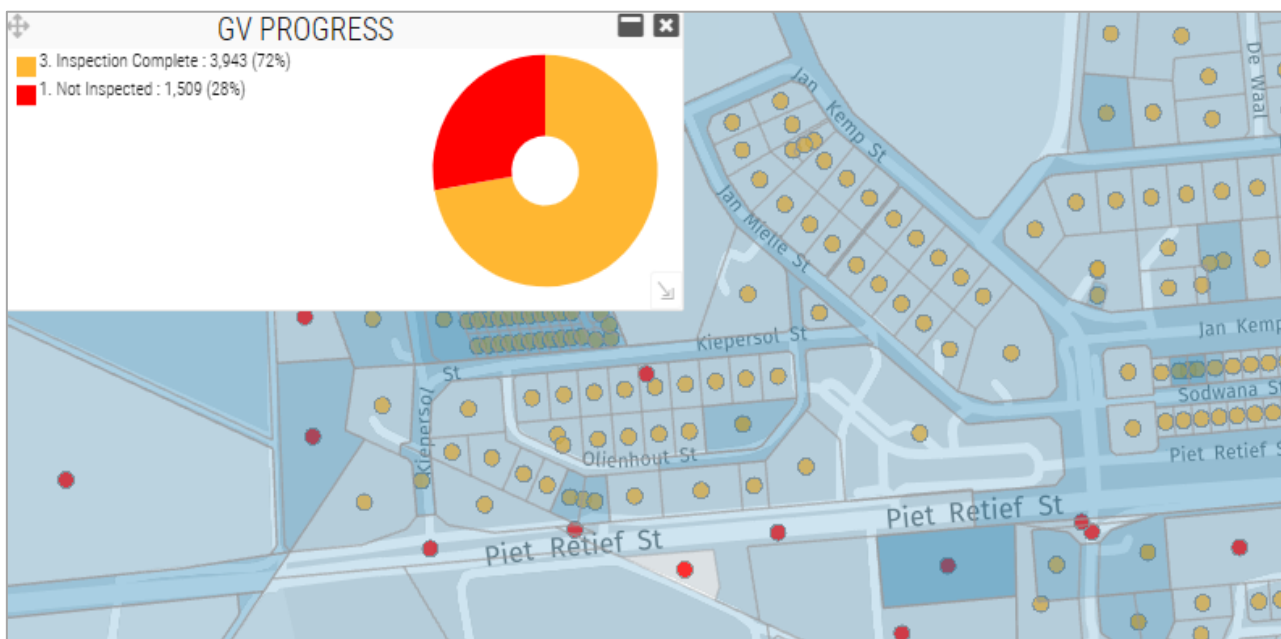
Operationally and given previous commentary about the inadequate contract management for the projects to prepare and maintain municipal valuation rolls¹⁰², the establishment of the municipal register of properties as a preparatory project would support reporting the preparation of the general valuation project's progress. Typically, these are large scale projects involving thousands of properties. Using the municipal register of properties as the geospatial reporting platform would enable real-time access to the project status for the project team, senior municipal management, as

¹⁰¹ See Section 3.2.4 for the review of the Spatial Data Infrastructure Act, 54 of 2003.

¹⁰² See Section 5.4.1 on MPRA oversight and monitoring.

well as provincial and national monitoring personnel. The project status may be updated as the data collectors in the field or valuers in their offices capture property data and calculate draft and final values. Oversight would be achievable by sharing the weblink to the reporting website with the appropriate monitoring agency/ies. This data sharing strategy reduces the replication of similar reports for submission to different oversight agencies. The geospatial report enables viewers to access the project progress. Figure 5.3 shows a simple report of the properties where data collection is complete and where data collection remains outstanding on a progress report for a general valuation project.

Figure 5.1: Map showing general valuation project progress report using a geospatial platform



Source: Author's own compilation.

The success of this geospatial reporting instrument is predicated on the assembly of an accurate and current geospatial property register. Should the reform model described above be implemented, the monitoring functions of both provincial and national government towards establishing the progress of the various general valuation roll projects would be simplified.

5.7 CONCLUDING REMARKS

This chapter makes a case for oversight and monitoring of geospatial municipal registers of properties towards improving property rates efficacies, the success of municipal transaction reporting and to support improved decision-making in municipalities. Consideration of whether there is sufficient capacity within the existing institutions to extend the necessary oversight returns generally negative findings.

Key findings with respect to monitoring municipal registers of properties include proposals for retaining the function to assemble and maintain municipal registers of properties using in-house municipal GIS resources, standardising the municipal department/s responsible for the assembly

and maintenance of the municipal property register, and improving GIS and data management skills in municipalities to support this function. The SDI Act should prescribe that municipal registers of property constitute base datasets and municipalities should be nominated as the base data custodians of these geospatial datasets. The nomination and endorsement of municipalities as the custodians of the municipal registers of properties addresses reforms across the policy, institutional and operational perspectives. Giving effect to this nomination will prompt the SASDI Directorate to improve its capacity to monitor these base datasets, ensuring the requisite data integrity to meet enforceable standards either through existing or a new dedicated Geospatial General. The adoption of a prescribed naming protocol or naming standard, the SG 32-digit code, is a prerequisite for property data interoperability. A further necessary reform is for seamless integration between the VRMS and the financial systems towards ensuring that all data and municipal transactions occur in the municipal ITC environment. The functionality for seamless integration between financial systems and the VRMS should be thoroughly evaluated. Adoption of these reforms would support the achievement of full coverage and the accuracy for municipal registers of properties.

The proposed reform to establish the municipal register of properties in-house would also enable the municipality to supply the complete and current municipal register of properties or property inventory to the municipal valuer at the commencement of the general valuation roll project. The maintenance of equitable rating for the duration of the roll validity cycle compels the municipal registers of properties to be updated as property attributes change, and supplementary valuations are prepared. There is currently no oversight to verify whether the current valuation roll, or Part A of these property registers, is updated whenever necessary. While both legal and contractual provisions exist, the execution of these provisions by municipal valuers are not verified. There are no penalties for valuation service providers who underperform in terms of their contractual obligations, or designations to prepare and update the current valuation rolls. Conversely there are no consequences for the dereliction of duties by municipal officials accountable for the contractual services received from appointed municipal valuers.

Key to the ongoing updating and maintenance of the geospatial municipal register of properties is the adoption of this register as an internal dataset or the single version of the truth for all property-related data in the municipality. This organisational structure is proposed in Figure 5.2. Recommended workflow processes are unattainable without a clear allocation of roles and responsibilities and in the absence of standards or benchmarks. Coetzee and Strydom (2007) state that an ambiguous specification for a point of service delivery is a challenge for local authorities and public utilities rolling out the delivery of services. To resolve service delivery and billing issues, not only for property rates but also for utilities, a standard for the unique identification of each property parcel is required. Revenue performance should improve as the alignment of records between the financial system and VRMS achieve complete and correct municipal billing.

Government's current silo constructs are identified as compromising local service delivery and diminishing the impact of government's programmes on poverty, inequality and unemployment. The use of the recommended reforms could contribute towards complete coverage, improved financial

reporting, more efficient property rates and improved municipal financial sustainability. Such outputs are reliant on the completeness and accuracy of the municipal register of properties. This thesis also highlights the seeming inability for constructive dialogue, especially at a national level between the CoGTA and Treasury departments, specifically as this pertains to the alignment of the mSCOA chart and the prescribed categories of properties as provided in Section 8 of the MPRA.

This research recommends the aggregation of the collective municipal registers of properties into a national database under the SDI Act. This proposal is embodied through the District Development Model promulgated by CoGTA. The South African Information Technology Agency has a potential role as an invaluable implementing agent towards aggregating the geospatial municipal registers of property into a national database to inform the National Spatial Development Framework, as well as other national planning initiatives.

My observation is that the South African Council for Property Valuers Profession's MPRA standards are useless. It is unlikely that without an authoritative monitoring agency, these will have any meaningful impact towards standardising practices for property rates in South Africa. Similarly, reform recommendations to improve coverage of municipal registers of properties and the adoption of consistent naming protocols for the property records contained in the municipal register of properties and the municipal financial systems remain useful proposals in the absence of an authoritative monitoring agency.

There are existing provisions for monitoring and oversight in Sections 81 and 82 of the MPRA, prescribed financial reporting requirements in the MFMA and annual audit requirements by the Auditor General. However, there is no explicit mention of specific monitoring for the municipal register of properties nor the current valuation roll, Part A of the municipal register of properties. The MFMA's mSCOA Regulations implies this though reference to Section 23, but this remains unqualified. Without explicit provisions regarding the geospatial nature of the municipal register of properties, this provision remains vague. The criticism levelled against the SDI Act is that it is not explicit in defining the criteria for geospatial datasets, or who the data custodians are or ought to be (Hlela *et al*, 2016).

A cautionary note for consideration is that onerous oversight and monitoring has inherent disadvantages and may place unnecessary reporting burdens on already over-stretched municipal administrative capacities. I conclude that none of the existing oversight measures nor initiatives currently in place impact sufficiently on the contractual conduct of the designated valuation service providers nor the oversight performance of the respective municipalities towards ensuring full coverage for property rates or fully successful municipal transactional reporting. For monitoring and evaluation to be credible, there must be consequences, whether these are penalties or incentives. Without an independent monitoring agency with the requisite leverage to invoke compliance, as well as changes to legislation, the various monitoring initiatives will remain useful but ineffective.

Civil society has developed a heightened consciousness regarding the MPRA's prescribed processes. Commentary is directed towards the accuracy of the market assessments contained in

the valuation rolls used for rating. These civil responses should not be overlooked nor ignored by municipalities.

In summary, there are monitoring and oversight provisions in the MPRA, the MFMA and the SDI Act. The findings indicate room for improving these legislative provisions, as well as their execution by the respective departments. It is noted that neither the SDI Act Directorate (Department of Agriculture, Land Reform and Rural Development), CoGTA, nor National Treasury, provide any oversight to the municipal registers of properties or the current valuation rolls used by the municipality for billing purposes. Various findings prompt recommendations regarding remedial measures for improvements. Alternative independent monitoring agencies, such as the South African Auditor General, the South African Information Technology Agency and the Office of the Valuer were considered for their potential role in providing an appropriate monitoring agency for property rates and the coordination and management of spatial data. The research into an appropriate monitoring and oversight agency is addressed in principle but this requires further investigation through a dedicated study.

The next chapter provides a comparative analysis between the Netherlands and South Africa. The Netherlands model includes an independent agency as their monitoring entity.

CHAPTER 6: COMPARATIVE ANALYSIS BETWEEN THE NETHERLANDS AND SOUTH AFRICA

The next chapter investigates the property rates system in the Netherlands with specific reference to the property data required for property valuations and rating, both how it is assembled and managed. The purpose of this comparative analysis is to review the legislative framework, institutional and operational perspectives applicable in South Africa with that of a country with a more mature valuation and rating model. The Netherlands was selected for this comparative analysis. First, as indicated in Chapter 1, there are historic links between South Africa and the Netherlands. South Africa's legal system is founded in Roman-Dutch law and its system of registration on deeds rather than title is of Dutch origin. Second, and more importantly, the Dutch recurrent property tax system is revered to be one of the best in the world – especially as regards property valuation and the use of information technology (Bervoets et al, 2024). The findings or assertions emerging from this analysis are instrumental in the development of reform recommendations for South Africa in the final chapters.

6.1 INTRODUCTION TO THE COMPARATIVE ANALYSIS

Property rates is a local government tax in both South Africa and the Netherlands. This case study of the Netherlands is undertaken towards identifying good practice from a country recognised as global leader in property rating efficacies that may inform possible reforms for the property rates system in South Africa, a developing country. The initial section of this chapter addresses the rating model in the Netherlands. The analysis commences with a high-level description of their recurrent taxation legislative framework, followed by a description of the respective institutions participating in the assembly and maintenance of their base registers. In this section the processes and procedures implemented by the Netherlands towards the assembly of reliable property rates data are described. Notably this includes an annual physical inspection of all rateable properties by municipalities. This provision is mandatory towards informing the accuracy of immovable property values, known as the Wet Waardering Onroerende Zaken, or WOZ values¹⁰³.

The Netherlands is respected as a global leader in recurrent property taxation. This perception is informed by the country's well drafted policies, mature institutional frameworks, efficient operational practices and independent Council for Real Estate Assessment, (Waarderingskamer). The council's mandate is to supervise the quality of the real estate property assessments. The choice of the Netherlands as the study subject is further influenced by its subscription to globally recognised land information and administration systems. Additionally, the involvement of representatives from the Netherlands in the FIG Working Group initiative towards extending the ISO 19152:2012 Land Administration Model (LADM), a land administration model option for South Africa, influenced its

¹⁰³ WOZ value is an abbreviation for 'valuation of immovable property'. This refers to the valuation done by the municipality to determine how much taxation a person will pay on their property. WOZ values affect recurrent property tax, income tax, as well as heritage tax or estate duty.

selection for this comparative analysis. While other forms of property taxation such as transfer tax are payable in the Netherlands, these details are excluded from this thesis.

Market data is an important dataset for valuation determination. The Royal Institution of Chartered Surveyors Valuation Global Standards 2019 jurisdiction guide describes the property market in the Netherlands as follows:

“The Netherlands is a highly developed property market that has long been influenced by large domestic investment institutions. The market is mature and attracts both local and international property investment ... Real estate market data for the Netherlands is widely accessible. The market is ranked sixth in the JLL Global Real Estate Transparency Index 2018 and categorised as ‘highly transparent’.”

(Royal Institute of Chartered Surveyors, 2019).

This analysis highlights the use of spatial as well as the other input data that contribute to the Dutch system of base registers. Data interoperability between the cadastre and the base information about addresses and buildings facilitates property data updating and maintenance. The currency of the input data, together with the obligatory annual inspection of properties, results in recurrent tax administration being perceived as accurate by ratepayers in the Netherlands. Where relevant and appropriate, certain good practices and processes from the Netherlands are identified as possible reforms within the South African context. These recommendations are further refined in the final chapters.

6.2 MOTIVATION FOR THE SELECTION OF THE NETHERLANDS FOR THE COMPARATIVE ANALYSIS

There are dedicated legislative frameworks for the regulation of property rates in both countries: The Valuation of Immovable Property Act, 2004, in the Netherlands and the Local Government: Municipal Property Rates Act 6 of 2004 in South Africa respectively. This comparative analysis specifically addresses the assembly and maintenance of the base registers (Netherlands) and the municipal registers of properties (South Africa) and the roles of these registers towards the effectiveness of property rates in the two countries. The Netherlands provides an example of a mature national base register system. This national model is compared to the individual municipal registers of properties introduced in South Africa through the promulgation of the MPRA in 2005. Both countries use market value as the basis of assessment for recurrent property taxation. Both countries require that property rates are paid by the registered owner of property to their local municipality. Property occupiers in the Netherlands are also liable for the payment of property rates. Various forms of recurrent property tax relief are accessible to identified categories of properties and property owners in both countries. Safarov (2023: 57) comments that:

“The procedure for calculating property tax paid by legal entities and individuals and paying it to the budget differs sharply from each other. At the same time, the fact that the base of the land tax is determined as the total area of the land plot, regardless of the value of the land plots, creates complications in the implementation of the real estate tax.”

This is countered in a study by Stojiljković et al (2023) including Italy, Belgium and the Netherlands that the tax systems are maintained at a satisfactory constant with increasing public revenues and decreasing public expenditures. The Netherlands manages their various property base registers at a national level. In South Africa, the establishment and maintenance of the municipal registers of properties vests with municipalities with these datasets retained by the individual municipalities. In the former, the national base registers are used for various purposes including recurrent property taxation. In South Africa, individual municipal registers of properties provide property information for property rates with the recognised potential to extend this role to financial reporting and, possibly, to support land information and administration.

At an operational level, the Netherlands implements the International Valuation Information Model¹⁰⁴. This includes subscription to ISO 19152:2012 Land Administration Domain Model (LADM), which specifies the semantics for valuation registries maintained by public authorities. The Land Administration Domain Model also defines the relationships between the different base registers registries. The model is designed to identify individual property parcels and to facilitate all stages of immovable property identification and valuation from single valuations of individual properties through to mass appraisal.

Data integration across a variety of institutions and government applications is facilitated using the Land Administration Domain Model as a management framework. Thus, municipalities are compelled to check the correctness of the property data and property attributes or objects before any valuation models are generated. According to Kathman and Kuiper (2018), the most important aspect for successful mass appraisal results is the quality of the data. In response to this finding, an appropriate protocol was developed for measuring the quality of the registered property or object data in the Netherlands. It is mandatory for municipalities to apply this quality assurance protocol at least annually and report the quality of their available data to the Council for Real Estate Assessment as a formal finding.

Notably the value-generation phase excludes valuers, using statisticians as the key resource. Experienced, well-trained mass appraisal specialists are responsible for generating good value models in the annual mass appraisal process. Municipal valuers are employed to collect property attribute data, testimony to how important the quality of the data is to the valuation process. The municipal datasets are integrated into the national database known as the Kadaster.

Taxation coverage refers to how completely the base municipal registers of properties represent the actual property parcels on the ground. Coverage is an important determinant for fair and equitable recurrent property taxation. At an operational level, various development partners or identified base property register custodians responsible for data ownership and data administration give effect to this thesis's well-used mantra of 'one version of the truth'. A key area of this analysis addresses the unique identification and naming of property parcels and this respective contribution to the effectiveness of the recurrent taxation coverage.

¹⁰⁴ See Section 2.8 for the review of the Land Administration Domain Model.

The Netherlands implements updating valuation and rating practices to maintain just and equitable recurrent property taxation. The final aspect of this analysis addresses valuation oversight and monitoring. The Netherlands has a dedicated, independent Council for Real Estate Assessment, (Waarderingskamer), whose sole mandate is to supervise the quality of the real estate property assessments. The council employs professional valuers whose function is to assess and monitor the accuracy of the WOZ valuations prior to these being published. The outcome is a high level of stakeholder confidence for the WOZ values.

Municipalities use the WOZ value to calculate property tax and, on occasion, sewerage charges. The WOZ value is also used by Tax and Customs Administration to calculate income tax (notional rental values for owner-occupiers), corporate tax and inheritance tax. Polderboards¹⁰⁵, responsible for water management of certain areas, may also use a percentage of the WOZ value for the water board levies. WOZ values are mandatory for setting rental prices for social housing. WOZ values are also used by notaries, banks and insurance companies and in the investigation of real estate fraud. The government utilises this information without further investigation. This confidence is an additional endorsement of the impeccable accuracy of the WOZ values.

6.3 A LEGISLATIVE REVIEW – THE NETHERLANDS

This legislative review focuses on the base data registers and input datasets required for municipal rating. The review addresses the following:

- Legislative provisions for the assembly and maintenance of the base registers and recurrent property taxation;
- The respective input data and data structures required for property rates coverage with consideration towards achieving data interoperability;
- A review of the valuation practices for property rates noting the basis of valuation, appraisal periods, discretionary rates relief and the liability for the payment of rates.

Public administration in the Netherlands has four tiers: Central government, provinces, municipalities, and water authorities (GoN, n/d). The use of the national databases required for the use of property rates is the responsibility of the Ministry of Interior and Kingdom Relations (Coetzee *et al*, 2018; Kara *et al*, 2019). This ministry is responsible for all public administration, including formulating policy, preparing legislation and regulations and for the use and supervision of these legislative frameworks.

The role of the base data registers is key to the Netherlands's property rates system. This national property database is known as the Kadaster, the Land Registry and Mapping Agency of the Netherlands. Maintenance of this governance framework is supported through the integration of both national and local datasets. There are twelve base registers each containing clearly identified

¹⁰⁵ A polder is defined in the Cambridge Dictionary as an area of low land that was once under the sea but that has been separated from it by dikes, walls or channels built to prevent water covering an area.

information about citizens, companies, organisations and the physical environment. The Land Registry operates independently of the Kadaster and Mapping Agency (Kathman & Kuijper, 2018). Yet, these independent functions are both housed in an integrated system in the same government department.

Property records contain details of the individual properties, including boundary details and even soil analysis. Both the cadastre (BRK, basisregistratie kadaster) and the topographical information (BRT, basisregistratie grootschalige topografie) are maintained by the Kadaster. The address and building database (BAG, gebouwen) consists of base information for all addresses and buildings in the Netherlands. The Netherlands Kadaster holds all administrative and spatial data on property including details of the respective rights. The Kadaster is responsible for protecting the legal certainty with respect to land ownership, the maintenance of the national reference co-ordinate system and providing an advisory function for land-use issues and spatial data infrastructures (www.Kadaster.nl). All spatial data is available to the public through a geo-platform, Publieke Dienstverlening Op de Kaart (PDOK).

6.3.1 Input data for recurrent tax valuations and data interoperability

The Netherlands identifies three main property data sources or base registers for mass valuation used for rating purposes –

- the System of Key Registers, (including the cadastre or BRK),
- the register of inhabitants (WOZ-Belang), and
- the register of addresses and buildings (BAG).

The initial property register is the System of Key Registers. This consists of thirteen (13) relational databases. The Key Registers deliver accurate data to government to enable these authorities to conduct their work (Kara *et al*, 2019). The Key Register for Assessed Values (Basisregistratie WOZ – Basisregistratie Waarde Onroerende Zaken) is designed to comply with the Special Act for Real Estate Assessment (Kathman & Kuijper, 2018). The prescribed data fields include: the WOZ-value, the valuation date, the valuation object (property description) and the person liable for the payment of the property tax (WOZ-Belang). This may be either the owner or the property user. The market value of property is determined as if all the rights on that property belong to a single party. The Key Register for Assessed Values is linked to both the Key Register of Cadastre (Basisregistratie Kadaster – BRK) and the Key Register of Addresses and Buildings (Basisregistratie Adressen en Gebouwen – BAG). Addresses are used as a locational reference for all kinds of information, such as information about people, organisations and services. An address, within this context, is a combination of an address string together with a co-ordinate that provides the locational reference.

Municipalities are responsible for capturing any changes to property addresses through ownership changes, as well as providing updated building data for properties within their respective jurisdictions. In their case study on the Netherlands valuations, Kathmann and Kuijper (2018) identify that the base register of Addresses and Buildings (BAG) is used to identify buildings and associated

primary object characteristics as insufficiently detailed for the purposes of accurate mass valuation. Therefore, additional data must be acquired for this purpose.

This physical data collection function is assigned to municipalities. Ongoing conditionality assessments are acquired through the annual inspections by the municipal assessors, together with details of construction materials and neighbourhood features which inform the secondary object characteristics. Physical inspections are mandatory for informing the accuracy of the WOZ values. This data collection includes the acquisition of details of the individual buildings, differentiating between shopping space and storage space for example, or the old section of a building versus a newer expansion. Municipalities acquire this current building information using landowner questionnaires and interactive websites hosted by the municipalities for this purpose. Municipal assessors in the Dutch municipalities are also responsible for assembling rental data.

There is adequate public confidence in the WOZ values for property owners to use these values to inform their asking prices in property transactions. Where the prospective purchaser expresses doubt in the WOZ value, they are obliged to report this to the municipality. Where queried data pertains to another base register the municipality must report this to the custodian of that specific register. There are legislated timeframes for investigating and, if necessary, redressing the authentic specification in the base register in question. The provisions for high levels of accuracy in the data management ensures that the WOZ values are a reliable tool for property rates, as well as other taxation and towards informing the price for market transactions. The finding is that the number and diversity of participants participating in the data updates serves to heighten the integrity of the WOZ valuations.

The municipal datasets are rolled up to become the National Address Database, essential for a broad range of government services. The interoperability of the data between the different base registers is key to the success of the Dutch system. The coverage of property rates is dependent on the completeness and accuracy of the Key Register of Cadastre (BRK).

A further dataset required for mass valuation purposes is the transactional data with details of the properties being bought and sold in the market. The Netherlands has a mature and transparent property market. Market data includes the details of the property's characteristics or attributes, as well as current photographs. Listed property data is extracted from various commercial systems that advertise market information about real estate (Kathman & Kuijper, 2018). This public data is used by both buyers and sellers as a reliable reference to inform the accurate market value of similar properties.

The municipal assessor or valuer is required to review all sales and listed property data to verify which are open market transactions as opposed to forced sales or inter-family transfers. This discretion is the purview of the professional valuers and cannot be automated. The property transactions as well as property listings are uploaded into a central national repository of all sales data. The data includes the duration for which the property has been listed, as well as the transactional values for the respective properties. The assembly of rental details are also captured by municipalities, as well as any building prices for use in the cost approach.

Ongoing changes to property attribute data in any of the base registers are immediately conveyed from the source of the data for that specific property attribute to the central data repository. Through this mechanism the different data custodians demonstrate accountability for their data and the integrity of the property data is maintained as the single version of the truth as this pertains to property data. A formal framework is in place to allocate roles and responsibilities for coordinating these data flows.

Finally, from a land administration perspective, the Netherlands develop their national plans using the spatial data to frame the engagement between the different stakeholders. The achievement of national planning objectives is reliant on spatial data, the same spatial data used for the determination of property rates values (Balz & Zonneveld, 2018). The spatial datasets serve as operational evidence. Any “wooliness” as stated in Balz and Zonneveld (2018) is essentially ironed out through constructive collaboration. This data, together with other essential base datasets are housed in the System of Key Registers. These registers are available at national as well as a local government levels.

The next section defines the basis for valuation, discusses the provisions for rates relief and identifies the respective parties liable for the payment of property rates in the Netherlands.

6.3.2 Basis for valuation, assessment periods, rates relief and the liability for the payment of property rates

The Netherlands’ WOZ value is defined as the market value of the assigned property on a given date. Market value is defined as:

“The value is determined as the value to be attributed to the immovable property, if the full and unencumbered ownership thereof could be transferred and the acquirer could immediately and to the full extent use the property in the condition in which it is located.”

(Article 17.2, Real Estate Valuation Act of the The Dutch Property Tax System, 1995)

In the Netherlands the date of valuation is one year prior to the current year. For example, the assessed value for the year 2018 is based on the real estate market value on 1 January 2017 (Kathman & Kuijper, 2018). This assures the ratepayer that the assessed value, the WOZ value, is current and the assessments are determined using current market data.

Differential rates are applied to property rating in the Netherlands. These rates are determined by the respective municipality and differ between municipalities. A property owner may request a valuation report from their municipality. Such reports disclose the details of the WOZ value, how it was determined, together with the variance from the previous year’s WOZ valuation. As the WOZ value is used in various other forms of taxation in the Netherlands, it is in the interests of the taxpayers to ensure that their WOZ values are accurate.

Section v1 of the Act for Real Estate Assessment (2012) includes a dedicated section for data management and the provision of data. The base register for the WOZ values (the valuation roll) includes value specifications, time-based references, as well as the metadata. The municipal

valuation database also contains standardised data from other base registers extended by national government.

With respect to rates relief, the Netherlands's Wet WOZ extends property tax relief to taxpayers whose income is below a certain threshold. Such recipients must be natural persons. This rates relief is known as a full or partial tax waiver. The application for rates relief is dependent upon a property owner's personal tax assessment. An application for rates relief must be accompanied by a waiver application. This includes details of income, expenditures, any vehicle ownership, as well as the balances in the applicant's bank accounts. These applications may be made on-line using a personalised, secure DigiD. The Netherlands DigiD is a form of online identification allowing users access to service and government websites. The username and password are linked to the taxpayer's personal public service number (BSN). The municipality is obliged to decide the eligibility of the application for a tax waiver within 13 weeks of receiving an application.

Tax exemption is extended to a limited number of categories of properties. These include public roads, agricultural land (agricultural buildings are taxed), nature areas and churches. Common categories of property exempted from the payment of rates in both the Netherlands and South Africa are public roads, churches (places of public worship) and formally declared conservation or nature areas.

The next section addresses the institutions or data custodians responsible for the maintenance of the key base registers currently in place in the Netherlands.

6.4 AN INSTITUTIONAL REVIEW WITH RESPECT TO MUNICIPAL REGISTERS OF PROPERTIES - THE NETHERLANDS

The purpose of the following section is to investigate the institutional arrangements, internal or external to government, responsible for the property datasets and the data quality required for the rating coverage. This section also highlights the role of technological advances towards improving property data standards and data interoperability. The Netherlands gives effect to its government's strategic objective that government performs more efficiently with good geo-information. There is recognition that geospatial information forms an integral part of the information architecture for e-government, as well as advancing the objectives of the Netherlands 2040 National Policy Strategy for Infrastructure and Spatial Planning.

6.4.1 Institutional structures responsible for base registers in the Netherlands

The Kadaster, Land Registry and Mapping Agency of the Netherlands (the Kadaster) hosts administrative and spatial data for all properties nationally. These property datasets are continually updated and checked by the different development partners. The Kadaster's development partners include the Land Registry, Rijkswaterstaat (Directorate of Public Works and Water Management) and GeoNovum.

Geonovum is a government foundation whose primary function is to enable government to function better through the provision of geo-information (<https://www-geonovum-nl>). The

organisation's official mandate provides improved access to geo-information in the public sector through establishing and managing geo-standards. Geonovum coordinates the accessibility to property data and enables seamless data exchanges between different databases. The foundation works with all related relevant government organisations including ministries, provinces, municipalities, water authorities, and government agencies, to both improve the accessibility to geodata as well as enable the interoperability of geodata between organisations. Institutionally, Geonovum fulfils the function of the South African National Spatial Data Infrastructure's executive committee in the Netherlands.

The input data required for property rates in the Netherlands includes the following institutional arrangements:

The ownership rights of all parcels are recorded in the Basisregistratie Kadaster (BRK). This is the most important source of information as it provides the list of all properties to be assessed for recurring property taxation (Kathman & Kuijper, 2018). The Kadaster is the custodian of the Key Register of Large-Scale Topography, (Basisregistratie Grootchalige Topografie – BGT) and the Personal Records Database (Basisregistratie Personen) that includes a record of all residents and non-residents. The extents of all cadastral parcels are also recorded in this register. Moreover, this register contains complete and accurate information on property sales prices for both residential and non-residential property transactions. This is, essentially, the recurrent property taxpayer database, while the BRP or Business Register (Handelsregister) is the source data for taxpayers that are legal persons (companies, government agencies). The inclusion of this dataset is necessitated given the provision that property rates in the Netherlands are paid by the occupier as well as the owner.

The next key register is Key Register of Addresses and Buildings (Basisregistratie Adressen en Gebouwen – BAG). BAG refers to the occupancy unit (verblijfsobject) that is the smallest useable unit within a property. This national dataset includes details of the property unit, its construction data, the status of the building in terms of the completeness denoting whether the unit is finished, demolished or under construction. The BAG also includes addresses for each of the occupancy units. Such units may be designed for different purposes such as residential, commercial or recreational. All source documents (eg. building permits) pertaining to administrative or construction changes to a building and an occupancy unit, are also stored in the BAG register (Goorman, 2010).

Further property attribute data is collected by valuers employed by local municipalities. Property attributes used for the purposes of value determination differentiate between 'primary' and 'secondary' object characteristics. 'Primary' object characteristics include the type of property, the extent, the building extents, and the date of construction for the different building sections. 'Secondary' object characteristics are those that can change without any construction or building activities. These include building conditionality assessments, quality of finishes, the location of the property in relation to amenities and infrastructure (Kathman & Kuijper, 2018). Updating object characteristics or property attributes is increasingly achieved through automated detection or the deployment of smart mapping on time-based imagery layers. Other inputs include capturing changes to building permits, construction, or demolition authorisations by the respective municipalities. This

data includes conditionality details of the individual buildings, as well as rental, vacancy and operating cost information for non-residential properties. Current information is also acquired through landowner responses to questionnaires, or interactive websites hosted by the municipalities for this purpose.

The institutional relationships between the respective custodians of the different base registers in the Netherlands are formally documented and the data flows institutionalised. For example, the Ministry of Infrastructure and the Environment is responsible for the Kadastre or the BRK. The Key Register of Addresses and Buildings BAG base register contains data about all buildings and addresses, with the updating delegated to municipalities. As business owners are also liable for WOZ taxation, the Business Register (Handelregister) containing details of all registered businesses in the Netherlands is also required. This database is administered by the Kamer van Koophandel working closely with BAG. Formal institutional arrangements facilitate the interoperability of the various base registers. In summary, Geonovum together with its named development partners ensure the alignment of the administrative areas responsible for data consistency across the Key Registers.

Lastly, the Netherlands with its adoption of the 2040 National Policy Strategy for Infrastructure and Spatial Planning acknowledges that technology creates an advantage in their administrations. In his research on e-government based land information system architecture, Dangol (2012) states that government organisations use information and communication technology to increase efficiency and effectiveness in service delivery. There is a recognition about the need to change the way in which governments do business and move towards providing services and information centred on the citizen. e-Government, the generic term for an IT framework focused on three dimensions i.e. citizens, government and business, can improve the efficiency, availability and accessibility of services and information to the citizens, business organisations, professional users, as well as government organisations. Geospatial information forms an integral part of the information architecture for e-government. The Dutch system of data sharing embodies e-government through the extensive use of geospatial information.

The next section of the analysis addresses the operational aspects of the assembly and maintenance of the property or land information registers in the Netherlands.

6.5 AN OPERATIONAL PERSPECTIVE WITH RESPECT TO MUNICIPAL REGISTERS OF PROPERTIES – THE NETHERLANDS

This section addresses the different instruments or operational processes pertaining to property data management for property rates in the Netherlands.

As mentioned under the institutional thesis, Dutch ratepayers provide details of changes to their own properties through interactive municipal websites. Requesting stakeholder assistance is not only an efficient way to improve data quality, but this participation also escalates the trust of stakeholders and the assessed values (Kathman & Kuijper, 2018). The communication process around property rates in the Netherlands is inclusive with property owners and occupiers extending

relevant property data for the determination of fair and equitable property rates valuations to their councils. A new owner may query the WOZ value of an acquired property with the municipality. Such oversight facilitates the ongoing trust in the equitable characteristics of the valuation roll and the integrity of the WOZ values.

When considering the valuation methodologies, the Netherlands subscribes to internationally accepted valuation methods. The sales comparison approach is the standard approach for the determination of the market value of residential properties. The market value for non-residential properties is assessed in three different ways, namely: through the sales comparison approach, the income approach (capitalisation of the rental value), or the discounted-cash-flow method. In the instance where there is no market for specific properties the depreciated replacement costs must be determined.

It is noteworthy that the Special Act for Real Estate Assessment (WetWOZ) provides specific guidelines for valuations of properties where there is no market evidence. These propose that the depreciated replacement costs should reflect the value for the current owner in a case where there is no other interested party willing to buy this property on the market. Current building costs are used to assess the depreciated replacement costs with the application of depreciation at the valuer's discretion. Such properties include schools, power plants, industrial complexes, etc. Municipalities place their market information for properties without a market in a shared database. This nationally shared database enables municipalities to value non-market properties in a uniform manner (Kuijper & Kaathman, 2015). The depreciated replacement cost¹⁰⁶ is the least favoured of the valuation methodologies due to the subjectivity of the depreciation allocations and the varying building costs.

There are Dutch property price indices for different categories of properties. The Central Bureau of Statistics and the Kadaster prepare and maintain the Price Index Existing Homes that, together with the real estate agency indices, are updated monthly providing reliable market evidence. Non-residential indices, based on construction costs, are published annually by the same authority.

In the Netherlands, municipalities are responsible for the selection of their preferred valuation base or system as described by Kuiper and Kaathman (2015). There are two main systems in operation: both meet the requirements prescribed by the Council for Real Estate Assessment, the national oversight body. The systems use either regression analysis or valuation models based on clustering similar properties within the same area. Municipalities may select either the usable floor area ("gebruiksoppervlakte") or the gross volume of the buildings as the basis for property valuation for rating purposes. The usable floor area of residential units and the rental floor areas of office and retail space is used for the determination of market value. These dimensions and any changes to these extents reside with the Key Register for Addresses and Buildings (BAG) register, one of the

¹⁰⁶ RICS Valuation – Global Standards Glossary defines the depreciated replacement cost as 'The current cost of replacing an asset with its modern equivalent asset less deductions for physical deterioration and all relevant forms of obsolescence and optimisation',
Drc_method_of_valuation_for_financial_reporting_1st_edition_rics.pdf.

key base registers, notably the (BAG). Kathmann and Kuijper (2015) note that municipalities are increasingly moving towards the use of the usable floor area of the buildings. Both the gross volume and the usable floor area systems have formal standards, NEN 2580, issued by the national standards body, NEN. These standards detail the measuring procedures for both rating approaches. Measuring procedures are prescribed for all real estate agencies to ensure consistency across the property sector. Thus, whether the object data, whether primary or secondary, is acquired through registered transactions or listed sales, the input data is consistent.

The WOZ values are generated using the relevant mass appraisal processes for the different categories of properties. These processes require specialists in the fields of defining and optimising models using statistics and econometrics on the one hand, as well as specialists to manage and administer big databases on the other (Kuijper & Kaathman, 2015). Given the specialised character of the mass appraisal process, it is significant that the actual value determination for rating purposes is not determined by professional valuers but by specialists in the field of statistics, econometrics and data management. The assessors responsible for the valuation process do not hold any formal valuer training nor valuer qualification to perform as assessment officers (Kuijper & Kaathman, 2015). This aspect of the Netherlands rating model is compensated for by the provision of substantive training guidelines.

Once the Dutch WOZ values are assessed, these values are checked by an independent Council for Real Estate Assessment (Waarderingskamer) prior to the finalisation of the valuation roll. All owners and property users are informed of the new assessed values through an official tax bill for local taxes. This is distributed by post or is available on the government webpage, MijinOverheid. Ratepayers may also log in to the municipal websites to receive their assessment notices. The WOZ assessment notices include a photograph of the property and details of the property's attributes. The WOZ viewer may check their assessed WOZ value and its consistency with the market prices, as well as the assessed values of comparable properties. If the ratepayer disputes the WOZ-value, they may lodge an objection within 6 weeks of the original WOZ notification. Both the owner and the occupier have recourse to lodge objections. The objector is required to complete an objection form included in the tax assessment and submit this online. The objector will automatically receive a postponement of the payment to which they have objected, in other words the deadline for the property tax (Onroerende-zaakbelasting/OZB) is extended until the objector receives the final ruling decision. While the WOZ values are generally accepted, a small number of taxpayers lodge appeals against their WOZ values. Taxpayers are also encouraged to approach the Council for Real Estate Assessment informally rather than lodging a formal objection. Should the ratepayer remain dissatisfied there is recourse to pursue a formal legal route through the courts, initially the Court of Appeal and then the Supreme Court.

According to Kathmann and Kuijper (2015), municipalities are confident that the recurrent property tax administration is accurate, partly due to periodic comparison with the cadastral base registration, Kadastre, and the base registration addresses and buildings (BAG), but also due to the additional annual physical property inspections by municipalities. The mass appraisal model for rating

valuations in Netherlands earns global respect for its currency and accuracy and extensive use of technology. Yet the model owes much of its accuracy success to the routine annual physical property inspections that inform the secondary object characteristics. This approach underscores the importance of physical input data towards the accuracy of the value assessments.

The next section addresses the monitoring and oversight functions for property rates in the Netherlands.

6.6 A MONITORING AND OVERSIGHT PERSPECTIVE WITH RESPECT TO MUNICIPAL REGISTERS OF PROPERTIES - THE NETHERLANDS

The Netherlands has a national independent monitoring agency for recurrent property taxation, the Netherlands Council for Real Estate Assessment. This agency is staffed by professional valuers whose mandate is to conduct oversight of the WOZ values. The council is also responsible for setting the standards and guidelines about how these assessments should be conducted. The council is responsible for reviewing all of the values before these WOZ values are released to the taxpayers.

The Netherlands Council for Real Estate Assessment has defined quality requirements for valuations (Kuijper & Kaathman, 2015). These quality requirements relate to not only the quality of the appraisals, but also to the valuation process and the underlying method of process management. First and foremost, municipalities are required to check the correctness of the property data and property objects or attributes. The Netherlands has a strict protocol of adopting and adhering to specific property data standards. The Netherlands participated with the FIG (International Federation of Surveyors) Working Group initiative to extend the ISO 19152:2012 Land Administration Model (LADM). All the national property databases in the Netherlands are managed according to the ISO standard 19152:2012 Land Administration Model (LADM). Data checks are done before running the valuation models.

According to Kathman and Kuijper (2018), the most important aspect for successful mass appraisal results is the quality of data. To give effect to this policy, there are protocols for measuring the quality of the registered property or object data. It is mandatory for municipalities to apply these protocols at least annually and report their findings regarding the quality of their available property data to the Council for Real Estate Assessment. The Council for Real Estate Assessment also conducts periodic risk-based inspections. Sanctions may be applied to municipalities should they fail to meet the prescribed data compliance requirements. If the percentage of errors is too high the council instructs the municipality to perform additional checks or, according to Kathmann and Kuijper (2018), may be instructed to prepare a re-inventory of one or more of the characteristics for all of the properties.

The independent Council for Real Estate Assessment employs professional valuers to execute the monitoring and oversight function. Professional valuers operating in the Netherlands must acquire valid professional registrations through the Real Estate Register of the Netherlands, NRVt. The Council for Real Estate Assessment is an independent council that subscribes to TeGOVA, a European umbrella organisation of national valuer associations. This body monitors and promotes

the independence, integrity, and quality of the industry. The Real Estate Register of the Netherlands is affiliated to TeGOVA. TeGOVA's objective is to co-ordinate and update standards for the valuation profession, in terms of practice, education, qualifications, corporate governance and ethics (<https://tegova.org/>). TeGOVA has published valuation standards, the Blue Book, 9th Version, January 2021. These standards provide relevant and comprehensible guidelines to valuers, clients and public authorities.

The key finding is that the high level of user confidence in both the property data and the WOZ values is achieved through mandatory feedback¹⁰⁷. Any user of the data that identifies issues regarding the reliability of the data is required to feed back to the data custodian responsible for that respective base dataset. Data issues are logged as notations. The administrator of the respective dataset is obliged to investigate the correctness of the specific data and take the necessary remedial action as required. A self-cleansing system for the data is created through this mechanism. This mechanism emphasises that the more data users of a particular database, the higher the data integrity of the resultant database.

In summary, the Netherlands excels in managing its property data as a national asset with annually updated WOZ values ensuring high confidence amongst all stakeholders. All the key base registers have formally recognised data custodians. The Land Administration Domain Model (LADM) is used to manage the data quality of the input data including spatial data. Interoperable data enables efficient e-government performance. The independent Council for Real Estate Assessment enforces compliance with data and valuation protocols and standards.

The next section highlights key areas in the Netherlands model towards informing possible reforms in South Africa. The focus is on the input data required for property rates, as well as the base register system deployed by the Netherlands. This comparative analysis also addresses how these national base registers or property datasets are updated and maintained to ensure that the property rates remain equitable.

6.7 COMPARATIVE ANALYSIS: THE NETHERLANDS AND SOUTH AFRICA

This section identifies the good practices emerging from the analysis of the Netherlands system. The thematic sequence adheres to addressing legislative, institutional, operational and monitoring and evaluation perspectives.

6.7.1 Comparative analysis – Legislative/policy perspectives

In the Netherlands, the Ministry of Interior and Kingdom maintains base registers for property data for recurrent property taxation, ensuring public administration and supporting Dutch democracy. In contrast, South Africa's MPRA assigns the establishment and maintenance of municipal registers of properties to individual municipalities. In the Netherlands, all legislation related to base registers and

¹⁰⁷ Refer to the legislative provisions under Section 6.2.3.

property rates falls under a single national ministry, with the maintenance of key base registers being a national competency.

In South Africa, the legislative statute regulating recurrent property taxation, the MPRA, under the national Department of Co-operative Governance addresses the requirement for the establishment and maintenance of the individual municipal registers of properties. The SDI Act, under the national Department of Agriculture, Land Reform and Rural Development, addresses the spatial input data. Ownership data resides in the Deeds Registry separately to the cadastre that is housed in the Surveyor General's Office. These datasets are not interoperable.

A notable policy difference between the Netherlands and South Africa is the national strategic focus of the Netherlands on digitalisation and embracing technological advancements. The Netherlands has a dedicated national ministry for digitalisation located in the same Ministry of the Interior and Kingdom Relations. Government organisations use this digital infrastructure to improve their data exchange and to offer digital services in a reliable and safe manner. For example, each inhabitant in the Netherlands has access to a safe digital letterbox to receive (confidential) letters of any government agency with this digital infrastructure (Kathman & Kuijper, 2018).

In contrast connectivity, or the current inadequacy of connectivity in South Africa, hampers governance efficacies and effective stakeholder communication. The South African Constitution, Public Administration, Chapter 10, Section 195 (1)(g) explicitly states that a basic principle of public administration and co-operative government as “transparency must be fostered by providing the public with timely, accessible and accurate information.” Property and locational data are crucial for municipal service delivery. Without the capacity to integrate and interpret the data, critical business processes may be compromised.

The finding is that the current South African municipal information technology infrastructure is inadequate. Examples of organisational interconnectedness and operational networks are considered areas of excellence rather than the norm. In addition, the national postal services in South Africa have deteriorated to unreliable and unpredictable levels (Ittmann, 2023) with the agency currently under business rescue (BRP News, 2023). This adds a further complexity to how municipalities communicate effectively with their ratepayers. Routine procedures such as sending out statutory notices and rates accounts can no longer be achieved through using postal services. These tasks now require divergent hybrid solutions using various technological and social platforms to work around failed or obsolete national infrastructure. In conclusion, e-governance is embraced in the Netherlands with technology supporting government delivery and efficacies. In comparison, South Africa has many technological improvements to implement before e-governance becomes an operational reality.

In the Netherlands Valuation of Immovable Property Act, 2004, both the owner and the occupier are liable for the payment of property rates known as WOZ. Property rates is levied exclusively to the registered owners of property in South Africa. This provision has inherent challenges for South African municipalities, specifically those with areas of traditionally or communally owned property.

In the Netherlands there are limited categories of property for tax relief. The inclusion of the income tax status as an eligibility factor for rates relief for categories of owners in the Netherlands may be a consideration for rates relief reforms in South Africa. In the Netherlands the interconnectedness of the systems and the accuracy of the databases enables the income tax details of each applicant to accurately determine their eligibility for rates relief or a full or partial rates waiver.

South African municipalities are required to define eligibility criteria for applicants seeking relief in their individual rates policies. The rates relief for the categories of owners in the MPRA is extended to a closed list of owners, contained in Section 15(2)(a-f) of the MPRA. These include indigent owners, pensioners or other property owner's dependent on social grants, owners who are temporarily without employment, owners who have been affected by a disaster, bona fide farmers, and owners of residential properties lower than a value determined by the municipality. In South Africa rates relief for poor or indigent households is based upon the individual municipality's annually defined household income threshold. Such eligibility criteria differ between municipalities. The verification of criteria such as household income thresholds are typically determined through an affidavit from the applicant's ward councillor. This is a more subjective process than the Dutch eligibility criteria based upon the applicant's income tax status.

In the Netherlands, agricultural land is not rated while buildings on farms are rated. In South Africa the category of agricultural property including both the land and buildings is rated. However, rates relief is extended to properties used primarily for agricultural purposes through a prescribed ratio whereby the rates tariff for agricultural land is limited to 0.25 of the residential tariffs¹⁰⁸. The Netherlands exempts all public roads. Certain classes of public service infrastructure in South Africa including roads, water infrastructure, railway infrastructure, ports and harbours, airports and runways were phased out from having any liability for the payment of property rates over a period of five financial years from 2014.

South Africa's MPRA includes an extensive schedule of properties that a municipality may not levy rates against in Section 17 of the MPRA¹⁰⁹. These are referred to as impermissible rates and include places of public worship, properties owned by land reform beneficiaries, admiralty reserve and formally protected conservation areas amongst others.

In conclusion, there are similarities in terms of the basis of market value for recurrent property taxation. The most significant differences between South Africa and the Netherlands are the disparate rates relief extended to both categories of properties, and categories of owners receive discretionary relief in South Africa compared to the limited and tightly defined list of property rates relief beneficiaries in the Netherlands. The adoption of a deliberate strategic policy of digitisation has enabled this country to realise e-governance – this remains aspirational in South Africa.

Table 6.1 highlights the key areas of comparison discussed in the legislative thesis.

¹⁰⁸ Prescribed ratios, Government Gazette, No 32061, March 2009.

See Section 4.2.1 for the description of impermissible rates categories.

Table 6.1: Summary – Legislative perspective

#	Description	Netherlands	South Africa
6.1	Legislation perspective		
a	Dedicated statute for property valuation for public purposes	Special Act for Real Estate Assessment (Wet Waardering Onroerende Zaken) – Wet WOZ.	Local Government: Municipal Property Rates Act, 6 of 2004 – MPRA.
b	Government tier responsible for levying recurrent property tax	Municipalities	Municipalities
c	Responsibility for the assembly and maintenance of base registers or municipal registers of properties required for property rates	National and municipal level.	Municipalities are responsible for the assembly and maintenance of municipal registers of properties. Spatial data input is managed through a national department as is the registered ownership information and the cadastre.
d	All address and building data is collected by municipalities	Yes	Yes
e	Is the property data used for property rates interoperable between the respective databases?	Yes	No
f	Strategic focus on digitalisation and embracing technological advancements	National priority, dedicated ministry for digitisation.	Emerging national realisation.
g	Liability for the payment of recurrent property taxation	The property owner as well as the property occupier.	The registered property owner only.

h	Property tax exemption	Limited list including public roads, agricultural properties (not buildings), nature areas and churches.	Extensive list including: All public service infrastructure except gas pipelines, power stations, communication towers, has been phased out, Section 93A. All ratepayers qualifying for indigent status as defined in the municipal customer care policy. All formally protected areas. Properties registered in the name of and used primarily as a place of public worship including the official residence of the office bearer who officiates at services at that place of worship.
i	Recurrent property tax relief	Limited categories considered. Income tax used as the basis for eligibility criteria.	Categories of owners and categories of properties are identified in each municipal rates policy. There are different eligibility criteria in each municipality.

Source: Author's own compilation.

The next section of the analysis considers the institutional arrangements responsible for managing the key base data registers in the Netherlands. These enable the data to be interoperable, an objective essential for realising South Africa's constitutional objectives that state: "Transparency must be fostered by providing the public with timely, accessible and accurate information" (The South African Constitution, Public Administration, Chapter 10, Section 195(1)(g)).

6.7.2 Comparative analysis - Institutional perspective

The Netherlands manages property data for recurrent taxation through national base registers, including BAG, BRK and BRT registers. These registers contain property information, building data and usage details. Municipalities contribute updated property attribute data annually. The Netherlands' Kadaster and South African municipal registers of properties are similar in terms of base datasets, but the institutions managing them differ. The individual municipal registers of properties in South Africa are not interoperable, while the Netherlands' property attribute data integrates seamlessly with national key registers accessible to the relevant stakeholders including the public.

The prerequisite to achieve data interoperability in South Africa is the unique identification of property parcels in South Africa. This is currently limited to the Surveyor General's 21-digit key with its inherent shortcomings as described in Section 3.2.2. An immediate and accessible reform would be the prescription to use a naming standard and data format for all property register data. The proposed extended 32-digit SG key is proposed as the naming standard that would promote data

interoperability. Consensus about prescribed minimum input datasets would have to be achieved through stakeholder consultation.

A further challenge for South Africa is the absence of any regulated institution responsible for the establishment and maintenance of the municipal registers of properties. The resultant institutional arrangements for establishing the municipal registers of properties and maintaining the changes to property attributes are irregular and inconsistent across different municipalities. In theory, internal municipal business units should direct their updated property attribute data to the custodian of the property register. An example is the building inspectorate's issuance of a building occupation certificate. Such property attribute changes should trigger instructions for the municipal valuer to revalue the property through the preparation of a supplementary valuation. In practice, this communication is infrequent and inconsistent across the different municipalities. This may lead to compromised rates coverage, as well as inequity in the application of property rates.

In terms of the institutions responsible for key data inputs for the municipal registers of properties, South Africa has a similar separation between the Deeds Registry (ownership titles) and the Surveyor General (cadastre) to the Netherlands. In South Africa, both the Deeds Registry and the Surveyor General's Office fall under the Department of Agriculture, Land Reform and Rural Development. Each has a separate operational system. These systems are not integrated. In contrast the Netherlands adheres to a Land Administration Domain Model as the framework for data management. The GeoNovum agency promotes collaboration about data standards and exchange between all the relevant government organisations including ministries, provinces, municipalities, water authorities and government agencies. Data interoperability especially with respect to geodata is perceived as a fundamental tenet of e-government in the Netherlands.

In the Netherlands where the data interoperability is mandatory, relevant government departments use WOZ values as the market values of properties. In South Africa I would anticipate scepticism with concerns around data completeness, accuracy and integrity of the municipal values determined for property rating should these values be used for any other purposes. The integrity of the property data from the Netherlands model informs good practice regarding the metadata standards required for data interoperability. Development partners collaborate towards the assembly of property attribute data for property rates. A high standard of property data is achieved. It is noted that there are emerging initiatives in South Africa towards shared property data; these initiatives should be scaled based on the emerging good practice.

The President of South Africa, Mr Cyril Ramaphosa, appointed an Expert Advisory Panel, 2018, that returned the following recommendation:

“Develop a single, national data portal (Land Repository) for all land related information as a first step towards developing infrastructure for the ultimate integration, holding and maintaining of all land rights records. Through this begin to populate an integrated e-cadastre system with all other land-based information contained in separate government registers (water rights, mineral rights, land claims). This establishes the foundation for a comprehensive land record and administration system, linked to the

need for a reliable land audit" (Report of the Presidential Advisory Panel on Land Reform and Agriculture, 2019).

KwaZulu-Natal's Land Governance Summit (March 2022) mandated the Department of Municipal Planning, CoGTA, KwaZulu-Natal Province, to assemble an Integrated Land Information System. This system is based on the internationally accepted Land Administration Model's four administration pillars which are land tenure, land value, land use and land development. While in its formative stages, this initiative has potential for scalability with the proviso that appropriate property data standards are adopted and there are defined responsibilities between the respective data contributors and data users. This pilot initiative is considered as the first step towards developing geospatial data infrastructure and promoting data integration at a provincial level. These reforms should, in my opinion, be accelerated towards realising data interoperability.

Prior to this initiative, none of the property data established or maintained in the municipal registers of properties were shared beyond the immediate municipality. There are also no formally recognised custodians for the base property database used for property rates. The MPRA is silent about the custodianship of the property attribute data required for recurrent property taxation. The result is that individual municipal valuers collect different property attribute data. There is a case to be made for prescribing the attribute data to be used in the respective approaches, as well as for standardising the valuation database or system to hold the property attribute data. A further risk to the South African processes is that it is not mandatory for municipalities to deploy a valuation roll management system. Data interoperability is identified as a key area of reform. Such a reform should be guided by standards, possibly regulations, regarding naming conventions for property parcels and prescribed minimum data structures for the municipal registers of properties.

The observation is that, given the existing policy and institutional arrangements, there is little preventing South Africa's adoption of property naming standards and protocols for the minimum data required for property rates. A further recommendation is for the establishment of a government foundation such as Geonovum to motivate for collaboration around property data quality, integrity and accessibility.

Table 6.2: Summary - Institutional perspective

#	Description of the aspect of analysis	Netherlands	South Africa
6.2	Institutional perspective		
a	Taxing authority	Municipalities	Municipalities
b	Arrangement of property data required for recurrent property taxation.	System of national base registers.	Individual municipal registers of properties.

c	Regulated property data management.	Through the national base register system.	Not prescribed – property data is managed in a municipality or externally through 3 rd party service providers.
d	Framework for data management.	Subscription to the Land Administration Domain Model.	No prescribed data fields for the municipal registers of properties.
e	Unique identification of each property parcel.	National address data	Surveyor General's 21-digit key is not a unique identifier unless expanded to the 32-digit standard.
f	Base register or property register data is interoperable.	Yes	No
g	Formal procedural framework to capture changes to property data.	Yes	No
h	Management of geo-standards and co-ordination of geodata exchange.	Through Geonovum, an independent government foundation.	No responsible agency.
i	Likelihood of base register or property register data being used by other institutions.	Mandatory for all government departments.	Unlikely
j	Custodianship of the property data required for recurrent property taxation.	System of national base registers.	Undefined, this is a risk to municipalities.
k	National standards for geo-information.	Yes	Yes, but not implemented for municipal registers of properties.

Source: Author's own compilation.

The next section of the analysis identifies good operational practices in respect of property rates from the Netherlands that could possibly be adopted as reforms in the South African system.

6.7.3 Comparative analysis – Operational perspective

A key operational lesson from the Netherlands property rates system addresses the necessity for property attribute data to be standardised. The base registers in the Netherlands are administered at a national level with strict adherence to data standards and protocols. As this property attribute data is standardised, it may be shared with other government agencies as well as private third parties. Irrespective of the nature of the modelling or sophistication of the valuation techniques, both primary and secondary property attribute data is required as input data.

In South Africa the property attributes used as the input data for recurrent property tax value determination are neither specifically identified nor prescribed. Each municipal valuer uses a discretionary selection of property attributes for the determination of the market value used for levying property rates. Thus, a set of property attributes or the property data collected by one municipal valuer may have limited utility for the next valuation service provider. In terms of the copyright provisions in the MPRA's Section 85 - all data produced by the municipal valuer in the performance of their functions vests with the municipality concerned. Despite this statutory provision there is inconsistent compliance about data handover. This creates an operational disadvantage, one that could be circumvented with the deployment of municipal valuation roll management systems. This reform would result in the extension of the utility of the property attribute data as opposed to recollecting all property attribute data with every new appointment of a valuation service provider. With the development of appropriate data standards and protocols property attribute data would be interoperable therefore further increasing data utility.

Both the Netherlands and South Africa use market value as the basis of value for recurrent property taxation. The Netherlands uses data from both the registered sales transactions, as well as listed property sales towards the generation of their WOZ values. The duration that a property is listed for sale prior to concluding the sale is considered a factor towards market value determination. In South Africa market data is only derived through the price registered with the property's registration in the name of the new owner. This information is handicapped by inevitable time lags to finalise the registration processes. The analysis of listed property sales could be investigated as an additional source of market information towards informing future market trends. This option may be a useful reform for South Africa towards addressing the determination of market values in traditionally owned areas. In these areas there is no formal property market yet property transactions, albeit informal, are commonplace.

Despite the definitions of market value in the Netherlands and South Africa being similar, the currency of the input data is dissimilar. In the Netherlands, WOZ values are prepared annually, while in South Africa the validity of the valuation rolls endures for 4 or 5 years in metropolitan and local municipalities respectively. These roll validity cycles may be further extended by as much as 2 years. Given the informal procedures for data flows both coverage and equity are at risk in the South African model. This may be addressed through recommended institutional reforms, see Section 6.2.

The next identified variance is the adoption of technological solutions as a national strategy in the Netherlands. This prioritised policy promotes the use of smart mapping techniques and the

automated interpretation of time-based imagery layers towards equitable and fair recurrent property taxation. The input datasets used in the Netherlands are concurrent with the property rates values, WOZ values that are generated annually. In South Africa the 4- or 5-year roll validity cycles introduce a lag between the current property data and the input data used for the determination of rating values on the data of valuation, that may be up to 7 years prior to the current date.

Once the property attribute data is assembled, municipalities in the Netherlands may select an option from either the gross building volume or the usable floor area for the statistical determination of market value. The emerging preference is the use of the usable floor area of the buildings. Nonetheless, both options have formal standards. These standards detail the measuring procedures for both approaches through to value determination and quality checking for recurrent property taxation. In South Africa the valuation methodologies are not prescribed, the property attribute data is undefined and municipal valuers use varying methods for value determination for property rates.

In South Africa, the high costs of deploying data collectors, as well as the discretion to physically inspect properties, means that physical data collection is more the exception than the general rule. More cost-effective desktop options are implemented towards realising cost efficiencies. This scenario is different in the Netherlands where mandatory annual physical property inspections are conducted by municipal assessors. This good practice from the Netherlands indicates the value of comprehensive physical data collection towards accurate and equitable recurrent property taxation. Not only is the property attribute data current, but it is collected by trained property professionals. In contrast, in South Africa, physical property data collection, especially in the residential property sectors, is typically assigned to junior level staff, many of whom are not qualified property valuers.

In the Netherlands, once the physical input data together with the attribute data extracted from the national key registers is assembled, the determination of valuations for the purposes of recurrent property tax is assigned to specialists in the field of statistics, econometrics and data management. In South Africa, designated municipal valuers undertake the responsibility to prepare and certify all valuations for the purposes of recurrent property taxation. Municipal valuers must be professional or associated professional valuers. The training and capacity of the South African professional valuers is frequently criticised¹¹⁰.

The datasets for the assembly of the municipal registers of properties are large. The municipal valuer is at risk should the input data be incomplete or compromised. I conclude that the competencies required for mass appraisal should include both valuations and data management and statistical competencies. My observation is that generally professional valuers in South Africa are inappropriately trained for the data modelling and data management functions required to generate value models using mass appraisal techniques. This modelling function is undertaken by a handful of competent professionals with the balance of value generation for rating purposes reliant on

¹¹⁰ Refer to Section 5.6.8 for details regarding valuer qualifications and competencies.

spreadsheet calculations. This flags a finding for educational reform to be addressed through specialist training or, alternatively, augmenting the valuation teams with data modellers and statisticians.

When considering the different valuation methodologies that may be used for the determination of market value, both the Netherlands and South Africa subscribe to internationally accepted valuation methods. The sales comparison approach is adopted for residential properties. The market value for non-residential properties is assessed in three different ways, namely: through the sales comparison approach, the income approach (capitalisation of the rental value), or the discounted-cash-flow method.

Both countries experience challenges where there is no market for specific properties. In these scenarios the depreciated replacement cost approach is adopted. The Netherlands WetWOZ provides specific guidelines about valuations where there is limited or no market evidence. Further operational good practice from the Netherlands pertains to the collaboration between municipalities in assembling a shared building rate database. In South Africa, the valuation of certain types of property, for example, government owned schools, would benefit through the establishment of a shared dataset of building rates. There are various building cost publications, for example Rode's Report, in South Africa. However, the rural locations of many of these improvements means that building costs are excluded from such details. The use of the central database for building costs of non-market properties is a useful reform that could easily be adopted in South Africa.

While addressing property indices the Netherlands, the Central Bureau of Statistics and the Kadaster, publishes property indices that the public and government rely on for a high level of confidence and accuracy. The Netherlands Price Index Existing Homes is updated monthly providing reliable market evidence. Non-residential indices, based on construction costs, are published annually by the same authority. In South Africa the market value determined for property rates is not typically considered as the price that the property could achieve in the open market. There is scope for establishing reliable property indices for different categories of property in South Africa. These could potentially be used in the monitoring and evaluation functions for property rates and are addressed more expansively in the next section.

Both countries include community participation in their property rates processes. Community participation is addressed differently in the Netherlands and South Africa. In the Netherlands property owners are included and required to submit any changes to their properties, either primary or secondary attributes, through their municipal web portal. E-governance promotes access to statutory notices and other communication from government. In South Africa, the Local Government: Municipal Systems Act 32 of 2000 details mechanisms, processes and procedures for community participation. Operationally there are two key communication interventions during the preparation of the general valuation roll. The initial intervention is prior to the commencement of physical data collection and the second is to alert ratepayers about the availability of the general valuation roll for public inspection. The South African notices advising ratepayers of their new values could be

improved to demonstrate further transparency using a fact sheet as supplied to ratepayers in the Netherlands.

The transparency of property values determined for rating purposes in South Africa is currently further constrained by the commencement of the Protection of Personal Information Act, 1 July 2020. This statute requires that the name of the property owner is redacted in the published valuation roll. Community participation or engagement in the Netherlands is enhanced through the national strategy towards embracing technology and furthering the objectives of e-government. Communication with taxpayers in the Netherlands is achieved through the distribution of confidential letters to safe digital letterbox for all taxpayers. In contrast connectivity, or the inadequate or inconsistent connectivity in South Africa, hampers governance efficacies and effective stakeholder communication. A further disadvantage of the South African system includes its dysfunctional national postal services. The proposed reforms include formalising the recommendations by CoGTA to include other options beyond ordinary mail towards effective communication with municipal ratepayers.

In terms of respective objection processes, objectors, whether owners, occupiers or third parties, may lodge objections against property rates values or the categories of property. In the Netherlands payment of the WOZ taxation is suspended until the objection is resolved. Additionally, there is a prescribed timeframe within which the municipality is obliged to resolve the objection. In South Africa, irrespective of the lodgement of an objection or an appeal, the ratepayer is obliged to continue to pay the property rates until the matter is resolved. There are also no definitive timeframes aside from the provision for objection reviews to be dealt with 'promptly'. In South Africa the MPRA affords further recourse for an objector through an appeal application process. In the Netherlands the ratepayer may approach the courts if the objection review is unsatisfactory. There are some useful reforms for South Africa both in terms of the accountability of the timeframes required for the resolution of the dispute, as well as the suspension of the ratepayer's obligation for payment until the matter is resolved. The latter may be material and may prejudice the ratepayer, a principle that the South African legislators have endeavoured to avoid.

In South Africa, the updating of the municipal registers through the preparation of supplementary valuations is required to maintain equitable rating. In the absence of a valuation roll management system these operational practices are at risk. The responsible municipal business units should direct their updated datasets to the custodian of the property register. For example, when a building inspector issues a building occupation certificate for a new building this change to the property's attributes should be communicated to the municipal valuer. Such changes ought to trigger instructions through the VRMS for the municipal valuer to revalue the property through the preparation of a supplementary valuation. Once again, the annual review of the WOZ values in the Netherlands means that the WOZ values are aligned to the current market values. This mitigates any necessity for roll updating and valuation time adjustments to the date of the general valuation.

Table 6.3 provides a summary of the comparisons of identified areas between the Netherlands and South Africa from an operational perspective:

Table 6.3: Summary - Operational perspective

#	Description of the aspect of analysis	Netherlands	South Africa
	Operational perspective		
a	Property data attributes/object characteristics	Primary and secondary object characteristics are defined and standardised.	Property attributes are not prescribed. Different municipal valuers collect different attributes.
b	Utility of property attribute data	Existing datasets are maintained, and all changes captured.	Property attribute data has limited utility, dependent upon the roll validity period.
c	Data used for market analysis	Actual sales and listed prices.	Limited to transactional sales data only.
d	Data currency	WOZ values are generated annually.	Roll validity cycles are from 4 - 7 years.
e	Use of technology for change detection of property attributes/object characteristics	Smart mapping and time-based imagery layers.	Limited use of technology.
f	Valuation method	Option of two choices, both approved by the Council for Real Estate Assessment.	Not prescribed.
g	Physical property inspections	Mandatory for every property and conducted annually by municipal assessors.	Optional, typically property data collectors are junior resources.

h	Data management and value modelling	Assigned to specialists in the field of statistics, econometrics, and data management.	Municipal valuers must be professional or associated professional valuers.
i	Responsibility for value determination	Value determination is done by specialists in the field of statistics, econometrics and data management.	Municipal valuers are responsible for the determination of valuations for property rates.
j	Valuation methodologies	Consistent approaches for residential and non-residential properties.	Consistent approaches for residential and non-residential properties.
k	Valuation methodology for properties for which there is no market evidence	Depreciated replacement costs, specific guidelines in the Special Act for Real Estate Assessment for the valuation of non-market properties.	Depreciated replacement costs, subjective building costs and the application of depreciation factors.
l	Building costs database for various classes of non-market properties	Mutual national database for non-market properties.	No shared dataset of building costs.
m	Property indices	Central Bureau of Statistics and the Kadaster	Private sector indices.
n	Ratepayer participation	Active, via interactive websites in response to annual revaluations.	Limited engagement, further constrained by POPIA.
o	Property owner notification	Assessment notices together with property data sheet.	Section 49 and 78 notices, MPRA.
p	Use of technology to communicate with ratepayers	Digital letterbox facilities.	Dysfunctional national postal services.
q	Recourse to objection	May lodge an objection, the review must be finalised within 6 weeks, payment of rates is	Objection reviews are addressed promptly. Ratepayers must continue to pay until the matter is

		suspended until the objection decision is provided.	resolved. This includes the period up to and including the valuation appeal board hearing.
r	Further recourse following the outcome of the objection review	Courts	Appeal applications to appeal the outcome of the objection review are heard by an appointed Valuation Appeal Board.

Source: Author's own compilation.

The key findings from the Netherlands operational practices underscores the necessity for the standardisation of attribute datasets, the establishment of protocols towards sharing property data, as well as advancing the use of technology towards improved property rates efficacies. Without the establishment of an effective oversight agency, any standards and protocols may well remain empty policies. The Dutch model for property rates directs South Africa's consideration to include rigorous data oversight and monitoring by an independent agency. The next section addresses aspects of the monitoring and oversight procedures from the Netherlands that may be adapted to the South African context for improving rating oversight and monitoring. This includes both the input data and the values required for equitable recurrent property taxation.

6.7.4 Comparative analysis – Monitoring and oversight

The findings from this study indicate that the current rating oversight in South Africa is limited, with few exceptions, to procedural compliance with the legislated milestones, refer to Chapter 5. There are neither prescribed data fields nor any standards regarding what property data should be included as property attributes. Furthermore, there are no oversight mechanisms to evaluate whether this input data is complete and/or accurate. This is a risk to the efficacy of property rating - an area towards which South African municipalities could direct improvement.

Without implemented oversight mechanisms there are the inevitable questions about the coverage and integrity of the municipal registers of properties or the current valuation rolls. Access to or the use of the municipal registers of properties is limited to the respective municipality. This limitation means that there is no enabling mechanism for flawed or incomplete data to be discovered. The 'notations' system in the Netherlands is a potential reform that may address certain input data issues. The principle of the 'notations' system works when a data user finds grounds to query the accuracy of the data; the user is obliged to advise the custodian of that specific base register to investigate and, if necessary, rectify the record within a prescribed time.

In South Africa there are no formally nominated data custodians for the municipal registers of properties. The finding is that the function for the assembly and maintenance of the municipal registers of properties should reside in the municipality rather than be outsourced. Even so clarity is

required about the most appropriate business unit that should undertake this responsibility. Currently this function is assigned variously to Town Planning, the GIS Department, or the Financial Department, or may alternatively be outsourced to the service provider appointed to prepare and maintain the valuation roll. Thus, the inadequate institutional arrangements are perpetuated through to the entire roll maintenance period, possibly compromising the updating of the property attributes. Changes to property attributes are material to updating the valuation rolls. The finding is that mechanisms for maintaining the coverage and equity for property rates is both irregular and inconsistent across the different municipalities.

In contrast, in the Netherlands requires that all property data is checked by the municipalities with penalties for not meeting the prescribed data standards. This occurs prior to the value modelling. Once the municipality or rating agency has prepared the draft values, these are reviewed by the *Waarderingskamer* (Council for Real Estate Assessment). This council is staffed by professional valuers responsible for verifying the valuers and determined by the modellers. This function is exercised annually prior to the distribution of the updated WOZ values.

It is considered good practice for municipalities in South Africa to request the submission of a draft general valuation roll from their municipal valuers prior to the finalisation of the valuation roll. The purpose of this submission is to enable the municipality to review draft values and identify any incidences of tax shifts. Operationally, this is seldom a successful project phase, especially where project timelines are compromised. Furthermore, if the draft valuation rolls are submitted for review without relevant market evidence or standards against which to benchmark the draft values, the review of the draft valuation roll has limited merit. This exercise could be improved by the designated municipal valuer providing evidence of sales and anticipated market ranges for each category of property to motivate these draft valuations.

The lessons for South Africa include the requirement for a minimum set of input data to be agreed upon and then reviewed to ensure compliance. The adoption of a naming standard for property parcels is a prerequisite for data to be shared. The model from the Netherlands illustrates the advantages of an independent monitoring agency with the mandate to issue penalties for non-compliance.

The valuation profession in the Netherlands falls under the European Group of Valuers Associations (TeGOVA). TeGOVA has published valuation standards, the Blue Book, 9th Version, January 2021. These standards provide relevant and comprehensive guidelines to valuers, clients and public authorities. In so far as an equivalent set of MPRA standards for property rates in South Africa are concerned, the most similar are contained in the MPRA standards adopted by the South African Council for Property Valuers Profession (2021). In my opinion, without an independent implementing agency these standards will remain useless with limited incentive for material compliance by either the municipalities or their designated municipal valuers.

The final aspect of the comparative analysis of the property rates in the Netherlands and South Africa is directed towards the perception of impeccable integrity of the WOZ values in the Netherlands. The Netherlands Price Index Existing Homes Central Bureau of Statistics provides

reliable market evidence. This is used by property owners to inform the transactional values for their properties. While price indices are available in South Africa, these are extended by private enterprise, notably the banking sector. It is improbable that any prospective South African property purchaser would rely solely on the municipal valuation to inform a purchase price. The buyer may acquire the municipal rates valuation as a contributing factor towards their decision. The impeccability of the WOZ values is further emphasised through the mandatory use of these values by other Dutch agencies for all issuing mortgage bonds and the determination of personal income tax. In comparison, the values prepared for the purposes of property rates in South Africa are used exclusively for this purpose.

Table 6.4 summarises the key points of differentiation between aspects of the oversight and monitoring practices in the Netherlands against the existing oversight mechanisms in South Africa.

Table 6.4: Summary - Monitoring and oversight perspective

#	Description of the aspect of analysis	Netherlands	South Africa
6.1.4	Monitoring and oversight perspective		
a	Oversight model	Input data and valuation accuracy.	Primarily procedural compliance, excludes oversight of property data attributes and coverage.
b	Property data attributes/objects are standardized	Yes	No
c	Data correcting mechanisms	Notations system directs data queries to the data custodian.	None in place.
d	Data custodians	Regulated.	Discretionary, informally nominated in each municipality or outsourced to external service providers.
e	Data management framework	Land Administration Domain Model.	None, aside from a pilot Integrated Land Information System in KwaZulu-Natal.
f	Data currency	Annual generation of property rates values.	Lengthy roll validity cycles (4-7 years)

g	National independent monitoring agency	Yes, Waarderingskamer (Council for Real Estate Assessment).	No National and Provincial Departments of Co-operative Governance provide procedural monitoring.
h	Valuation oversight	Yes, professional valuers at a national level are responsible for the verification of valuations.	Limited review of value accuracy by municipalities when reviewing the draft general valuation rolls.
i	Quality assurance provisions for valuation accuracy, valuation process and process management.	Yes, quality assurance provisions for valuation accuracy, process and process management are reviewed.	Oversight is predominately procedural. The valuation accuracy and process management aspects are currently excluded.
j	Recourse or penalties for municipalities	Instructions to municipalities to perform additional checks or recapture all data.	No recourse for incomplete or inaccurate data, either to the municipality nor the appointed service provider.
k	Risk based inspections on municipal datasets	Yes, conducted by the Council for Real Estate Assessment.	None
l	International standards for the management of ownership, value and land use are implemented	Yes, ISO 19152:2012 Land Administration Model (LADM).	None
m	Data standards for property attributes	Yes	No
n	Data checks prior to valuation modelling	Yes	No
o	Apply annual data quality protocols	Yes	No
p	Application of industry professional standards	Yes, European Group of Valuers Associations (TeGOVA).	MPRA Standards are endorsed by the SACPVP (valuer's

			statutory council) but are neither applied nor enforced.
q	National property indices	Yes, prepared and updated monthly by Central Bureau of Statistics and the Kadaster.	Yes, prepared by the private sector.
r	High confidence in recurrent taxation valuations	Yes	No
s	Use of the rating valuations is mandatory for all other government processes	Yes	No

Source: Author's own compilation.

The areas highlighted in the summary Table 6.4 indicate the importance and necessity for the development and use of data and valuation standards, as well as for prescribed data management protocols and processes. The final section of this chapter includes concluding remarks highlighting the key differentiators elevating the Netherlands as a global leader in property rates models.

6.8 CONCLUDING REMARKS

In these concluding remarks, I make the case for adopting certain good practices and processes from the Netherlands into the South African property rates system. These will be discussed in more detail in the final chapter where I will draw conclusions from all the chapters and refine the recommendations for the current and potential roles of municipal registers of properties in South Africa.

The analysis of the property rates model in the Netherlands and South Africa reveals key similarities and divergences. In the Netherlands nominated data custodians maintain key national property databases with managed data integration. Access to this complete and accurate property data contributes to ensuring accurate valuation assessments. In contrast, South Africa's municipal registers of properties and valuation rolls are prepared and maintained by each individual municipality. Data sharing is not common practice. Most municipalities do not take custodianship of these property datasets, with externally appointed valuation service providers holding all project related property data during their contract period and frequently not leaving it with the municipality on the termination of their contracts. The emerging recommendation is to house all valuation and property data in the municipal registers of properties. In this model the VRMS integrates with the municipal register of properties as the central property data hub in municipalities. VRMS are not explicitly provided for in the MPRA.

The Netherlands and South Africa have different approaches to property data collection. In the Netherlands, physical property data collection is mandatory and conducted by municipal assessment officers. In South Africa, mass valuation determination is the responsibility of registered professional valuers designated as municipal valuers. Due to the high costs of physical data collection, much is

achieved through desk top data capture with limited physical property inspections. Both countries use market value and a specified date of valuation, with the Dutch model conducting re-assessments annually. Both countries subscribe to internationally accepted valuation methodologies. The difference being that the Netherlands includes listed sales and transactional evidence, while South Africa only permits transactional evidence to inform market values. The Netherlands has a dedicated Ministry for Digitalisation, while South African internet infrastructure is inadequate, especially in the more remote rural areas of the country. Dutch ratepayers receive statutory notices about their property rates values, while South Africa faces communication challenges due to dysfunctional postal services combined with inadequate connectivity. Both countries allow property owners to object to the values determined for rating purposes.

The Netherlands' dominant focus is on data, valuation standards and oversight processes. South Africa's legislation provides nominal provisions for monitoring the completeness and correctness of municipal registers of properties and conducts no oversight regarding the accuracy of the values determined for property rates. Despite similarities in operational practices, property rates in South Africa are challenged both legally and through increasing civil actions. South Africa needs to adopt reforms to legislative frameworks, address institutional silos, and establish an independent oversight and monitoring agency to improve its property rates efficacies.

The next chapters utilise the findings from the preceding chapters for improving the efficacies of property rates from the perspective of the establishment and maintenance of the municipal registers of properties through developing these into potential reform recommendations. These findings include what previous authors have written, a critical review of how current municipal registers of properties are presently established and maintained from a legislative, institutional and operational perspective, as well as insights from the extant monitoring and oversight instruments for rating in South Africa. These together with lessons learned from the mature legislative, institutional and operational practices in the Netherlands are framed as reform recommendations the South African model of property rating.

CHAPTER 7: MAIN ISSUES AND FINDINGS AROUND THE MUNICIPAL REGISTER

7.1 INTRODUCTION

According to Kelly (2013), the initial step towards successful preparation of valuation rolls or the assembly of a property tax base is the collection, recording and management of the property information. The accuracy of the property tax database and the correctness of the property data are risks for property tax efficacies. Given the contribution of property rates of between 20-30 percent to municipal 'own source revenue' property rates are important for the financial sustainability of local government in South Africa¹¹¹. This chapter integrates the investigation about how municipal registers of property are currently implemented and whether they provide complete and accurate coverage for property rates. The operational findings address how the municipal registers of properties may support the prescribed municipal financial transactional reporting to National Treasury and to what degree municipal revenue management may be complemented through access to geospatial municipal registers of properties. Finally, this chapter includes findings regarding the adequacy of the current quality assurance and oversight provisions in the relevant legal frameworks.

The same sequential structure addressing the legislative framework, the institutional arrangements, and the operational aspects is followed. The findings culminate in an integrated set of key reform recommendations in the final chapter, Chapter 8. The tax coverage provided by the municipal registers of properties is defined as a principal tenet for property rating efficacies and successful financial reporting. Coverage is, in my opinion, the single most important factor for effective property rates in South Africa. The initial assembly of the property registers to establish coverage must be followed by diligent updating of the municipal register of properties as property attributes change. Maintenance must be sustained for the duration of the validity period of the valuation roll to maintain rating equity. Inadequate institutional capacity and poor or inconsistent monitoring frameworks of municipal registers of properties are identified as key findings.

The initial consideration is whether we are all calling the same thing the same thing. There are challenges around the different nomenclature used for the municipal registers of properties. The legislative platform for the assembly and maintenance of the municipal registers of properties is provided in Section 23 of the MPRA. The municipal property register, Part A, is also called the current valuation roll in the MPRA. Industry stakeholders may also refer to these same datasets as the billing or the consolidated valuation rolls. The municipal register of properties is frequently interpreted as a schedule of properties to be included in the valuation roll, in other words, a table without cadastre. This dataset may be called the property master file or, simply, the master or erf file. The MPRA Standards (sMVPR_V9.1_2021_SACPVP) refer to the geospatial property register as the Valuation Roll GIS Cadastral layer. None of these variations are referred to in the MPRA. This serves to illustrate the inconsistent understanding of Part A of the municipal register of properties.

¹¹¹ Refer to Figure 1.1.

Thus, the initial finding is to clarify the definition of the municipal register of properties and, once this is achieved, to standardise the specification guidelines for assembly and maintenance of these registers.

In terms of Section 23 of the MPRA¹¹², Part A of the municipal property register, or the current valuation roll, includes the values determined in the general valuation, together with any objection reviews and appeal decisions, as well as any subsequent supplementary valuations that may have been prepared following the certification of the general valuation roll. Supplementary valuations are prepared on an ongoing basis for the duration of the validity period of the valuation cycle, namely five years for local municipalities and four years for the metropolitan municipalities. The correct definition of Part A of the property register is the current valuation roll or the version of the valuation roll that integrates with the municipal billing system to generate monthly rates accounts against which ratepayers remit their property rates to the municipality.

Combined with the finding about various interpretations of what the property register is are different understandings about the current role of the property register in the municipalities. The findings of this thesis provide evidence of the current role of the property register as the platform for recurrent property taxation, as well as fulfilling an incomplete function as a financial reporting instrument and, potentially, providing property information within the broader ambit of land administration. Though conceptually tenable, the reforms towards achieving a comprehensive land administration system through aggregating the municipal registers of properties upwards to provincial and national levels includes substantive institutional and technological changes.

7.1.1 Summary of the literature review

The literature review in Chapter 2 includes what previous authors have written about rating coverage, property inventories or registers, as well as reforms undertaken in different countries about improving cadastre and land information systems. The key finding from the literature review is that the second-best approach may be the best strategy for South Africa for now: that institutions matter and there is valid motivation for investing in good property data collection and data administration.

The literature review discusses the significance of property rates as a revenue source for municipalities worldwide. Previous authors highlight the importance of complete coverage, valuation roll currency, efficient administrative systems and adequate human resource capacity as influential factors for recurrent property tax performance. Other performance considerations include the various service delivery mandates, the size and growth of the tax base, other revenue sources available to municipalities, as well as the political will or mechanisms to enforce collections. Property rates efficacies are universally an important component of own-source revenue for municipalities. Infrastructure, especially the

¹¹² See Figure 4.1, Schematic illustrating the municipal register of properties.

technological infrastructure, and operational capacity for these systems, are essential. Good property data, transparent processes and public access to data are considered important for improving ratepayer perceptions and ensuring equitable recurrent property taxation. A further important finding is the application of the collective property datasets assembled and maintained for rating coverage to also be deployed towards fulfilling a role in land governance frameworks and land information systems.

7.2 FINDINGS - LEGISLATIVE FRAMEWORKS

7.2.1 Introduction

The legislative frameworks relevant for municipal register of properties include the following: the MPRA, the MFMA including the regulatory mSCOA reforms and the SDI Act. There are existing oversight and monitoring frameworks in each of these statutes. Chapter 5 identified room for oversight and monitoring improvement across all three legislative frameworks. Despite the critical importance of the municipal register of properties for both property rates efficacies and successful municipal transactional reporting, neither CoGTA nor National Treasury, provincial or national, review the coverage of the municipal registers of properties. Notably there is no reference to the SDI Act, the legal framework responsible for spatial information, in the MPRA and the MFMA, nor vice versa. These legislative omissions detract from enabling access to policy makers and planners in the public sector and the broader community to consistent high-quality geospatial information.

The legislative findings are addressed chronologically commencing with the MPRA and then proceeding to those pertinent to the MFMA and SDI respectively.

7.2.2 MPRA findings

Chapter 4 provides a critical review of how municipal registers of properties are currently implemented in South Africa. The workflow process of generating property rates is initiated through the identification and assembly of all properties in a municipal jurisdiction into a municipal register of properties. The management of the property data and ongoing record keeping as property attributes change is equally important. Property rating requires that all properties are assigned as market valuations on the date of general valuation, either through CAMA or individual assessments. These valuations are presented as the valuation roll. The municipality is responsible for determining the appropriate rating tariffs, issuing the rates accounts, billing, collection and enforcement. The municipal rates policy determines the eligibility and application mechanisms for discretionary rates relief that should also be incorporated in the tariff determination process.

7.2.2.1 Findings: Part A of the municipal register of properties

In the South African context, the role of the municipal register of properties is focused on the two processes, namely property identification to establish rating coverage and property data administration to maintain such coverage. The municipal register of properties may also be used to

support the municipal financial transactional reporting prescribed by National Treasury's mSCOA regulations, provided that the municipal register of properties is presented as a geospatial database. The VRMS hosting the valuation data and the municipal billing systems should have a seamless integration. The finding is that this is rarely the case. From a legislative perspective the findings from this thesis identify the limited extent to which data captured in the municipal registers of properties is checked through any monitoring or oversight. The reform recommendation is that the access to and utility of this property data may be improved if the legislation was amended to prescribe the use of a geospatial municipal register of properties with standard data structures and data flows, including a uniform naming protocol for all property parcels. This final data attribute is a prerequisite for data interoperability.

In South Africa municipal registers of properties are assembled and maintained at municipal level in accordance with the provisions of the MPRA. In the Netherlands the property base datasets are administered at a national level with data quality assurance being prioritised. The 'notations' system operational in the Netherlands extends the prerogative, should there be grounds, for any data user to query the accuracy of data with the data custodian. No such checks and balances are in place in South Africa. A key finding is for both the nomination and appointment of data custodians for the municipal registers of properties. Such data custodians would be accountable for both the assembly and maintenance of the municipal registers of properties. This finding is addressed more fully in Section 7.3.5, under Data Custodianship.

The omission of the requirement for the municipal register of properties, as provided in the MPRA to be geospatial, results in a diverse range of deliverables. The extract from Section 23 of the MPRA with the author's own underscore to provide emphasis is included below:

"MPRA, Section 23, Register of properties. (1) A municipality must draw up and maintain a register in respect of properties situated in that municipality, consisting of a Part A and a Part B."

The finding of this thesis is that the municipal registers of properties currently delivered to municipalities are inconsistent, ranging from the comparatively costly assembly and maintenance of a geospatial municipal register of properties to a simple tabular register, or no deliverable for the property register at all. In the absence of a complete and accurate geospatial register of properties, coverage is compromised, resulting in incomplete or incorrect valuation rolls. The updating of Part A of the property register is achieved more efficiently using a geospatial register. The visual support provided by the geospatial platform supports changes to property attributes such as subdivisions and consolidations through viewing on a map or geospatial platform rather than as a spreadsheet.

As with all data, interoperability is key to the utility of the property data. A key finding is that the prescribed use of the expanded 32-digit Surveyor General's key is an obvious reform. This protocol is described in a set of geotechnical practitioner's guidelines (SAGI Municipal Register of Properties: Practitioner's Guidelines, 2020). This research finds that the inclusion of the expanded 32-digit Surveyor General's key should be a mandatory property attribute in the municipal register of properties and the mSCOA chart of accounts. Such linkage would enable the valuation records in the current valuation roll or Part A of the municipal register of properties to be linked directly to

municipal accounts in the financial systems. The inclusion of the expanded 32-digit Surveyor General's key could support accurate billing for property rates and municipal services, as well as regional segment reporting for mSCOA compliance. The successful alignment of records between municipal financial systems and the VRMS would enable the valuation and financial systems to balance, advancing complete and correct billing for municipalities.

Section 12 of the SDI Act No. 54 of 2003 stipulates that a data custodian must also capture and maintain metadata for any spatial information held by it. The metadata should also be included in the electronic metadata catalogue shared with users of the data. If this is achieved, then data interoperability will be attained. A set of standards and data structures forming part of the spatial data infrastructure would enable the municipal register of properties to be generated, maintained and used by the various role-players. There are also implications for the data interoperability and the seamless integration required between the municipal financial systems and their VRMS achieved through API's. A common key to link the financial and valuation datasets is an obvious reform recommendation. This proposed reform recommendation is the extension of the Surveyor General's 21-digit code to 32-digits to enable unique spatial recognition for each property parcel. Should this common data link remain unregulated, the risk is that municipalities may be unable to achieve the record-by-record balancing between their financial system and Part A of the property register.

The current MPRA Section 23(2) provides that Part A of the register consists of the current valuation roll of the municipality, including any supplementary valuations rolls of the municipality prepared in terms of Section 78. These rates become payable with effect from (a) the first day of the month following the posting of the notice, or the date of the event driven attribute changes. Such changes include the date of the subdivision, consolidation, re-demarcation, or the date of the issuance of the building completion certificate or rezoning, refer to Chapter 4, Section 4.6.2 for an expanded explanation of the roll updating procedures. The finding advocates the removal of the word 'rolls' from the definition of Part A of the property register. This change would enable the provisions for the municipal registers of properties to be re-aligned with Section 78, MPRA. The risk of including the word, 'rolls', is that it infers that the supplementary valuations may only be uploaded to the Part A or the billing roll after publication of the annual supplementary valuation roll. This legislative change would rectify what I perceive to be a drafting error, as the contradictions raised by the inclusion of 'rolls' cannot be intentional. The amendments to the MPRA, Section 78 are purported to improve municipal cash flows with the least prejudice to the ratepayers. To limit Part A to only reflect the annual supplementary valuation rolls creates an operational limitation for municipalities. If this provision is followed to the letter, then the intention of the ongoing supplementary valuations prompting 'real time' billing for municipalities whenever a Section 78 trigger is realised is forfeited.

In South Africa, the provisions for the assembly and maintenance of the property registers resides at a municipal level. There is no prescribed data structure for the municipal registers of properties. The finding is that data interoperability cannot be achieved without reforms to address property naming conventions, data structures and data flows. In contrast, the Netherlands has twelve base registers, five of which have a geographic component. Municipalities are responsible for updating

these datasets that are integrated into a national database by the Kadaster, Land Registry and Mapping Agency of the Netherlands. In the Netherlands, any changes to property data in any of the base registers is conveyed from the source and immediately updated to the central data repository. This finding indicates that a formal framework to coordinate the data flows ensures that the single version of the truth as this pertains to property data is maintained.

As the MPRA provides for differential rating in how properties are categorised and how rates relief is extended are important details included in Part A of the municipal registers of properties. Ackerman *et al* (2022: 37) note that the rates policy forms the “backbone of the budget of the municipality regarding the income derived from property rates”. Municipal rates policy provides for both the categories of properties and categories of owners of properties required for recurrent property taxation. The next section identifies the findings relevant to the provisions of the rates policy.

7.2.2.2 Findings - Rates policy

The MPRA provides for differential rating, that is different rates or tariffs are applied to different categories of properties. Section 8 of the MPRA prescribes a schedule of categories of properties that includes residential, business/commercial, industrial, agricultural, properties used for a public service purpose, public benefit organisations, public service infrastructure, mining, properties used for multiple purposes and vacant land. Discretionary rates relief may be assigned to both categories of properties and categories of owners of properties. The findings relevant to rates policies include a range of definitions for business/commercial, industrial properties and vacant land, as these are undefined in the MPRA. Different understanding exists about how the MPRA’s prescribed categories of property should be applied and there is confusion about how additional categories and subcategories of property are permitted. Practitioners and ratepayers are unclear on how to avoid impermissible differentiation in a category of property. There is also a need to review rates relief strategies to achieve tangible relief for vulnerable communities in the municipality, while maintaining equitable treatment of ratepayers.

Challenges result when municipal valuers collect property data, determine values, and finalise general valuation rolls without consulting the municipality’s rates policy for details of the different categories of properties. This simple operational check at the inception of the valuation project would prompt the municipal valuer to allocate properties to municipality’s categories of properties according to their actual use, rather than the municipal valuer’s categories. Examples of irregular property categories include open space (both public and private), schools, small holdings, and special and specialised nonmarket properties. ‘Special properties’ may refer, in valuer’s parlance, to special nonmarket properties, properties that are not commonly exchanged in the open market. Special properties include but are not limited to city halls, historic buildings, government schools and hospitals. Alternatively, ‘specialised properties’ are understood to include shopping centres, lifestyle estates, casinos, hospitals and other properties requiring specialised and, possibly, an individual valuation approach. The challenges arise once the new general valuation roll is prepared and then matched against the rates policy categories of properties, as well as the categories of properties

reflected in the municipal tariff structure in the municipal billing system. A simple procedural check at the inception of the project would mitigate this risk.

In addition to the prescribed schedule of categories of properties provided in the MPRA, a municipality may determine additional categories of properties if these do not circumvent the categories of rateable property prescribed in Section 8(2). Ackerman *et al* (2022) list various optional additional categories of properties that include game farms, township remainders, private townships, municipal owned properties, sports clubs, protected areas and cemeteries. Confusion exists between the MPRA categories of property and the classifications for the different categories of property reflected in the MFMA's mSCOA Chart, v6.8. This issue is addressed under Section 7.9.2 highlighting emerging institutional issues.

Omission of definitions for certain prescribed categories of property in the MPRA is a further issue. Definitions for commercial and business properties, industrial properties and vacant land are excluded from the MPRA. Having reviewed various rates policies, the following definitions for these categories of properties are recommended:

“Business” or “commercial property” means - property used for the buying, selling or trading in commodities, goods or services and includes any office accommodation or facility on the same property, the use of which is incidental to such activity.

“Industrial property” means - property used for a branch of trade or manufacturing, production, assembly or processing of finished or partially finished products from raw material or fabricated parts in respect of which capital and labour are involved, and includes –

- (a) The production of raw products on the property;
- (b) The storage and warehousing of products; and
- (c) Any office or other accommodation on the same property, the use of which is incidental to such activity.
- (d) Dedicated workshops used in the repair of vehicles, equipment and plant, tyre fitment and recycling of materials.

“Vacant land” means - any undeveloped land as listed including bulk land identified by the municipality in an approved Surveyor General Plan, Township Layout or approved general diagram.

The inclusion of regulatory definitions would provide clarity for properties used for warehousing, grain silos, panel beating shops and battery centres. These are examples of properties that currently fall into either the business or industrial categories, depending on the discretionary allocation of different municipal valuers.

The other outstanding category of property definition is for vacant land. The recommended definition of vacant land is that all vacant land located in a general plan, irrespective of the attached zoning, is allocated to the vacant land category of property. In terms of this definition, there would be clarity that all properties located outside of a general plan be considered agricultural land attracting the prescribed rates ratio for agricultural properties.

A further finding identified in this thesis is the re-allocation of the original discretionary categories of properties permitted by the MPRA to the prescribed category of properties provided in the MPRA Amendments. For example, state owned properties are reassigned to one of the prescribed categories of properties according to the property's actual usage. Typically, state-owned properties have more than a single use and the adopted approach is to assign the parent property to the multiple purpose category. The market value of the different uses is determined and the applicable rates for the different categories are applied to the apportioned values. For example, government schools, clinics and hospitals are individually valued and assigned the rates applicable for public service purpose, commercial or business 'portions' within the multiple purpose property and attract business rates with agricultural and residential portions attracting the respective agricultural and residential tariffs and discretionary relief as applicable.

Ackerman *et al* (2022) criticise the legislators for leaving the door wide open for valuers to decide on the apportionment of value; whether this should be done based upon the area of the different uses or the value of the different components of the property. The overriding principle is that the result should be fair and equitable and reflect the value of all components, as if the component had been separately valued. A further emerging issue is how to reflect the multi-purpose property in the valuation roll. The MPRA provides no guidance. The adoption of the proposed naming standard for property using the expanded 32-digit Surveyor General's code as outlined in Section 7.2.2.1 Part A of the municipal register of properties addresses the issue. It is noted that the parent property does not attract a tariff, whereas the apportioned values of the different uses are assigned the applicable differential tariffs.

Despite confusion about subcategories of properties between CoGTA and National Treasury - subcategories of properties are permissible, see Chapter 4, Section 4.3.1. The MPRA Amendments, 2014, provide for the discretionary introduction of subcategories of property. Municipalities choosing to include subcategories under their principal categories of properties are required to apply to the Minister with an adequate motivation including demonstrating that these subcategories are not in contravention of Section 19 of the MPRA - the provision for impermissible differentiation in a category. Such applications should reach the Minister 15 months ahead of the commencement of the financial year that the applicant intends to implement these subcategories, MPRA Section 8(4)(b)(i) and (ii). Irrespectively irregular subcategories persist in various municipal rates policies and valuation rolls. For example, the differentiation between rural business and urban business are irregular subcategories. The application of different tariffs for these two subcategories represents impermissible differentiation in the 'business' category of property. The definition of what is 'urban' and what is 'rural' is not defined. I contend that if the municipal valuer has performed his function, the market values will accommodate the different locations of the properties.

This leads to the need for clarification as to what constitutes impermissible differentiation as provided in the MPRA, Section 19(1)(a-c). These provisions advise that a municipality may not levy- (a) different rates on residential property unless the residential property is vacant, (b) a rate on a category of non-residential property that exceeds the prescribed ratio for the categories of property

subject to the prescribed ratios (agriculture, public benefit organisations and public service infrastructure), and (c) rates that unreasonably discriminate between categories of non-residential properties, unless these are additional rates due to the establishment of a special rating area. The intention of the legislators is to ensure that ratepayers are treated equitably and that higher tariffs were not raised on more valuable properties compared to less valuable properties in the same category of property. The case law mentioned in Chapter 5, Section 5.2, Legal and Societal Challenges, indicates that aggrieved ratepayers will seek recourse from the courts where the impermissible differentiation between residential and non-residential categories of properties is perceived as prejudicial. The fruitless expenditure necessitated through responding to such litigation may be avoided through more rigorous review of the rates policy and tariff resolutions by the respective provincial oversight department, CoGTA.

An exception to this is accommodated in Section 22 of the MPRA, which provides for special rating areas as an established precinct within a municipality, where the ratepayers raise funds for additional rates for upgrading or improving this identified precinct. Such funds are used for additional services, i.e.. not services provided by the municipality.

The amendments to the MPRA provide for prescribed categories of property. This standardisation should enable more effective rating oversight through the comparative analysis of the rate randages applied to these prescribed categories of property. The issue is that while the categories of property are prescribed, there are no prescriptions or limiting parameters for discretionary rates relief. Such rates relief may include exemptions, reductions and rebates. Municipalities exercise their discretion to decide on the eligibility criteria and the application mechanisms for applying for such relief. Such rates relief decisions are informed by affordability as well as other circumstances. In contrast to South Africa, the Netherlands extends full or partial tax waivers to natural persons eligible in terms of their personal tax assessments. This results in tax waivers being issued in an equitable and objective manner. Online applications for tax waivers are processed using the government website and the applicant's online personalised DigiD. The outcome of any application must be issued within 13 weeks of submission. This system also demonstrates the power of the integration of the base registers in the Netherlands, a model that South Africa should aspire to achieve. The rating model from the Netherlands also illustrates how IT connectivity enhances municipal service delivery to communities, and how defined timelines for the finalisation of an application process promote accountability.

A key finding emerging from the analysis of municipal rates policies is the limited understanding of the rates relief either using exemptions, rebates or reductions, and how these may be applied through alternate strategies. The function for quantifying the various rates relief resides with the municipal budget teams informed by the criteria provided in the municipal rates policies. Taking residential rates relief as an illustration, the purpose of discretionary rates relief is to extend material relief to vulnerable households. The application of a rebate or a discount granted on the amount payable on the property should be carefully weighed against a reduction or the monetary reduction of the value of all properties by a fixed quantum, say R200,000.

The definitions in the MPRA describe a reduction as a rate payable once the lowering of the value has been done, and then rating the property on the lower amount. Through a reduction of R200,000 for example from the value of all residential properties, the owners of lower value properties receive substantial material relief, while the owners of higher valued properties are still addressed equitably. The adoption of this strategy does not require a reform, it's just plain arithmetic requiring improved comprehension of a pro-poor strategy for extending discretionary rates relief. Currently the MPRA's monitoring framework requires municipalities to report their differential tariffs for each category of property. This exercise would be more meaningful if the nett tariffs after the discretionary rates relief were analysed. The MPRA is explicit in Section 3(3)(f) that the effect of property rates on the poor should be considered. Yet neither CoGTA nor National Treasury provide adequate pro-poor tariff modelling support.

The next finding under the rates policy section relates to rates relief extended to categories of owners of property. These provisions in the MPRA, Section 15(2)(a-f) identifies a closed list of beneficiaries. The categories of owners of property may include: (a) indigent owners; (b) owners dependent on pensions or social grants; (c) owners temporarily without income; (d) owners in disaster areas or any other serious or adverse social or economic conditions; (e) owners of residential properties with a market value lower than a threshold value determined by the municipality, and (f) owners of agricultural properties who are bona fide farmers. There is no provision for any additional categories of owners of properties. Clarification with respect to rates relief to categories of owners must start by aligning municipal customer care or indigent policies with the respective municipal rates policies. This is an obvious inclusion in the respective monitoring frameworks. Municipalities should also be cognisant that the MPRA's category of owners of properties list is closed and that there is no provision for additional categories of owners of properties.

The definition of a bona fide farmer continues to be debated. This category of owner is not defined in the MPRA, yet Section 15(2)(f) provides that owners of agricultural properties who are bona fide farmers are eligible for discretionary rates relief. Adoption of the definition of all property outside of a general township plan as agricultural in terms of zoning or permitted use has reference. The limitation is that this entire land extent is not owned by bona fide farmers. The City of Polokwane's rates policy, 2020/2021, defines a bona fide farmer as owners who are carrying out bona fide farming operations where the genuine intention is to develop the land as a farming proposition (City of Polokwane Rates Policy, 2020/2021). Municipalities use various criteria for bona fide farmers including the presentation of IT34A income tax certificates issued by the South African Revenue Services to affidavits endorsing their status of bona fide farmers from the local farmers associations. The application of rates relief to bona fide farmers or the agricultural property sector is inconsistent across the different municipalities and does not promote equitable rating. The agricultural category of property is already subject to a prescribed ratio, whereby agricultural properties may only be rated at a ratio of 0:0,25 of the residential rates tariff. It is useful to note that in the Netherlands, agricultural properties are not taxed. However, the buildings on such properties are subject to recurrent property taxation.

Furthermore, under the subject of rates relief to categories of owners of properties, the civil riots and looting that South Africa experienced in July 2021 indicated an inconsistent municipal response to the plight of distressed property owners. The provision for relief to categories of owners enables municipalities to extend immediate rates relief to categories of owners affected by the civil unrest, or the serious adverse social and economic conditions through Section 15(2)(d) of the MPRA. Only eThekweni Metropolitan Municipality (Durban), KwaZulu-Natal, invoked this provision to extend immediate rates relief to applicants whose business properties were either completely or partially destroyed.

Business property owners in all other affected municipalities, including the City of Johannesburg, waited several months until supplementary valuations were prepared, supplementary valuation review notices sent, and the decreased values uploaded to the billing systems for reflection on rates accounts. The supplementary valuations were prepared in terms of the MPRA, Section 78(1)(d) in respect of a property in which the market value has significantly decreased since the last general valuation. These municipal delayed responses do not comply with the intention of the rates policies to promote local, social and economic development as provided in Section 8(3)(i) of the MPRA. I concede that the adjusted rates through the supplementary valuations was retrospective to the date of the looting occurrence. However, ratepayers whose properties were damaged, and businesses destroyed were prejudiced due to the liability to continue payment until receiving their Section 78 valuation review notices.

Several issues raised as under this rates policy section are also relevant as findings under institutional and operational considerations. The next focus area addresses other findings from the MPRA. These include issues around public notices of valuation rolls, objection reviews and the right of appeal and the implications of these for equitable rating. Any changes through objection reviews and applications against these reviews through valuation appeal board decisions are reflected in Part A of the property register, the current valuation roll, and are therefore material for this thesis. To maintain equitable rating, the current valuation roll or Part A of the property register must be updated through the preparation of supplementary valuations. Roll updating and its inconsistent use is a material finding. While Part A or the current valuation roll is given the prominence in the thesis, Part B of the property register could provide a stronger monitoring role for both CoGTA and National Treasury. These findings are addressed in the following sections.

7.2.2.3 Other findings – MPRA

- *Findings - Objection review processes*

Oversight of the objection review process is not included in any of the current MPRA monitoring framework provisions. Section 51 of the MPRA provides for 'promptly' as an open-ended window for municipal valuers to consider objection applications. The timeframe for 'promptly' is dependent on the number of objections applications. To illustrate this point: the City of Johannesburg, a metropolitan municipality in Gauteng, received 42,000 objections against their 2023 general valuation roll, while Ubuhlebezwe Municipality, a small B4 municipality in KwaZulu-Natal received a

total of 5 against their general valuation roll for the same period. The timeframes for processing the respective objection reviews in each instance are vastly different. In the Netherlands where public authorities adhere to a high standard of service delivery, there is a Code for Good Public Administration. This code prescribes how executive bodies and public servants engage with citizens and other public authorities. The Failure to Give Timely Decisions Act (Penalty Payments and Applications for Review) allows citizens to receive a penalty payment should a public authority exceed the prescribed time for responding to an application or a notice of objection. It is recommended that a similar policy regarding accountability of the public service officials to ratepayers be considered in South Africa.

As with the application for rates waivers in the Netherlands that must be processed within a defined thirteen-week period, this promotes certainty for all parties, refer to Section 6.3.2. Thus, it is recommended that municipalities analyse the quantum of objection applications on the closing date of the objection period. This presents a contractual opportunity for the municipality to negotiate a reasonable period for their designated municipal valuer to consider the lodged objections and return the objection reviews. This period should be communicated to the public to promote certainty and accountability. Improvements to the MPRA's monitoring and oversight framework may include supporting the determination of a reasonable period for the municipal valuer to return the objection reviews to the municipality. The risk of this legislative provision remaining unmonitored is ratepayer confusion, as objection reviews address objections from previous roll periods concurrently with receiving Section 49 notices for the current valuation roll.

- *Proposed reforms - Right of appeal*

Should an objector be dissatisfied with the outcome of the objection review, he has recourse to appeal against this. This is known as the right of appeal and is provided for in Section 54 of the MPRA. The appointed valuation appeal board must adjudicate and decide on each appeal application on its merits. There are two identified issues with respect to the valuation appeal boards and the appeal process. The initial one pertains to the omission of a statutory notice advising the appellant or the registered owner of the valuation appeal board decision regarding the outcome of the appeal application. This is especially relevant to the objection reviews that include more than a 10 percent adjustment in value, either up or down. The valuation appeal board also has jurisdiction to review and revoke these review decisions through a compulsory review of the municipal valuer's decisions.

The second issue regarding valuation appeal board decisions is how and whether these final appeal decisions are uploaded to the financial system. The MPRA remains silent on how the valuation appeal board's decisions are communicated to the financial system. Too often these appeal board decisions are not uploaded to the financial system. The implication of this omission is that the already aggrieved ratepayer's remedial action is delayed further. This risk may be mitigated through the submission of a before and after report co-signed by the Chairman of the Valuation Appeal Board, the municipal valuer and the municipal manager.

The preamble to the MPRA provides for fair and equitable valuations and rating. The issue of investigating equitable rating following the outcome of an objection review or a final valuation appeal board decision remains unmonitored and poses a potential risk for municipalities.

- *Proposed reforms - Equitable rating*

The challenge for equitable rating is whether the valuations of the other properties in the group or neighbourhood where the successful objection/appeal was lodged should also be reviewed. The municipality itself may address this through lodging objections against the values of other properties in the group. This remedial mechanism would redress valuation parity and ensure the equitable treatment of ratepayers. In instances where the municipality remunerates the appointed valuer per objection, such remedial action is unlikely. The result is that valuation equity is compromised through redressing property values where objections are lodged, yet disregarding the other properties in that group or neighbourhood whose values may also be compromised.

From the perspective of the municipal register of properties, mapping or showing the objections/appeals on a spatial platform is an indispensable instrument towards identifying neighbourhoods or areas within the municipality where no or few objections are lodged, or where objection review may prompt the reassessment of all of the valuations in the respective group of properties. The omission to map the objections on a spatial layer deprives the municipality of the ability to identify areas where no objections have been lodged. Such analysis may direct attention to where property values are below market value.

Section 82(2)(b) of the MPRA extends the national monitoring provisions to investigating sales ratios and the accuracy of valuations. While the investigation is not the subject of this thesis, the recommendation is that exercise of this ministerial mandate be more thoroughly implemented towards achieving equitable rating across all municipalities.

- *Findings – Statutory notice and account distribution*

To recap, once a certified general or supplementary valuation roll is published, there is a 21-day statutory timeframe for all registered property owners to receive notifications. These regulatory Section 49 notices include the extract of the roll pertaining to the relevant property, as well as details advising the property owner of his/her recourse to object to any information included in or omitted from the valuation roll. As ratepayers and civil organisations become more sophisticated in their scrutiny of local governance, there are increasing challenges regarding whether the provisions of Section 49 are fully complied with. Section 49 notices must be posted to registered property owners by ordinary mail, two media advertisements are to be published on two consecutive weeks prior to the opening of the inspection period, hard copies of the published valuation roll must be displayed in municipal offices, libraries etc, and the published roll should be viewable on the operational municipal website. Lastly, a notice advising that the roll is available for public inspection must be published in the provincial gazette.

In Chapter 4, Section 4.6.2, the investigation of MPRA challenges included reference to roll publication, objections and appeals. The diverging interpretation as to whether the municipality or the appointed valuation service provider are responsible for issuing Section 49 notices to the ratepayers was identified. Western Cape municipalities demonstrate a contractual bias for their contracted municipal valuers to send out the Section 49 notices. While the MPRA provides that Section 49 functions vest with the municipal manager, this function is typically outsourced to the valuation service providers within this province. To add further confusion, Section 78(5)(b) of the MPRA assigns the responsibility of issuing Section 78 supplementary valuation review notices advising a property owner of a revaluation through the preparation of a supplementary valuation to the municipal valuer. CoGTA needs to provide a clear directive regarding the appropriate party responsible for issuing statutory notices. The finding is that if these statutory notices are not generated from the VRMS in the municipal IT environment, the municipality is exposed. Where the municipal valuer undertakes contractual responsibility for sending the various notices, the municipality has no access to these statutory notices nor any management of the timeframes within which these notices are sent, or even whether the notices are sent at all. As the civil organisations become more interrogative of compliance requirements, such anomalies may translate into challenges against the validity of these published valuation rolls. Another limitation is that without access to the data base containing these notices, municipalities may be unable to satisfy ratepayer requests for copies of notices. CoGTA issued a directive in January 2024 with respect to the mandatory provisions highlighting the risks of litigation by aggrieved property owners, ratepayers, ratepayers' associations, and any interested persons in the pursuit of nullifying the use of the new valuation roll and consequently, the levying and collection of rates (Shilubane, 2024).

An increasing number of municipalities are actively embracing digital account distribution realising that issuing accounts through email and short message services (SMS) is more reliable than ordinary mail services. Municipalities, for example, the City of Johannesburg, sends monthly municipal bills to ratepayers through SMS's. As ordinary mail is explicit in the MPRA, in both Sections 49(1)(c) and 78(5)(b), the legal provisions for 'posting' should be clarified.

The MPRA confers the onus upon the property owner to advise the municipality if accounts are not received. Despite this provision, ratepayer surveys still return responses indicating poor payment statistics due to incorrect postal addresses or billing details, or that the accounts were never received.

- *Findings - Roll updating*

This thesis identified inconsistencies in the way in which roll updating and maintenance is implemented. The correct procedure is for supplementary valuations to be prepared whenever necessary (author's own emphasis), and for the Section 78 notices to be sent to the registered owners as soon as these revaluations are prepared. If correctly implemented the rates reflecting updated valuation will be raised, and the updated municipal accounts issued ahead of the publication of the annual supplementary valuation roll.

There are municipalities where no supplementary valuations are prepared for an entire year. The municipal valuer then prepares all the supplementary valuations necessary and publishes these in the annual supplementary valuation roll. This is irregular procedure and poor practice. These incorrect procedures deprive the registered owner of their legislative recourse to request a review of the supplementary valuation as provided in Section 78 of the MPRA and may obstruct the intended cash flow from the supplementary valuations for the municipality.

Another challenge is the determination of the effective dates for the liability for the payment of rates through a revaluation or the preparation of a supplementary valuation. For example, the effective date for a supplementary valuation triggered due for a subdivision or consolidation or date of issue of the building completion certificate is the effective date of the subdivision or consolidation or the date on which the completion certificate was issued. The provisions of the effective dates are detailed in the MPRA, Section 78(4)(a-e). Clarity is sought about which party is responsible for capturing these effective dates. In my opinion the municipality should assign this delegation to the municipal valuer. This allocation would provide an internal control to ensure that the effective rating date aligns with the provisions of Section 78(4)(a-e) in accordance with type of supplementary valuation prepared by the municipal valuer.

Where a property record is omitted, as detailed in Section 78(1)(a), or where a property was substantially incorrectly valued during the last general valuation, (e) or where a property must be revalued for exceptional reasons, (f) or where the value of the property was incorrectly recorded due to a typical error (h), then the rates liability is from the first day of the month following the posting of the Section 78(5)(a) notice. Simply stated: If a Section 78 notice is not sent, the liability for the payment of rates may not be raised. The risk to the municipality is the forfeiture of revenue until these supplementary valuations are prepared, the Section 78 notices sent, and the rates are raised. If the preparation of these supplementary valuations is neglected, the municipality risks diminished revenues from property rates.

If the delays and lags in the preparation of supplementary valuations and the issuance of Section 78 notices are not impeccably managed by the municipality, this may also include financial prejudice for affected property owners. For example, when an occupation certificate for a newly constructed residential property is issued, a supplementary valuation recognising the substantial increase in value since the last general valuation (Section 78(1)(d)) should be prepared and the revised rates account issued timeously to the ratepayer. Any delay in the preparation of such supplementary valuations means that the rates accounts are backdated to the date on which the occupation certificate was issued. This results in an accumulation of rates due from the date on which the occupation certificate was issued to the date on which the rates account is prepared. This may result in a lump sum accumulated through the lag, or a prejudicial amount due by the affected homeowner. In summary, it is both poor practice and underperformance for a municipality to only attend to the preparation of supplementary valuations annually instead of 'whenever necessary'. This legislative principle is reinforced through the MPRA Circular 10 (2016) that states that such lags should be removed in the interests of justice and fairness in the treatment of affected property owners. The

limited impact of this circular indicates that a firmer reform strategy may be required to address this issue.

While Part A is given prominence in this reform review, it would be remiss to ignore recommended reforms applicable to Part B of the municipal register of properties.

7.2.2.4 Findings - Part B of the municipal property register

Section 23(3) of the MPRA provides that Part B of the property register is an annual statutory report reflecting any exemption, rebate or reduction (discretionary rates relief) as well as impermissible rates identified in the MPRA's Section 17(1)(a), (e), (g), (h) and (i) that may be applied to property records in Part A of the register. There is no mention of the Part B reports in the MPRA's prescribed monitoring frameworks, either under the national or provincial frameworks provided in the MPRA, Sections 81, 82 and 82A. This is despite these annual reports being statutory reports.

The purpose of the Part B report is to ensure that municipalities are extending rates relief consistent with their adopted rates policies. These annual reports provide oversight that rates relief is not being extended in an ad hoc manner. In addition, Part B could provide National Treasury with a useful monitoring instrument to check municipal reported income foregone. Income foregone is defined as the amount of discretionary rates relief that the municipality extends annually to eligible categories of owners of property or categories of property. The equitable share formula is the annual allocation of funds (Distribution of Revenue Act) from National Treasury to support the municipal operations and the delivery of services to communities. The income foregone is a consideration in the calculation of the equitable share received by the individual municipalities. This finding suggests that the annual Part B report could be utilised as an instrument to check income foregone reporting.

Summarising the findings of the property register from the legislative perspective of the MPRA prompts consideration of the input data required for the assembly of the municipal register of properties. The next section addresses the findings relevant to the input datasets. The findings include issues regarding ownership data, cadastre, the requirement for a unique property identifier, data interoperability and data custodianship.

7.3 FINDINGS- INPUT DATA FOR THE GEOSPATIAL MUNICIPAL REGISTER OF PROPERTIES

7.3.1 Property ownership and sales data – Findings

The South African Deeds Registry is the land registration authority. Despite the prominence of this registry, it does not have a spatially referenced data base. The literature review, Chapter 2, includes details from various authors who wrote that a good-quality land registration system plays an indispensable role in supporting property appraisal (Tang *et al*, 2011). The Deeds Registry in South Africa also provides the details of property transactions. Recent transactions are important in the process of property value determination for property rates. The Deeds Registry is therefore the custodian of both the ownership details and the sales information, both critical datasets for property valuations. The criticism of South Africa's Deeds Registry is that the data updating processes lag,

sometimes by only several weeks but, on other occasions, by many months. This impacts the accuracy of the deeds data and compels the municipal valuer to look to other data sources to compensate for these inefficacies. An available alternative data source for informing market value is sales listings. Listed sales data is used successfully in the Netherlands where listed sales data is mined at a national level and statistically processed towards informing accurate market values.

One of the biggest drawbacks in the South African Deeds Registry and the Office of the Surveyor General is that while these two independent agencies collect and store common property information, they do not use a common information system. It is recommended that should such a system be considered and that the agreed instrument has a strong spatial component. The next set of vital input data for the geospatial property register is the cadastral layer or the spatial data.

7.3.2 Cadastre – Findings

The Office of the Surveyor General is responsible for cadastre, both the registered and unregistered layers. The spatial cadastre indicates the physical location of each property parcel and assigns each property parcel a unique identifier. The Surveyor General's unique identifier is currently a 21-digit alpha numeric cadastral code that follows accepted business rules. The Surveyor General's diagrams of each property record provide the unique property designation together with an illustration of the property, boundary descriptions and corner beacons along with the area or extent of the property. This information is publicly available through a web-enabled portal¹¹³. The identified shortcomings of the Surveyor General's 21-digit SG code in its current limited format are detailed in Section 3.2.4 and illustrated in Table 3.2.

7.3.3 Unique property identifier – Findings

Given the requirements of the geospatial municipal register of properties to provide an accurate platform for the preparation of general valuation rolls, and through the maintenance of the property register which prompt the preparation of supplementary valuations for the updating of the current valuation roll, Part A of the municipal register of properties, it is in the interests of municipalities to subscribe to a unique property identification code. Local authorities and public utilities must have unambiguous specifications as points for service delivery (Coetzee & Cooper, 2007). The Surveyor General's 21-digit SG code should be expanded to accommodate sectional title schemes and sections, as well as the unregistered properties, and properties used for more than one purpose etc. Once achieved each property parcel will be uniquely identified. This will enable successful regional segment reporting prescribed by National Treasury's mSCOA business reforms. Additionally, this thesis identifies the potential role of municipal registers of properties towards improving the accuracy of the national spatial development plan. Thus, service delivery efficacies, mSCOA reporting, the performance of property rates and planning decisions should all benefit from the proposed standard naming protocol to uniquely identifying each property parcel.

¹¹³ <https://csggis.drdlr.gov.za/portal/home/>.

Professional engagement between professional valuers and the South African Geomatics Institute resulted in the development of a practitioner's guide for the assembly and maintenance of municipal registers of properties (James & Channing, 2020). This practitioner's guide provides a standard naming protocol enabling the unique identification of individual properties, as well as specifying the necessary technical process toward assembling and maintaining geospatial municipal registers of properties. The reform recommendation is that the expanded 32-digit Surveyor General's code should be formally adopted and the Practitioners Guide for the assembly and maintenance of municipal registers of properties, already endorsed by the South Africa Geomatics Institute, considered as a preliminary standard for the assembly and maintenance of the municipal register of properties.

One of the other challenges confronting practitioners assembling municipal registers of properties is how to reflect communally owned properties, especially in instances where ownership vests with a traditional leader/s. Occupiers of these properties, often many households, expect municipal service delivery as a fundamental constitutional right. Research shows that occupiers of property want their rights documented (Cousins *et al*, 2005). Such land holdings pose a challenge for the assembly of municipal registers of properties. The cadastre reflects large properties with multiple usages. Informal boundaries between the various land usages may be visible on current aerial imagery. For example, a school may be delineated by the classrooms, but where the playing fields begin, and end become less defined. When authenticated by local knowledge the accuracy of these 'boundaries' improves. Technology exists and is available to capture these 'boundaries' at a nominal cost. The land surveying profession is well-established to support the development of the proposed records or certificates of occupation. The resultant occupational identification may be upgradable to formal title over time.

The next section addresses findings towards improving data interoperability. This improvement may be facilitated through the adoption of the proposed expanded 32-digit SG code.

7.3.4 Data interoperability – Findings

The Spatial Data Infrastructure Act (SDI Act) includes provisions to designate structures and mechanisms for co-ordinating data contributions. These should be developed into a national policy to enable spatial data sharing supported by practical tools.

This thesis indicates that different service providers as well as different business units in municipalities use various processes for acquiring, sorting and analysing their property data. In the instance of spatial data, these various data users use a variety of identifiers in these datasets. The adoption of standard naming protocols would enable property data to move more readily between the different applications and systems, both internally within the municipality, between the municipal and its appointed service provider/s, as well as third parties. Standard naming protocols could enable property datasets to be exchanged between service providers as contracts change. This would reduce the costs of data collection.

The established precedent is for the shared SG 21-digit code to be used as the common data field between the financial systems and the VRMS. As outlined above the current 21-digit configuration has limitations. The initial step is to reform the concatenation of the SG code to the proposed expanded 32-digits. This will facilitate the seamless data exchange through prescribed Automated Programmatic Integration or secure File Transfer Protocols between the municipal financial systems and the VRMS. Such data exchange is necessary to enable compliance with National Treasury's mSCOA regulations. Further motivation for proactively addressing this finding is that the more users of a system or database, the greater the opportunity for data correction and improved data integrity. This leads to the next finding that addresses the data custodianship of the municipal registers of properties.

7.3.5 Data custodianship – Findings

The South African Spatial Data Infrastructure Act is based on tenets of responsible custodianship and the capture of unimpaired data. The appointment of data custodians and use of sound data governance is necessary for the use of the spatial data infrastructure. An important legislative finding identified in this thesis is for the municipal geospatial property register to be considered as a critical 'base dataset'.

According to Chauke *et al* (2021), the definition of a base dataset is ambiguous. The SDI Act defines a base dataset as "those themes of spatial information which have been captured or collected by a data custodian" (SDI, Section 1). The definition does not explicitly differentiate base data from other data. The criticism is that the legislative definition is too broad and could be applied to any institution capturing spatial information. This thesis's findings concur with Chauke *et al*'s (2021) refined definition that base geospatial datasets should be identified as a minimum set of essential datasets used as a reference base at various administrative levels. Municipal registers of properties fulfil this criterion as essential base datasets. The finding is twofold: that the municipal registers of properties be recognised as essential base datasets, and that municipalities be nominated and appointed as data custodians of the municipal registers of properties.

Municipalities, as official data custodians, would be obliged to adhere to the standards and prescriptions of the SDI Act. This would prompt the accuracy of municipal reporting to improve and enhance the details in the National Spatial Development Framework, as the municipal registers of properties are cascaded upwards to provincial and national levels. The District Development Model proposes aggregating local spatial data into a district level plan, OnePlan. OnePlan is only achievable through data interoperability or the adoption of a standard naming protocol and monitored standards. The relevant institutional reform recommendations are addressed under Section 7.9.2: Municipal reporting and data interoperability.

Table 7.1 provides a schedule of the legislative findings as these relate to Parts A and B of the municipal registers of properties. This schedule is followed by a summarised schedule labelled Table 8.2.

Table 7.1:Legislative findings – Parts A and B of the municipal registers of properties.

A. Part A of the municipal property register reforms				
Ref #	Legislative reference	Description of the finding	Proposed reform	Reform mechanism
1		The municipal register of properties resides with municipalities	The key datasets are maintained at national level.	
3	23(1)	Insertion of the prescription for a <u>geospatial</u> register	Insert the word 'geospatial' ahead of register.	MPRA Amendment
4	23(2)	Definition of Part A	Removal of the reference to 'rolls'.	MPRA Amendment
5	23 & 78(2)(a-h)	Requirement for a geospatial property register	Necessity for a geospatial property register to be assembled and maintained for equitable recurrent property taxation.	MPRA Amendment or Regulation
6		Naming protocols for property parcels	Use of a unique naming protocol – the expanded 32-digit Surveyor General's code - to be prescribed.	SDI Regulation
7		Municipal property registers are assembled and maintained at a municipal level	The integration of national and local datasets. Prescribed data structures. Data flows are regulated.	SDI Regulation
8		Availability of geospatial data	All spatial data is available to the public through a geo-platform.	SDI Regulation

9	49(1)(c)	Section 49 notices	Clarification regarding the VRMS from which these notices should be issued – ideally from in the municipality's systems environment.	Circular
10	51	Objection workflow process	Improved contractual control of what 'promptly' constitutes in this context.	Monitoring framework, MPRA Section 80(3) Netherlands - Code for Good Public Administration
11	51(b)	Consultation with the owner if the owner is not the objector	Check that there is a submission from the owner in the objection review process, should the owner not be the objector.	Monitoring framework, MPRA Section 80(3)
12	Preamble	Fair and equitable rating	Investigation into the consequences of amending a single property's values through an objection review/appeal decision in terms of fair and equitable rating.	Monitoring framework, MPRA Section 80(3), Section 82(2)(b) Municipality to exercise its right of review to address valuation parity
13	49(1)(c)	Section 49 and Section 78(5)(b) notices	Oversight to ensure that the statutory notices are sent within the prescribed timeframes or even at all.	Monitoring framework, MPRA Section 80(3)
14	49, 53, 78	All statutory notices	Migration to digital communication with ratepayers.	Amendments to MPRA, S49(1)(c), 78(5)(b) should indicate that posting via a secure communication is not limited to ordinary mail
B. Legislative findings: Updating Part A of the municipal register of properties				
1	78(1)(a-h)	Supplementary valuations	A municipality must, whenever necessary,	Regulation

			cause a supplementary valuation to be prepared.	
2		Effective dates for 78(1)(a-h) and 4 (a-e)	Clarity about which party is responsible for populating the effective dates for billing purposes.	Circular
3	4 (aA)(e)(f) & h)	Effective dates for rates liability	Clarification that these supplementary valuations may only raise a rates liability from the first day of the month following the posting of the S78(5)(a) notice.	Circular
4	78(1) & 78(1)(b)(c)(d)(g)	Least prejudice to the ratepayer	Timeous preparation of supplementary valuations, whenever necessary.	Monitoring framework, MPRA Section 80(3),
5	31	Date of valuation	Time adjustments back to the date of general valuation required for supplementary valuations – a better understanding of the application of tax clearance certificates.	MFMA monitoring framework, equitable rating
6	33	Irregular roll alterations by financial officials	Prescription for a VRMS with an API with the financial system.	MFMA monitoring framework
7	78	Valuation roll and supplementary valuations, Part A of the property register	Clarification of the currency of the valuation roll and any changes subsequent to the General Valuation to be reflected in Part A of the municipal register of properties.	Circular
C. Legislative findings: Rates policy				
Ref #	MPRA ref	Finding description	Proposed reform	Reform mechanism
1	Definitions	Certain categories of property do not have MPRA definitions	Insert MPRA definitions for business/commercial, industrial properties and vacant land.	Regulation

2	8(3)	Vacant land	Clarification that vacant land is a prescribed category of property.	Circular
3	8(2)	Additional categories	Clarification that additional categories are permissible provided they do not circumvent the prescribed categories in Section 8(2).	Circular
4	8(4)(b)(i) and (ii)	Subcategories	Clarification that additional categories are permissible provided they have had their application authorised by the Minister of Co-operative Governance.	Circular
5		Adopted categories of properties	A council resolution adopting the categories of properties at the commencement of the general valuation project is proposed.	Governance
6	MPRA and mSCOA chart reforms	Misalignment of the mSCOA chart to the prescribed categories in the MPRA	The mSCOA chart should be aligned to the prescribed categories – as provided in the MPRA.	mSCOA chart amendment, v6.8
7	48(2)(g)	Prescribed particulars in the valuation roll	The mSCOA chart classification should be included in the contents of the 'valuation roll' as a prescribed particular.	mSCOA chart amendment, v6.8 or Section 48, MPRA prescription
8	80(3)	Extension of the monitoring framework	A proposed monitoring template for alignment of categories of properties and financial tariffs in municipal rates policies, valuation rolls, tariff resolutions and financial systems is adopted.	Monitoring framework, MPRA Section 80(3)
9	19(1)(a-c)	Impermissible differentiation	Clarification of the provision for impermissible differentiation in a category and between residential and non-residential categories of properties.	Monitoring framework, MPRA Section 80(3)

10	3(3)(f)	No oversight of the impermissible nor discretionary rates relief	Improved understanding about the application of the rates relief instruments by all stakeholders.	Monitoring framework, MPRA Section 80(3)
11		Rates relief is extended equitably, at a national level	Rates relief should be linked to personal income tax assessments and conducted as a national application.	International good practice
12		Limited exceptions to categories of properties	There should be a national schedule of property tax exceptions.	International good practice
13		Applications for rates relief is received timeously	Applications for full or partial property tax waivers should be processed within a specified time period from date of the application.	International good practice
14		Applications for property tax waivers are conducted on-line	National IT connectivity must be expanded as an important component of service delivery.	International good practice
15		Relief to vulnerable households	All applicants for discretionary rates relief are considered in terms of their personal income assessments. All property owners ought to be included as income taxpayers.	International good practice
16	23(3)	Part B of the municipal register of properties	Oversight for the preparation nor publication of Part B reports should be implemented.	Monitoring framework, MPRA Section 80(3)
17	15(2)(a-f)	Categories of owners of properties	Monitoring of the categories of owners of properties should be established. Section 15(2)(a-f) is a closed list.	Monitoring framework, MPRA Section 80(3)
18	15(2)(a-f)	Categories of owners of properties	Municipalities should align the categories of owner applicants with the households included on the municipal indigent registers.	mSCOA chart for indigent registers

19	15(2)(f)	Bona fide farmer	The definition for 'bona fide farmer' should be established. Alternatively, this category of owner of property should be deleted from the MPRA.	MPRA amendment
20	15(2)(d)	Immediate rates relief to categories of owners affected by the civil unrest, or the serious adverse social and economic conditions	This provision should be clarified - whether S15(2)(d) invokes immediate rates rebate <u>or</u> whether affected and distressed property owners should await the preparation of a supplementary valuations, S78(1)(d).	Circular

D. Legislative findings MPRA, Part B of the municipal register of properties

Ref #	MPRA ref	Description of the findings	Proposed reform	Reform mechanism
1	23(5)	Part B reports	Improved monitoring to confirm that rates relief is not extended in an ad hoc manner.	Monitoring framework, MPRA Section 80(3)
2	23(5)	Part B reports	Alignment of the income foregone totals in Part B with the submissions for the equitable share, Division of Revenue Act.	mSCOA reporting, MFMA

.E. Findings with respect to the input data used in the municipal registers

Ref #	Legislative reference	Description of the findings	Proposed reform	Reform mechanism
1		Deeds Registry and the Office of the Surveyor General	Requirement for a common geospatial system to be used by both agencies.	Global best practice
2		Sales data sources	The sales data used for sales analysis for the purposes of property rates is expanded to include listed sales.	Global practice

3		Poor compliance of the MPRA's single market value tax base especially by B3 and B4 municipalities	Conduct cost benefit analysis of single tax base versus multiple tax bases or use of a mass appraisal technique based on predetermined bands of property values.	Global practice
4		Informal or unregistered tenure reforms	Establishment of appropriate identification for informal or unregistered rights – continuum of land rights to be recognised through records or certificates of occupation.	Global practice
5	SDI Act	Cadastral data naming protocols	Extension of the Surveyor General's 21-digit code to 32-digits to enable unique spatial recognition for each property parcel.	Regulation through the SDI Act
6	SDI Act	Interoperability of municipal registers in other spheres of government	National adoption of the expanded 32-digit SG key.	Regulation through the SDI Act
7	MPRA, 23	Standard for the assembly and maintenance of the municipal register of properties	Formal endorsement of the SAGI Practitioners Guide for the assembly and maintenance of municipal property registers.	Regulation through the SDI Act
8	SDI Act	Essential base datasets and the custodianship thereof	Formal recognition of municipal registers as essential base datasets. Nomination of municipalities as base data custodians for the municipal registers of properties.	Regulation through the SDI Act
9	MPRA 23(1)	Specifications for the assembly and maintenance of the municipal register of properties	Base data custodians (municipalities) are trained to implement the required specifications for the assembly and maintenance of the municipal property registers.	SAGI Practitioners Guide for the assembly and maintenance of municipal property registers.
10	SDI Act, Section 6(1)(b).	Monitoring and oversight	Monitoring of the municipal register of properties through adherence to the data standards required for base data custodians.	Regulation through the SDI Act

11		GIS products	Investigate the feasibility of alternate, more cost-effective GIS products and software.	
F. Legislative findings: MFMA mSCOA findings as these relate to the municipal register of properties				
Ref #	Legislative reference	Description	Proposed reform	Reform mechanism
1	MFMA, mSCOA reference to Section 23	Municipal register of properties	The reference should be explicitly to Section 23, MPRA. Currently only refers to Section 23.	MFMA Regulation
6	MPRA Section 8 (2), 8(3) and 4(a)	Chart classifications and the prescribed categories of property.	Chart classifications and the prescribed categories of property to be aligned.	MFMA budget circular for mSCOA v6.7 to be finalised
4		Common data field to link financial and valuation systems	Prescription for the of the expanded 32-digit SG key as a common key and locational reference for all properties in the municipal register of properties.	SDI Act regulation
7		Data cleaning	The geospatial property register is used as a monitoring instrument to monitor data cleansing.	MFMA monitoring
8		Use of technological solutions for updating property attributes	Introduction of smart mapping or automated change detection.	Global best practice
9		Ratepayer contributions to updating property attributes	Interactive municipal websites provide the facility for property owners to update their own property attributes.	Global best practice
10		Revenue collection systems	Revenue collection systems to include a locational linkage through integration with the geospatial property register.	Global best practice

Source: Author's own compilation.

National Treasury took the initiative to introduce robust regulatory reforms towards uniformity in municipal financial reporting. The following section addresses how National Treasury's mSCOA Regulations not only changed municipal financial systems but transformed municipal organisations. These findings focus on how the municipal registers of properties may further support municipal financial reporting.

7.4 FINDINGS - MFMA, MSCOA

Despite certain milestones being deferred and extensions granted, the mSCOA reforms have been implemented. The National Treasury reform agenda includes regulations and various circulars providing guidance to municipalities. Both the challenges and need for improvement in certain areas are acknowledged. However, as the maturity of the chart of accounts and the response by municipalities and their supporting vendors improves, so compliance with the mSCOA Regulations escalates.

7.4.1 Geospatial municipal register of properties

The purpose of mSCOA is to standardise financial reporting by local government¹¹⁴. Two key findings are identified with respect to mSCOA and the municipal register of properties. The first is that the municipal register of properties referenced as Section 23 in the mSCOA chart must be explicitly 'geospatial' in format. If the municipal register of properties remains in a tabular format, the prescribed regional segment reporting may not be entirely successful. Presently regional segment reporting requires that revenue and expense transactions are reported at ward level. The ultimate objective of National Treasury is for this detail and granularity to be extended down to erf or individual property parcel level.

The second finding is the proposed shift whereby the mSCOA Regulations acknowledge the municipal register of properties as the essential property data hub in a municipality. This finding requires the rectification that the VRMS integrates with the property register - not vice versa as the mSCOA Regulations are presently drafted. The present functional hierarchy is, in my opinion, inherently flawed and requires addressing through policy clarification. mSCOA's mantra of one version of the truth is optimally implemented through the geospatial property register being the data hub for all property related data in the municipality. The finding elevates the profile of the municipal register of properties to the integrated property database, with one of its functions being the VRMS. The proposed modification to the organisational arrangement is that the VRMS, Deeds Registry, the Surveyor Generals Office, the financial system, Town Planning, the Building Inspectorate and the municipal asset register all integrate with the property register. Figure 5.2 provides a schematic of the proposed organisational structure showing the municipal register of properties as the central data hub for all property-related departments of business units in the municipality. Additionally, the property register should be the conduit through which the municipality may interface with external organisations, namely the Deeds Registry and the Surveyor General's Office.

The advantages of assembling and maintaining the property register in the municipality is that all officials have access to view the same spatial dataset themed to their specific area of competency. From a systems security perspective, only the municipal valuers would have the authorisation to amend the values and categories of property in Part A of the property register. Expanded access to the municipal register of properties would enable customised views to be implemented for the data

¹¹⁴ Refer to Section 4.3.1.

views required by each department. GIS functionality enables the views of the different data layers to be clicked on and off depending on the required view. The following examples provide insight into these benefits. Officials in the water department would use the property register to view water consumption and meter readings for a specific area. The Chief Financial Officer may wish to query where the debtors with arrears over 120 days reside. Credit Control may wish to verify a property owner's address for the purposes of processing an application for indigency. The applications for both financial and non-financial data to be viewed spatially from the property register are infinite. The caveat for this functionality is that the data must have a common locational reference, the 32-digit SG code.

From an institutional perspective – enabling Town Planning, the Building Inspectorate and Valuations Departments to all have access to the same geospatial database would improve communication between these respective business units. Instructions to the municipal valuer to prepare a supplementary valuation would be more efficient and less revenue foregone due to time delays between the change in a property's attributes and the instruction to the valuer to prepare a supplementary valuation. The effectiveness of this proposed reform is illustrated as follows - the Building Inspector uploads the building completion or occupation certificate for a specific property record. The valuer receives this notification indicating the increased market value since the last general valuation¹¹⁵ and the need for a supplementary valuation to be prepared. The workflow for updating Part A of the property register would be enhanced and municipal revenues from property rating improved.

The municipal register of properties should be the single version of the truth for all property related data in the municipality. Any changes in the municipal register of properties will alert the respective municipal business units (Finance, Valuations, Asset Management, Town planning etc) to the changed attributes of a property and prompt the required workflow processes to address these changes. In conclusion, the assembly and maintenance of a spatial municipal register of properties would add value to functionaries with any spatial data or any mapping component. First and foremost, this applies to the Valuations Department, but meter reading, billing, credit control, revenue management, asset management and building control functions would also benefit.

To meet the developmental objectives of the MPRA, municipalities should nurture investment conducive environments. The availability and efficacy of municipal infrastructure, timeframes of how quickly planning approvals may be processed, the cost implications and the estimated return on investment are all development considerations. The relevant departments or business units in municipalities including Town Planning, the Building Inspectorate, Finance, Valuations and often Legal Departments should co-ordinate information from their respective business processes towards updating their property registers. This would ultimately support local economic development. These

¹¹⁵ MPRA, Section 78(1)(d) – provides that a supplementary valuation should be prepared where a property value has increased or decreased since the last general valuation. The issuance of a Building Completion Certificate provides evidence of value enhancement.

perspectives over and above the requirements for property rating underscore the need for the municipal register of properties to be the single property data hub in all municipalities.

7.4.2 Data cleansing

The problem statement for the drafting and promulgation of National Treasury's mSCOA reforms was the inconsistent and inaccurate data and reporting submitted by municipalities to National Treasury. In many cases the IT infrastructure of the municipality was obsolete, and the data unreliable. Data cleansing is one of the nine workstreams identified in mSCOA. Data cleansing requires resources. As this workstream requires resources it is frequently overlooked due to its budget requirements. The inevitable consequences impact on the success of the municipal reporting.

Through the introduction of smart mapping, specifically the overlay of time-referenced data layers, the progress of data cleansing projects may be monitored. This finding prompts the recommendation that National Treasury considers deploying the municipal registers of properties to support their monitoring initiatives. The Netherlands case study¹¹⁶ provides evidence of various technological solutions, including automated change detection or smart mapping, which are used to identify changes to property attributes, prompting value changes and impacting on municipal revenues.

7.4.3 Revenue collection systems using spatial data

There are an increasing number of case studies endorsing the use of spatial data to support municipal revenue collection. McCluskey and Huang (2019: 6) provide useful experiences from Africa about how spatially based systems are supporting the entire revenue collection chain and assisting cities to migrate from inefficient paper-based to modern platforms. The Municipal Revenue Collection Information System (LGRICIS) implemented in Arusha, Tanzania, shows a clear correlation between the use of the system and improved revenue collection. This applies not only to the financial data but includes integrated spatial data across other related departments including human settlements, local economic development, town planning and the valuation roll.

This finding indicates that the effectiveness of revenue collection or financial systems is enhanced when these are integrated with geospatial databases. National Treasury's system reforms include the proviso that any sub-system used in the municipal IT system must integrate seamlessly with the financial system. National Treasury¹¹⁷ has not yet reviewed all the systems integration. This is an outstanding monitoring aspect that, in my opinion, needs expediting.

The next section addresses findings from an institutional perspective that may improve the accuracy and completeness of the geospatial registers of properties for property rating, the success of financial reporting and support of the extended role of the municipal registers of properties in national land administration and governance.

¹¹⁶ Refer to Section 6.4.

¹¹⁷ Refer to Sections 4.5.1 5.5.

7.5 FINDINGS - INSTITUTIONAL ARRANGEMENTS

This analysis of the status of municipal registers of properties in South Africa identifies the roles of three main government stakeholders. These are CoGTA, National Treasury and the Department of Spatial Data Infrastructure, or SASDI¹¹⁸. The findings identify an imperfect and fragmented engagement between these primary stakeholders, mainly between CoGTA and National Treasury, with SASDI not even entering the dialogue. The MPRA's monitoring and oversight provisions are outlined in Sections 81 and 82, the prescribed financial reporting requirements are detailed in the MFMA mSCOA Regulations, and the annual municipal financial audit requirements are overseen by the Auditor General¹¹⁹. None of legislative frameworks provide for monitoring the municipal registers of properties, either Part A (the current or current valuation roll) or the annual Part B reports. Despite SASDI being responsible for all geospatial data in South Africa, this department is not mentioned in either of the statutes above, nor does the SDI Act refer to municipal registers of properties.

The findings from this thesis highlight the requirement for improved dialogue between the stakeholders as key to improving the standard of the municipal registers of property across their various applications. The recommendation for establishing a common understanding of the municipal register of properties as key base datasets is paramount. The SDI, CoGTA and National Treasury all have a vested interest in accessing accurate spatial data for achieving their respective mandates. This thesis identifies the SDI's legal obligation to initiate and lead the inter-ministerial conversations.

The advantages of mature national digital systems are identified in the Netherlands case study¹²⁰. This country's focus on digitisation and technological innovation is driven by a dedicated ministry in the Ministry of the Interior and Kingdom Relations. Reliable and safe data exchange is enabled through the national data infrastructure. In contrast, South Africa's poor connectivity and inadequate ITC infrastructure are major stumbling blocks to identified reforms. In the Netherlands, the Kadastre, the national Land Registry and Mapping Agency, have established development partnerships with the Land Registry, the Rijkswaterstaat (Directorate of Public Works and Water Management) and GeoNovum. These development partners undertake responsibility for the alignment and data consistency required to give effect to a single version of all accessible data.

The proposed role for SASDI, as the custodian of all spatial data in South Africa, is modelled on the good practice identified in the Netherlands case study. The findings outline the proposal for the nomination of municipalities as the data custodians for the assembly and maintenance of the municipal property registers. Other associated data custodians include the Registry of Deeds and the Surveyor General's Office, as well as other stakeholders to be development partners. In the Netherlands Geonovum¹²¹ is assigned the function to ensure the alignment and data consistency.

¹¹⁸ Refer to Section 4.2.

¹¹⁹ Refer to Chapter 5.

¹²⁰ Refer to Chapter 6.

¹²¹ Refer to Section 6.3.1.

Geonovum is a government foundation whose primary function is to enable government to function more efficiently through the provision of geo-information. Geonovum's primary responsibility is to set and manage the Dutch geo-standards. A similar institutional arrangement including clear definitions of stakeholder roles and responsibilities would promote the objective of interoperable property data in South Africa.

The escalating awareness of the value of using GIS, especially in the public sector, has been given impetus through the establishment of the National Spatial Information Framework. This full directorate is responsible for the development of the national land information management system. This directorate's main purpose is to promote the sharing of geospatial information and where possible, avoid the duplication of spatial data capture by the public sector. The SDI committee may identify and appoint data custodians for fundamental datasets. This committee is also responsible for the development of standards and policies to ensure the quality of the data. Section 11(1) of the SDI Act states that the Minister may determine standards and prescriptions to facilitate the sharing and integration of spatial information and section 11 (3) requires data custodians and data vendors to adhere to the standards and prescriptions referred to in this section. The Netherlands' Geonovum extended the ISO 19152:2012 Land Administration Model (LADM) as the property measurement and geographical standards for immovable property. All national data property databases are managed according to the LADM. Municipalities in the Netherlands are required to verify their property data accuracy before uploading it into valuation models. This thesis's findings include the requirement for the SDI to develop appropriate standards for spatial data management and to enforce these for the assembly and maintenance of the municipal registers of properties.

A further key finding includes the allocation of unique identifiers for each property parcel. Legislatively there are provisions for any spatial data custodian or a data vendor to adhere to standards prescribed by the SDI Act. There is also an obligation on data users and data vendors to report data deficiencies to the relevant data custodian. It is recommended that the geospatial property register is both assembled and maintained as an internal municipal function rather than being outsourced to a third party. The MFMA's mSCOA mantra of 'one version of the truth' holds good for spatial data as well. A single property data hub should be established in each municipality or even a group of municipalities as a shared resource. Irrespective of which party assembles and maintains the data, it is essential that these practitioners adhere to minimum standards.

This thesis identifies the option of expanding the application of the property register for use in CoGTA's District Development Models. The objective of the District Development Models is to improve conceptual clarity, change management and migration towards a single overall planning approach for South Africa.

7.5.1 Extended role of the municipal registers of properties

CoGTA's objective is for the District Development Models to achieve a single integrated plan for meaningful spatially integrated development through across district municipalities¹²². The municipal property register provides an accurate spatial database for each municipality. The District Development Model framework aims to improve performance and coherent delivery, transforming district economies and improving the quality of lives. The finding proposes linking the District Development Models to the municipal registers of properties. The MPRA's municipal property registers, conditional upon these being prescribed as geospatial registers, provide a spatial database for each municipality. These geospatial property registers may be aggregated into a joint planning process and assembled into a single provincial dataset, OnePlan¹²³.

The next section addresses findings relevant for often-duplicated municipal reporting requirements to provincial and national government departments.

7.5.2 Municipal reporting and data interoperability

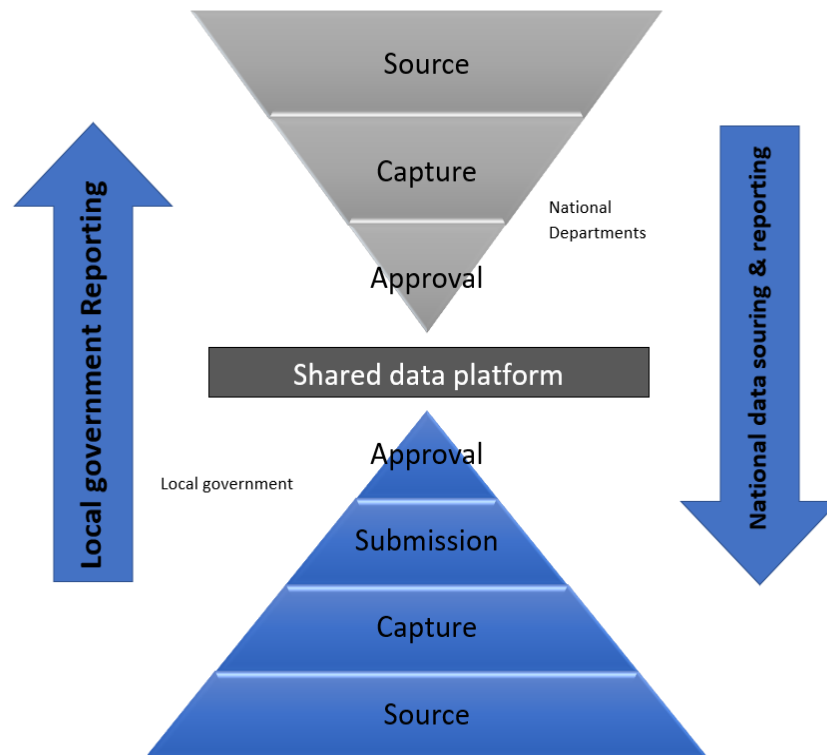
Municipalities express frustration over the multiplicity of reports measuring their various programmes and the impacts thereof. On the other hand, provincial and national government officials criticise the perceived poor responsiveness by municipalities. At municipal level, sector coverage includes the following: Environment and Waste Management, Economic Development, Water and Sanitation, Housing, Governance, Energy and Electricity, Roads and Transport and Fire and Disaster.

Mike Leslie (2022) National Department, Monitoring and Evaluation, referred to these various reporting requirements as the "spaghetti criss-cross crash course". The Government Reporting Reforms Project is a collaborative effort between CoGTA, National Treasury and Monitoring and Evaluation to establish a singular, differentially applied set of indicators for all local government. The project involves data capture and reporting across the different spheres of government from source through to submission and approval. The indicators work from municipal level upwards and then from the national level downwards to culminate in a shared data platform in the centre. Figure 7.2 illustrates the proposed reform through a shared data platform. The prerequisite for the success of the proposed data portal is that it contains interoperable data. The recommended approach is that a national property database is assembled using the data contained in OnePlan as the data transfer vehicle.

¹²² A district municipality is defined as an area including more than a single municipality; see Chapter 1 for details of the municipal classifications.

¹²³ Refer to Section 5.6.

Figure 7.1: Data capture and reporting across different government spheres

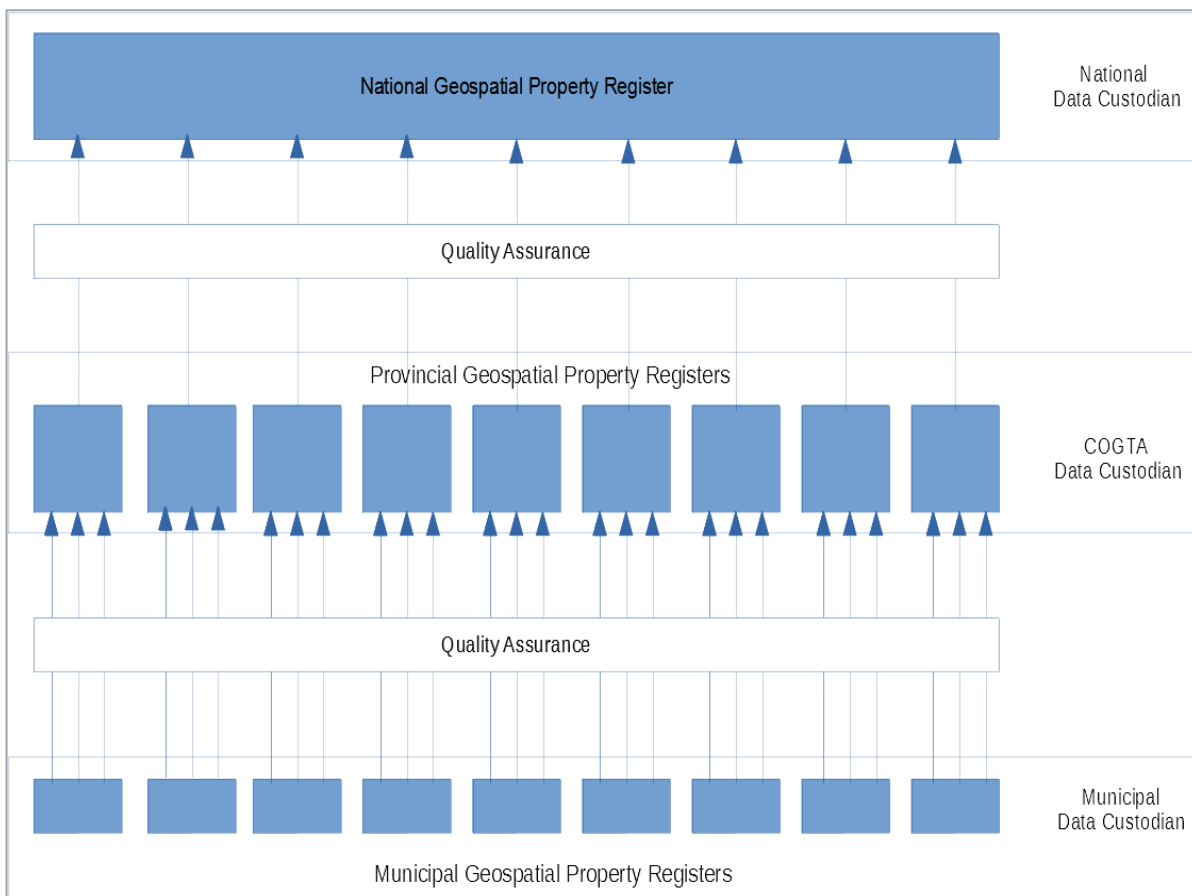


Source: Adapted from National Treasury, CIGFARO budgeting workshop, November (2022).

This thesis identifies that data is currently not interoperable and that data flows across government agencies are improperly integrated. The objective of moving South Africa towards an open data system enabling both the public and private sectors to use and exchange data efficiently could be managed through the proposed recommendation for aggregating municipal data into OnePlan and then upwards to a national level. The model for managing key base datasets in the Netherlands provides a constructive reform strategy towards integrating geo-information into the overall information architecture towards e-governance.

While this thesis proposes the appointment of municipalities as custodians of the municipal registers of properties, consideration is required as to the responsibility for data checking. It is proposed that quality checks are conducted at a provincial level prior to consolidating the geospatial property registers from each municipality or group of municipalities within a district. The aggregated datasets could be elevated to SASDI as the national data custodian of all spatial data. Figure 7.3 illustrates the proposed data flows from municipal registers of properties through iterative quality assurance processes to provincial geospatial databases, to culminate in a national geospatial property register. Accurate and maintained municipal registers of properties could be aggregated to improve the accuracy of the national development plans, specifically the National Development Plan 2030.

Figure 7.2: The consolidation of municipal geospatial property registers into a national spatial data repository



Source: (James & Channing, 2020).

Both CoGTA's District Development Model and National Treasury's mSCOA reporting requirements include a spatial component. The geospatial municipal registers of properties would contribute to both initiatives through providing spatial data for both planning and municipal transactional reporting. The application of smart mapping techniques through overlaying current use datasets on top of the planning data layers would provide immediate visual identification of any development gaps or possible overlapping projects. A key finding is that improved decision-making and participation is achieved if all parties access the same data, whether this be for a specific project or ongoing sectoral analysis. Financial officials may be comfortable navigating a set of financials or a spreadsheet, but this is not a general municipal skills set. Placing all of the data (financial and non-financial) onto a spatial platform enables all stakeholders to engage around a common set of data and to make decisions informed through this platform. At an institutional level, local municipalities within a district municipality may collaborate through a shared data hub containing the property data for all of the respective areas. It is essential that such a data hub is resourced with a competent GIS team who manage the data according to the required standards.

The aggregation of geospatial registers, spatial data and related databases and the dissemination of this data to the relevant stakeholders is a model to which SASDI should aspire. The concept of using aggregated local property data to contribute to a national land and property register is

accommodated in the Land Administration Domain Model concept¹²⁴. This model provides opportunities at both a national and municipal level for an integrated cadastral or property information management model based on international standards to be developed (Kara *et al*, 2018). While Tija (2014) notes that the LADM could be applied to land information in South Africa, land administration researchers Hull *et al* (2020) caution that this model requires modification to meet contextual requirements of South Africa's land administration.

Against the background of the proposed reforms the necessity for complete and accurate municipal property registers must be addressed. The next section considers options for the effective monitoring and oversight of the municipal registers of properties. Much is written about the National Treasury standards that promote uniform municipal financial reporting through a standard chart of accounts, mSCOA. The identified reform recommendations address the MPRA standards, the legislative statute that provides for the property register, as well as the proposed standards required for the geospatial data monitored by SASDI. The proposed reforms include the development and adoption of minimum benchmarks or standards to motivate practitioners, including valuers, financial officials and GIS practitioners, to attain a minimum standard towards delivering uniform geospatial property registers to all municipalities in South Africa. Chapter 5's investigation of the existing monitoring and oversight provisions identified these as inadequate, especially from the perspective of the municipal registers of properties. This section will also expand on recommendations for the establishment of an independent agency with the requisite leverage to fulfil the necessary oversight function.

Table 7.2 provides a description of the various institutional findings with the proposed reform described in the right-hand column.

Table 7.2: Schedule of institutional findings

Ref #	Item description	Proposed reform
1	Institutional realignment – CoGTA and National Treasury departments	The mSCOA chart should be aligned to the prescribed categories – as provided in the MPRA. The mSCOA chart is amended to align with the MPRA, Section 8 in respect of the prescribed categories of properties, provisions for additional categories and subcategories. Also referenced under Legislative findings.
2(a)	Municipal organisation	Thesis the business processes and ensure that the respective departments (Valuations, Finance, Town Planning, Building Inspectorate, Legal) adopt an integrated approach using the municipal register of properties as the property data hub in the municipality. Municipalities must undertake the function to assemble and maintain the geospatial municipal register of properties as a key municipal function.

¹²⁴ See Section 6.5 for the description of how the LADM is used in the Netherlands.

(b)	Institutional realignment – SASDI	SASDI's role is clarified as the agency responsible for all spatial data infrastructure as well as the establishment and maintenance of a central spatial data repository. Clear institutional relationships relating to the custodianship of the various base datasets are identified and prescribed.
(c)	Appointment of data custodians	Municipalities are appointed as base data custodians for the municipal register of properties, SDI 11(3). The municipalities' data custodian/data vendor must adhere to the standards and prescriptions.
(d)	Development partners	Development partners are identified and assigned responsibility for ensuring geospatial data alignment and consistency.
3	Agency responsible for managing geo-information is established	An independent government foundation is established with the responsibility for setting and managing all geo-information. Data standards are drafted and adopted for implementation. SAGI's Practitioners Guide for the assembly and maintenance of property registers (James, 2020) is adopted as the initial standard for the property registers in consultation with relevant stakeholders.
4	Municipal organisational clarity	The property register housing all property related data is established as the hub for all property related data in municipalities. The data in the property register integrates with the VRMS (valuation data) and the financial system (financial data) as well as other related agencies and municipal departments using the 32-digit expanded SG key as the common data string.

Source: Author's own compilation.

7.6 FINDINGS - MONITORING

Performance and compliance with minimum standards are critical instruments for monitoring performance within any context. This thesis identifies the requirement for appropriate standards from the perspective of the MPRA used for property rates, for geospatial data in terms of applying naming standards to achieve data interoperability, and to achieve successful municipal financial reporting through a standard chart of accounts, mSCOA. This section also addresses options for implementing such standards through an appropriate monitoring agency.

7.6.1 Standards

Various stakeholders identified the necessity for developing MPRA standards or for developing performance benchmarking for valuers preparing and maintaining valuation rolls. The SACVP endorsed a set of MPRA standards¹²⁵. This thesis's finding is that the MPRA standards should include reference to the relevant standards developed under the legislative mandate of SASDI as provided in the SDI Act. By necessity the MPRA standards should therefore exclude content

¹²⁵ See Section 5.5.8 for the details of the development of the MPRA standards.

regarding the assembly or maintenance of the municipal registers of properties. These may potentially contravene or cause stakeholder confusion regarding the relevant set of standards municipal registers of properties should adhere to.

Concerns with respect to accuracy of the data, the potential for data vandalism or the modification of data to suit a possible political agenda, as well as how data is authorised and integrated when the original source is unknown prompts the necessity for data standards. The initial step is covered in the previous section's recommendation for the appointment of data custodians who would subscribe to the gazetted metadata standards.

Coetzee and Cooper Coetzee (2007), in their article entitled 'Spatial standards make your life easier', state that standards are often frowned upon. However, the authors concede that these are a valuable tool to assist us in our daily work. The reality is the increasing volumes of geographic information and no real plan about how to manage these responsibly. In terms of Section 3(1)(c) of the Land Survey Act, the Chief Director - Land Survey is required to file and preserve all records. In the 30 years since this act was promulgated technology has moved mapping firmly into the digital space with the accompanying voluminous quantities of data. To date the SDI Act has three standards for metadata, land cover classification and unique identifiers, albeit with limitations. There are no mapping standards.

SASDI is criticised for not facilitating fundamental stakeholder relationships, and in particular, for excluding municipalities from the Committee for Spatial Information. According to Siebritz *et al* (2022), municipal representation on the Committee for Spatial Information has been insufficient. SASDI is found to have extended inadequate support to local government's management of geospatial information. To illustrate this, Siebritz *et al* (2022) explain how the South African national mapping agency captures data themes required by municipalities at an unsuitable scale (Siebritz *et al*, 2022). Unless SASDI provides the coordination mechanisms to inform the mapping agency of these requirements, it is likely that the mapping agency will continue to supply unsuitable data and municipalities will continue to struggle without the required support. Siebritz *et al* (2022) recommend a bottom-up influence to improve access to geospatial information and the consequential improvement to service delivery by municipalities. This is supported by Mey *et al* (2020) who conclude that, although spatial data is available in South Africa, it is, in most cases, poorly captured, co-ordinated, collated, maintained and presented. The criticism levelled against SASDI, and the SDI Act is that the legislative framework is not explicit in defining the criteria for geospatial datasets, nor who the data custodians should be (Hlela *et al*, 2016). The findings from this thesis recommend that municipalities be nominated as data custodians¹²⁶ for the municipal registers of properties. This finding is discussed in Section 7.3.5 and reinforced again as a specific monitoring finding.

Informed by international best practice and towards articulating the proposed role for the geospatial property registers, there must be a strategic interest for making property data accessible

to a broad group of users, ultimately to the public. Accessibility considers the ease with which a resource may be accessed. Public accessibility of databases must take confidentiality and privacy issues into account in compliance with South Africa's POPIA¹²⁷ requirements. The Land Portal's State of Land Information in South Africa Report (Land Portal, 2020) emphasises the importance of standards for data accessibility yet notes that what constitutes a standard is mostly subjective. To ensure that no perspective is lost there should also be standards about the metadata, or the 'data about the data'. This includes explanations of what the data or information is about, the source of the data, as well as other important characteristics about the datasets. This is important, not so much for the users, but for the agency responsible for cataloguing and enabling search engine optimisation to enable users to access these datasets.

According to the United Nations Committee of Experts on Global Geospatial Information Management, the transition toward accessing free government-owned geospatial information is expected to develop in future (UN-GGIM, 2015). There is a responsibility towards balancing the access-to-information against the nature of the information, the relationship between the government and the party that provided it, and broader public interest.

As with all standards, these are likely to remain merely instructions without an appropriate monitoring agency with the accompanying mandate to enforce these standards.

7.6.2 Monitoring agency

The comparative study between the Netherlands and South Africa in Chapter 6 analysed the monitoring model adopted by the Netherlands, stressing the importance for an independent monitoring agency. It is acknowledged that the Netherlands has a mature valuation and rating environment. The monitoring function in the Netherlands vests with the Netherlands Council for Real Estate Assessment. This is an independent agency responsible for both setting the standards and developing guidelines about how property assessments should be conducted. All assessments are reviewed by the oversight body before the WOZ (recurrent property taxation) values are released to the public. The Netherlands Council for Real Estate Assessment has defined quality requirements for evaluating the outcomes (Kuijper & Kaathman, 2015). These quality requirements relate not only to the quality of the value assessments, but also to the processes towards these outputs. Municipalities are required to conduct their own internal review prior to submitting their prepared valuations to the independent council for adjudication. Sanctions may be applied to the municipalities if their data fails the prescribed requirements.

Global best practice shows that monitoring functions are best performed by independent agencies. Such an entity should also have the commensurate influence to compel compliance. In South African local governance structures, the Auditor General¹²⁸ stands out as an institution that commands such influence. This institution is responsible for auditing and reporting on how the

¹²⁷ See Section 4.4.

¹²⁸ See Section 5.5.5 for the review of the Auditor General's legislative mandate.

government is spending taxpayers' money. The Auditor General produces financial audit reports on all government departments, public entities, municipalities and public institutions on an annual basis. Audit outcomes are linked to key performance indicators for executive officials in local government - a compelling incentive for compliance.

This thesis identifies two guiding principles for the establishment of an appropriate monitoring agency. Firstly, that such an agency should be an independent entity and, secondly that such an organisation should have the necessary legislative backing to command compliance.

The Office of the Valuer General (OVG)¹²⁹ may be a possible agency to accept this oversight function. The Netherlands Council for Real Estate Assessment is staffed by professional valuers responsible for oversight of the valuations. The South African OVG has a similar resource complement. The OVG's current mandate is to prepare valuations for the purposes of land reform, or the compulsory acquisition of land for public interest. The OVG is an independent entity whose objective is to conduct its work impartially with a high level of professionalism. An option includes investigating the feasibility for the OVG to extend services to test the statistical accuracy of municipal valuation rolls. This delegation may fulfil the discretionary ministerial monitoring mandate outlined in Section 82 of the MPRA. From the perspective of the OVG's Chief Operating Officer, Thapelo Motsoeneng, the feasibility of monitoring valuation roll accuracy is an opportunity to be investigated by the OVG under their future strategic vision (Personal communication, 2022). The use of such a proposed oversight function by the OVG would be dependent upon the development and adoption of appropriate standards, not only for the coverage, but also for valuation accuracy. This study is not conclusive and further research into the options for an appropriate monitoring agency are required.

Chapter 4 investigates the impact of inadequate municipal resource capacity indicating that weak municipal administration contributes to poor revenue performance. In this thesis, resource capacity constraints are a recurrent finding. These include the competencies of GIS practitioners assigned to assemble and maintain the geospatial property registers, of professional valuers delegated to prepare the municipal valuation rolls, and of financial officials responsible for the budgeting and the financial management of local government. This finding is supported by the prevalent practice amongst municipalities to procure the assembly and maintenance of the municipal registers of properties and preparation and updating of their valuation rolls from professionals in the private sector. The current municipal practice of using consultants is frequently criticised. The promotion of improved GIS and valuer capacity in municipalities is a reform recommendation to address this finding. This together with the option of securing municipal partnerships and utilising the District Development Model¹³⁰ provide strategic options with the advantages of scale and the benefits of project management. The next section addresses the findings that may contribute to alleviating the dependency of South African municipalities on external consultants. This section addresses the thesis's findings for improving valuation, GIS and project management competencies and

¹²⁹ See Section 5.5.7 for the review of the Office of the Valuer General.

¹³⁰ See Section 5.6 for the review of the District Development Model.

qualifications in municipalities to support the assembly and maintenance of the municipal registers of properties.

7.6.3 Municipal capacity building

Slack (2023) identifies administrative capacity as a major hurdle to delivering an effective and efficient property tax system. There are various reasons cited for the current imperfect situation in South Africa. These include cadre deployment¹³¹, a lack of political will, and inadequate consequence management that contributes to unauthorised, fruitless and wasteful expenditure by municipalities. At a strategic level, there is specific government policy to build a capable, professional and ethical public service. These objectives are captured in the South African Government's Professionalisation Framework that applies to national, provincial and local government. A directive issued by the Department of Public Service and Administration aims to reshape a professional and efficient public service to meet the needs and expectations of South Africans (Directive on Human Resources Management and Development for Public Service Professionalisation, 2024).

Professional valuers are considered a profession with a scarce skill in local government. A scarce skill is defined as an occupation where there is a scarcity of qualified and experienced people (LGSETA, 2016). Despite the valuer's responsibility to prepare the valuation rolls that contribute significantly to the municipal revenues, there is limited emphasis on developing valuer capacity in local government. The MPRA's Section 39(1)(a) prescribes that a municipal valuer must be a person registered as professional or an associated professional valuer in terms of the Property Valuers Profession Act, 47 of 2000 under the Council for the Built Environment. As the preparation of the general valuation roll informs the rates revenue for a lengthy period, municipalities consider the quantum of experience as a valid consideration for the appointment of their municipal valuers. The procurement requirements for municipal valuers require professional valuers to provide their curriculum vitae, as well as evidence of a valid registration with the statutory Council for the Property Valuers Profession for a period of more than ten years. Evidence of designations as the municipal valuer and references from the respective municipalities where compliant valuation rolls were prepared are required as supporting documentation. These procurement criteria are considered onerous and are perceived to preclude the participation of emerging contractors.

With the aim of building administrative capacity to support the valuer's function and the use of the MPRA in municipalities, the LGSETA developed a qualification for a Municipal Property Assessor, South African Qualifications Authority, ("SAQA") 99700. The occupational qualification is described in the national qualification framework as a higher occupational certificate, an NQF Level 5. Such a learner would typically be employed in municipalities and involved in municipal valuations and rating. The SACPVP, as the statutory council for the valuer profession, has established a registration

¹³¹ Cadre deployment is a term used to describe the appointment by government of a party-political loyalist to an institution or body.

category specifically for the Municipal Property Assessor. The Municipal Property Assessor enables municipal officials to use this entry level qualification as a stepping stone to advance further valuer qualifications. While a recent occupational registration, available from 2020, it is anticipated that the inception of this qualification will improve the necessary competencies required for efficient property rates in municipalities.

GIS practitioners are also considered to be a scarce skill. Given the importance of the assembly and maintenance of the geospatial property register as a platform for the valuation roll, as well as for the prescribed mSCOA reporting, the acquisition of improved GIS skills by municipalities is necessary. This thesis has consistently found in favour of the assembly and maintenance of the municipal register of properties being a separate project to preparing and maintaining the valuation roll. Ideally this function should be retained internally by the municipality. Where the municipality has no appropriate GIS skills, the finding is that the municipal register of properties project should be separately procured to the valuation services for the preparation of the valuation roll. The finalisation of the assembly of the municipal register of properties should precede the preparation of the general valuation roll. The rationale for this separation is that upon appointment, the municipal valuer may be handed the complete and accurate property register on which to platform the valuation roll. This delineation of roles and responsibilities prompts automatic internal controls and data checking to the municipality's advantage.

The other compelling finding is that the municipal register of properties, if current and complete, may be used to support successful reporting against the regional segment, as prescribed for National Treasury mSCOA Regulations. From a practical perspective - property is fixed, immovable and a static administrative point of reference. All utilities are referenced to a specific property or location. It is practical for this geospatial database to exist in the municipal environment when the use of this property data is pivotal to the municipal business processes. This finding promotes the development of improved GIS capacity in municipalities. While it is recognised that there is limited current capacity with the use of consultants as a necessary starting point, specific reference to and the evaluation of a structured skills transfer programme as part of the procurement process is recommended.

The third skills set required for preparing compliant and accurate property registers and valuation rolls, especially in the larger municipalities, is project management. Managing projects with over 100,000 property parcels requires meticulous resourcing and strong data management skills. This thesis recognises that smaller less capacitated municipalities are also required to comply with the same legislative framework, the MPRA. While the data quantum may not be as extensive in smaller municipalities as with their metropolitan counterparts, the technical nature of implementing the legislation requires oversight for full compliance. Municipal partnership arrangements create opportunities for municipalities to collectively procure the services of an experienced project manager and/or a professional valuer and/or GIS practitioner.

In summary, municipalities should address their capacity constraints through improved training opportunities and embracing the District Development Model, especially through investigating municipal partnership opportunities. The use of GIS supports the entire municipal organisation. An

earlier finding pertains to the reform whereby municipalities are nominated as the data custodians for the geospatial municipal property registers. If this reform is implemented, then the SASDI standards for geospatial data and the mandatory metadata applicable to these datasets will apply.

Table 7.3 provides a schedule of the findings as these pertain to the municipal registers of properties currently implemented in South Africa. Each finding is described with the accompanying reform proposal.

Table 7.3: Findings: Monitoring and reporting

A. Findings with respect of standards and monitoring agencies		
Ref #	Description	Proposed reform
1	There is no data checking mechanism when users query data accuracy.	The Netherlands notations' system mandates users to query data accuracy with the nominated data custodian.
2	Extension of the monitoring framework, Section 80(3), MPRA	A proposed monitoring template for alignment of categories of properties and financial tariffs in municipal rates policies, valuation rolls, tariff resolutions and financial systems is adopted. Also noted under Legislative findings.
3	MPRA Standards	The South African MPRA standards are useful but in the absence of an independent monitoring agency they may remain just useful. The MPRA Standards should be amended to exclude reference to the assembly and maintenance of the geospatial property registers. The municipal registers of properties should be assembled and maintained by the municipality themselves independently of the MPRA.
4	Formalisation of base data custodianship	That the SASDI formalises the nomination of municipalities as data custodians for the municipal registers of properties.
5	Support for municipal management of spatial data	Municipal representation on the Committee for Spatial Information is improved.
6	Standard for the assembly and maintenance of the municipal register of properties	SASDI is responsible for the development of standards for spatial data. The South African Geomatics Institute's Practitioners Guide is adopted as the initial standard for municipal registers of properties.
7	Data access	Reforms towards the establishment of a national portal accessible to users from the public and private sectors. Consideration of the access-to-information against the nature of the information.
8	Land Administration model options	Investigate the best fit for national land administration systems using the base data provided by the municipal registers of properties.

9	Investigation of an appropriate monitoring agency	Feasibility criteria to include: The monitoring agency should be an independent entity, and The monitoring agency should have the necessary legislative backing to command compliance.
10	Copyright	All property data collected for the preparation and updating of the valuation roll belongs to the municipality and should be handed to the municipality once collected, or at the very least at the end of the contract. Copyright to be included in the monitoring framework - MPRA Section 80(3).
B. Findings in respect of municipal reporting and planning		
Ref #	Description	Proposed reform
1	District development model	Municipal partnerships promote shared valuer resources with the attendant cost efficiencies specifically with respect to municipal valuers and GIS practitioners. Improved performance and coherent delivery, transformed district economies and improved quality of lives are achieved through the aggregation of municipal plans into OnePlan, a single provincial spatial dataset.
2	Improved national planning	Geospatial property registers are aggregated to inform OnePlan and cascaded upwards to contribute to National Development Plan 2030. Refer to Figure 21 -The consolidation of Municipal Geospatial Property Registers into a national repository.
3	Government Reporting Reforms project	Shared data platform and central data repository. Integrated national database.
4	Improved understanding of the role of the municipal registers of properties	Improved decision-making is achieved through viewing information through a spatial platform provided by the municipal register of properties.

Source: Author's own compilation.

The next section addresses the thesis findings from an operational perspective. These findings identify the importance of the submission of both draft and final market reports, the ownership of the property data, and how the municipality should protect its copyright to this data, the costs of remedial actions through objections and appeals, and a final note regarding the date of valuation and how this should be clarified to preserve the equitable recurrent property taxation.

7.7 FINDINGS - OPERATIONAL

7.7.1 Sales evidence, market reports and draft valuation rolls

The initial tasks towards the preparation of a valuation roll include thorough market research and investigation into the nature of the property market per property sector in the municipality. Sourcing recent open market transactions is the backbone of this analysis with the value modelling predicated upon this evidence. There are challenges for smaller B3 and B4 municipalities in respect of the quantity of sales evidence and the maturity of their property markets. According to Franzsen (2022), the MPRA provides for the use of alternate approaches to the single market value-based system¹³². Further investigation into alternate options including an adjusted area-based system along the lines of a point-based or self-assessment system may be more pragmatic and cost-effective approaches (Franzsen, 2022). Such approaches may address the challenges of inadequate sales evidence and provide a cost-effective alternative to municipalities with limited capacity and extensive traditionally owned property, such as Umhlabuyalingana Municipality¹³³.

In the Netherlands sales data as well as recent property transactions are used in the determination of values for recurrent property taxation. The property listings as well as the formal purchase prices provide a broader data segment towards informing market prices. The inclusion of sales listings could address informal or unregistered property transactions regarding property transactions for properties registered to traditional authorities.

Too often, constrained timeframes prompt municipalities to accept final valuation rolls for certification by the municipal valuers on the actual final submission date. Such circumstances preclude any planned time to review draft valuations in a draft valuation roll. Ideally the draft valuation roll should be submitted to the municipality prior to the statutory submission date, 31 January¹³⁴ (Republic of South Africa, 2006). Notably the submission of the draft valuation roll is a contractual deliverable, specified in the bid terms of reference and formalised through a service level agreement between the parties. Since 2022, both provincial and national CoGTA have requested copies of the draft valuations and the existing current valuation roll, Part A of the property register, for review within the months preceding the use of the new general valuation roll. The purpose of draft roll submission review is to ensure that municipalities are on track to submit their certified final general valuation rolls. Additionally, these analyses provide the CoGTA monitoring departments with the opportunity to identify any potential shifts in tax incidence. These are referred to as 'rates shocks' and are evidenced through the comparable analysis of the current valuation rolls (Part A of the municipal

¹³² See Section 4.2.1.1.

¹³³ See Section 4.6.2 for the discussion regarding Umhlabuyalingana Municipality's extensive traditionally owned land and the implications for property rating.

¹³⁴ Certified roll submission dates: The MPRA Regulations No 29304 issued in October 2006, state in Section 3(1) that the general valuation roll must be submitted 5 months prior to the effective date of the valuation roll and the commencement of the municipal financial year, 1st July.

registers of properties) against the newly assessed draft values. The intention of this oversight is to prompt necessary pre-emptive action in the municipality's annual budgetary preparations, mitigating the risks of overburdening ratepayers with excessive rates increases. The municipal draft budget must be tabled for council by no later than the end of March, for final adoption at the end of May and for implementation on 1 July. CoGTA provides specific guidance to municipalities implementing newly prepared general valuations to adopt a conservative approach, while allowing the revenue from property rates to escalate by an inflationary or other reasonable index. The application of straight-line tariff modelling based on the previous year's tariffs is specifically to be avoided¹³⁵.

Despite the submission of the draft rolls and the intended comparable analysis with Part A of the property register, municipalities themselves rarely return any meaningful commentary to the municipal valuer regarding the correctness or correlation between the draft assessed values and market values informed by recent property transactions in the municipality. As municipal officials are not trained valuers, they may not necessarily comprehend the changing market dynamics nor the creation of new neighbourhoods in their municipalities. Such details should be contained in the market reports prepared by the municipal valuer. The submission of draft market reports with the draft valuation rolls should guide a thorough evaluation of the draft roll submissions. This finding supports the submission of the relevant sales research and draft market reports with the submission of the draft rolls. Ideally these submissions should be accompanied by supportive engagements between the municipal valuer and municipal officials, so that the officials are familiarised with both the valuation methodologies and the resultant value assessments.

The preparation of market reports to support the determination of assessed values is part of the municipal valuer's contract. These are excluded from explicit provision in the MPRA. This thesis's finding is that market reports are delivered in various formats with varying content. A submission of a spreadsheet scheduling recent sales is considered inadequate as a market report. This finding leads to the recommendation for the valuation industry, facilitated by their statutory council, to collaborate towards standardising the market reports required to support the preparation of general valuation rolls. Ms Ina Barnard (2015) raised the inadequacy of market reports in her provincial review of the MPRA implementation strategies. In my opinion, a good market report is accessible to the municipal officials to support their response to valuation queries about properties in the municipality. Final market reports may be submitted with the certified valuation roll. This is frequently not the case, with the close out report at the termination of the contract, i.e. at the end of the 5-year maintenance period. As the market reports serve to inform all the subsequent supplementary valuations from the general valuation through the entire validity period of the valuation roll, such practice has absolutely no utility except to fulfil a requirement to release the final project retention payment. Market reports document the property market as at the date of valuation. This is the date on which all properties are assessed for the entire roll cycle. Thus, the market report is an essential

¹³⁵ See Section 4.6.2.6 for the explanation of the risks of straight-line tariff modelling.

guideline for the revaluation of properties through the preparation of all subsequent supplementary valuations.

The next finding addresses the ownership of all data collected by the valuer for the purpose of preparing and updating the valuation roll. It is critical that all of the data accompanies the submission of the valuation roll and that this database vests with the municipality. Dereliction of this responsibility lies equally between the municipality and the municipal valuer.

7.7.2 Data copyright

The MPRA, Section 85 states that all data collected, the copyright of the valuation rolls, and all other relevant documents/calculations assembled for the preparation of valuation rolls vests with the municipality concerned. The MPRA does not prescribe the valuation methodologies to be used by the valuers in their determination of market value. Section 45(1) states that property must be valued in accordance with generally recognised valuation practices, methods and standards and the provisions of this Act. As valuation methodologies are not prescribed, then neither is the input data assembled for each property reflected in the valuation rolls. Valuers each have their own approach; some collect a lot of property attributes, while others collect only limited data.

Irrespectively, this data belongs to the municipality and should be handed to the municipality once collected, or at the very least at the end of the contract. An oft heard excuse substantiating why the data is not handed over by the valuer service providers is that the municipality does not have a resource nor the software to view this data. Irrespectively municipalities frequently fail to receive or take ownership of the full property datasets. Through this omission, municipalities risk adding considerable cost of the preparation and maintenance of subsequent valuation rolls. Without existing data, the newly appointed service provider is required to re-commence the data collection process, as opposed to updating and gap filling the existing database. This carries inevitable costs for the municipality and the ratepayers. This finding may be mitigated by instituting a provincial monitoring reform to check that all imagery, property and valuation data is handed to the municipality. This will, if adequately monitored, result in considerable savings to the municipality.

In the next section I address the date of valuation and recommend how to achieve an improved understanding for the application of this date towards maintaining the equity in the current valuation roll.

7.7.3 Maintaining valuation equitable property rates

The date of valuation¹³⁶ is defined as the date upon which the market value of all properties in the current valuation roll, Part A of the municipal register of properties, are determined. The date of valuation is the reference point for assessing the market value of all properties for the duration of the validity of the valuation roll; 4 years for metropolitan and 5 years for local municipalities or extended

¹³⁶ The date of valuation is provided in Section 31 of the MPRA.

as condoned by the MEC¹³⁷. Market value trends may alter in the roll's validity period. Examples include the economic crash experienced in 2008 or the Covid-19 pandemic of 2020-2021. The fixed date of valuation does not permit the municipality nor the municipal valuer to alter certain property values in response to changing market conditions. There is, however, the option for the municipality to prepare the next general valuation earlier than the prescribed period.

In contrast the property rates valuations in the Netherlands are conducted one year prior to the current year. This assures the ratepayers of the currency of the market value, presented as their WOZ values. In South Africa, the prescribed roll validity periods reference all market assessments contained in the general valuation roll to the market conditions on the date of valuation. The extreme scenario for the date of valuation, should the MEC have extended condonation for non-compliance with certain time periods, may be as much as seven years from the date of valuation. The date of valuation preserves equity in the current valuation roll through adjusting all supplementary valuations prepared after the general valuation back to the date of valuation.

This research established a pervasive tendency by municipalities, especially financial/rates officials, to instruct their municipal valuers to prepare supplementary valuations using the purchase price of properties reflected on rates clearance certificates. Rates clearance certificates are issued by the municipality in the process of property ownership changes. A change of ownership is not a trigger for the preparation of a supplementary valuation. The reasons cited for raising rates clearance purchase prices as supplementary valuations is the MPRA, Section 78(1)(e), where a property was substantially incorrectly valued in the last general valuation. This practice is wrong and should be urgently addressed. The impact of preparing supplementary valuations using sales prices instead of adjusting the value of the property back to the date of valuation prejudices the new owners and creates inequity in the current valuation rolls. It is recommended that this irregularity is addressed through a circular, either from CoGTA or National Treasury, preferably both.

Such irregularities may be exacerbated when a municipal official, usually a well-intended financial official with sight of the rates clearance certificate, effects the value alteration directly against the respective property record in the financial system. This action has several implications: firstly, the designated municipal valuer may be unaware of the change made in the billing system. This malpractice results in Part A of the register (current valuation roll) being unable to balance with the financial system's valuation data. Furthermore, the registered owner is denied opportunity of requesting a review to the supplementary valuation prepared due to this value change or the recourse of objection as this property record is unlikely to appear in the supplementary valuation roll. Discipline towards a compliant workflow process is enhanced through the deployment of a VRMS in the municipality. Through the deployment of a VRMS all parties have viewing access with only the municipal valuer and his delegated team authorised to make changes to value or to the categories of property.

¹³⁷ MPRA Section 80(1). The MEC for local government may, on good cause shown, and on such conditions as the MEC may impose, condone any non-compliance by a municipality.

The education of all parties that the valuation roll is all related to the date of valuation that remains valid for the entire period is relevant. All changes effected through the preparation of supplementary valuations are reflected in Part A of the register or the current roll that integrates with the financial system to issue timeous and accurate rates accounts. There is no separation between the continuum of supplementary valuations prepared over the entire validity cycle. Part A of the municipal register of properties is the current valuation roll containing all valuation data and updates.

The assembly of the supplementary valuations prepared in a financial year are required to be published as an annual supplementary valuation roll. The published valuation rolls afford recourse to stakeholders, whether these are the registered property owners, third parties including the municipality, to lodge objections and appeal applications.

The next area of proposed reform recommendations addresses the present operational confusion relating to roll updating or the preparation of supplementary valuations.

7.7.4 Roll updating

The MPRA provides that the published supplementary roll¹³⁸ must contain all of the supplementary valuations prepared during the preceding year, together with any supplementary valuation review decisions. Thus, municipalities who only prepare supplementary valuations for assembly into supplementary valuation rolls once annually diminish the rights of recourse to the affected registered property owners. This finding could be rectified through the promulgation of a regulation to clarify the following:

- that a registered owner has recourse for a review on the preparation of a supplementary valuation, and
- that a registered owner may lodge an objection once the supplementary valuation roll is published.

A frequent error made by municipalities is to deny registered owners, who sought a supplementary review as provided in Section 78(5)(b) of the MPRA recourse to object once the annually published supplementary valuation roll is published.

The next finding addresses the contents of the Section 49 notices issued to registered owners for whom supplementary valuations in the period preceding the annual publication of the supplementary valuation roll were prepared. The regulatory Section 49 notice for the annually published supplementary valuation roll excludes the effective date. The notice¹³⁹ refers to the respective financial year of publication. As this regulation is already in place, the finding directs the respective monitoring agencies towards further education of municipal valuers, municipal officials and the public in respect of these provisions. The purpose of the annual publication of a supplementary valuation roll is to provide recourse for either the registered owner or any other party to object and appeal

¹³⁸ MPRA Section 78(6).

¹³⁹ MPRA Regulation 29304, Annexure 3.

against the revaluation or any other detail pertaining to the entry reflected in the supplementary valuation roll. There is also provision enabling the objector to lodge an appeal application where the objector is dissatisfied with the outcome of the objection review.

A further finding with respect to valuation roll updating is that while there is the statutory prescription to publish an annual supplementary valuation roll, there is no effective date for the annual supplementary rolls. The preparation of supplementary valuations is an ongoing process to be attended to whenever necessary. The billing of the revised property rates is informed by the updated current valuation roll, Part A of the municipal register of properties. Supplementary valuations are processed for billing once the review processes are completed. These are either linked to the date of the respective trigger for the change in the property's attributes eg subdivision or consolidation, or from the first day of the month following the posting of the regulatory Section 78 notice eg an omission from the valuation roll.

Without a prescribed date by which a municipality must publish its annual supplementary valuation roll, a practical approach is to accommodate the annual publication of a supplementary valuation roll, together with any objection reviews, prior to the current municipal year end, 30th June. The inclusion of hearings for any appeal applications is dependent on an external valuation appeal board to convene the required hearings. The inclusion of the appeals processes within these timeframes may not be feasible. The proposed timeframe of 31 March preceding the commencement of the new financial year for the annual publication of the supplementary valuation enables the municipality to commence its new municipal financial year unencumbered by any legacy valuation roll issues or journal entries from the previous financial year. A useful reform recommendation would be for CoGTA to provide a guideline for supplementary roll publications as 31st March annually and to monitor compliance against this timeframe.

The next section provides findings about the feasibility of value assessments for rating purposes to inform other forms of taxation in South Africa as in the Netherlands.

7.7.5 Application of recurrent property tax values for other taxation

In the Netherlands, the national Tax and Customs Administration uses the WOZ value, the value prepared for property rates, to calculate all other taxation pertaining to property, including income tax or the notional rental values for owner-occupiers, corporate tax and inheritance tax. The water authorities or polder boards use the WOZ value to assess water system taxation levied to property owners. Insurance companies ask clients with fire and burglary insurance on their properties to state the assessed value of the property using the WOZ value. The WOZ values are available on the internet for all sorts of public use (Kathman & Kuijper, 2018). While it is in the interests of the property owner to keep the assessed value for tax purposes low, it may not be in the interests of the taxpayer to have low values for these alternate applications. The rating legislation in the Netherlands promotes uniformity and maintains quality assessments as well as efficiency and clarity for the taxpayer (Real Estate Valuation Act, 2004, the Netherlands).

In South Africa, valuations for the purposes of property rating are limited to this purpose. Given the financial investment incurred by municipalities towards preparing and maintaining the municipal registers of properties or current rolls, additional alternate taxation applications for this data should be considered. As the data interoperability improves there may be merit in investigating a broader application for values prepared for property rates. In the Netherlands the accuracy of the WOZ values is such that these values are used by property owners to inform the selling prices for their properties. It is noted that the currency of the Netherlands is at the most 12 months rather than the extended validity periods of the valuation rolls in South Africa.

There is repeated reference in this thesis to the good practice of deploying a VRMS integrated with the financial system. The final section regarding the operational considerations for the municipal registers of properties addresses whether municipalities require such a system and what the potential risks of not deploying the VRMS entail. Furthermore, if the requirement for the deployment of a VRMS is established, then what is the minimum viable functionality of the VRMS and, lastly, consideration of the location of the VRMS in the municipal ICT ecosystem. These findings are premised on the assumption that the current institutional confusion as to whether the VRMS falls under CoGTA (through the MPRA) or National Treasury's (mSCOA Regulations for integrated systems) respective monitoring mandates is resolved.

7.7.6 Valuation Roll Management Systems and data interoperability

Both national and provincial CoGTA provide bid guidelines to support the procurement of valuation service providers to prepare and maintain valuation rolls. Municipalities, especially the less capacitated ones, follow these guidelines closely. This issue is identified and investigated in Section 4.5.

The issue of valuation systems raised previously in this chapter under the sections on MPRA findings, Section 7.2.2, as well as under the institutional considerations, Section 7.9, requires further mention as presenting significant operational risks. The bid guidelines extended by CoGTA facilitates VRMS procurement through a general valuation bid under the auspices of the MPRA. However, the same VRMS may also be procured as a module or functionality in the integrated financial system offered through National Treasury's procurement processes.

The VRMS systems used by the appointed valuers operating outside the municipal IT environment poses the risk of non-compliance with National Treasury's mSCOA Regulations by the municipality. If the appointed valuer uses his own VRMS, then it is probable that the valuation and property data resides outside the municipality's IT environment. Given the previously noted reticence of valuation service providers to comply with the MPRA's copyright provisions¹⁴⁰, this equates to potential data loss by municipalities. This finding should be urgently addressed through an appropriate reform.

¹⁴⁰ Refer to Section 7.13.4.

Conversely, where a municipality has a licensed VRMS, their appointed valuers may decline to work in the municipal VRMS. If the designated valuer elects to work outside the municipal IT environment the municipality may accept spreadsheet extracts containing the valuation roll for uploading into the municipal VRMS or directly to the financial system. Even with efficient data processes it is probable that the municipal valuer may not have access to all of the information required to prepare supplementary valuations whenever necessary. Triggers for the preparation of supplementary valuations emanate from different departments, including Town Planning, the Building Inspectorate, Finance, Legal Services and Valuations. This finding motivates the requirements for all parties to operate within a single system using the same municipal register of properties. From a performance perspective, if the relevant personnel work within a single integrated system, performance management whereby municipal officials must account for the period taken to complete a task or rectify an irregularity is possible.

The recommendation addressed above presumes that the VRMS includes the geospatial municipal register of properties. There are examples of VRMSs operating independently from GIS. Ideally a geospatial property register should provide a common view for all VRMS users, irrespective of their preferred perspective (water, valuations, zoning, debtors arrears etc). The merits of the municipal register of properties as a single integrated database are addressed in Chapter 4. This operational principle follows the well-established mSCOA mantra of a single version of the truth.

In Chapter 5, Monitoring and Oversight, Section 5.5.3, I referred to a senior CoGTA official (MP Moya, 2023) who advised of CoGTA's support for the VRMS, indicating that this was an area attracting close monitoring attention with the acknowledgement that certain service providers are non-compliant. This finding is echoed by National Treasury's most recent independent audit conducted into municipal systems architecture. These findings included the recommendation to define and enforce minimum seamless integration requirements between the VRMS and the financial system (2022). Presently there are a variety of secure file transfers as well as the API's between the VRMS and the financial systems that may or may not meet National Treasury's minimum seamless integration requirements.

In summary, it is key for National Treasury and CoGTA to agree on a single procurement route for the VRMS in the best interests of municipalities. The current procurement duality is not good practice and may result in duplicated bid costs and, in the worst-case scenario, duplicated VRMS licencing costs without the required seamless integration between the valuation roll and the financial system. The seamless integration between the VRMS and the financial system means that data migration both to and from the respective system complies with minimum seamless integration requirements. The final finding is that proper oversight of the seamless integration between the VRMS and the financial system is implemented.

Table 7.4 provides a schedule of the various operational findings identified within this thesis. Each finding is described with a proposed reform and, where appropriate, the proposed reform mechanism.

Table 7.4: Operational findings: Municipal registers of properties

A. Findings: The preparation and maintenance of the Part A of the municipal register of properties			
Ref #	Description	Proposed reform	Reform mechanism
1	Adoption of available technology	Extension of internet connectivity as a municipal service. Upgrading of municipal IT infrastructure to enable integrated databases and software systems to be deployed.	Policy and budget revisions
2	Standardisation of the market reports	Market reports are uniform in terms of content and format.	The valuation industry, SACPVP, collaborates towards standardising the format and content
3	Submission of draft valuation rolls for municipal thesis	Draft market reports accompany the submission of the draft valuation rolls to enable improved evaluation of the draft values by municipal officials.	Further training with support from CoGTA
4	Copyright	All property data collected for the preparation and updating of the valuation roll belongs to the municipality and should be handed to the municipality once collected, or at the very least at the end of the contract.	Copyright to be included in the monitoring framework - MPRA Section 80(3)
5	Date of valuation & maintaining roll equity	Clarification about adjusting all supplementary valuations following the general valuation back to the date of general valuation. Clarification that property transfers do not trigger a supplementary valuation with the sales price reflected on the rates clearance certificates informing the supplementary valuation.	Further training for municipal officials (Finance/Rates) and municipal valuers
6	Objection recourse against the supplementary valuation roll	Clarification that: (1) a registered owner has recourse for a thesis on the preparation of a supplementary valuation, and (2) a registered owner may lodge an objection once the supplementary valuation roll is published.	MPRA regulation
7	There is no effective date for the annual supplementary rolls.	All supplementary valuations are already billed prior to the publication of the annual supplementary valuation rolls.	Further training for municipal officials (Finance/Rates) and municipal valuers

8	Recurrent property tax values to informs other taxation agencies	All administrative bodies in the Netherlands are obligated to use the WOZ value,	Good practice – the Netherlands
9	Copyright and additional data fields in the contents of the valuation roll. Section 85, MPRA	Improved monitoring of property data handover to municipalities.	Amendment to the monitoring framework, MPRA Section 80(3)
10	Costs of managing objections	Review of the remuneration for objection reviews and furnishing objections. Section 51(a), MPRA,	Possible inclusion in the MPRA standards, SCM reform
11	The valuation roll is the primary source for all valuations.	Only the designated municipal valuer may effect changes to valuations and/or categories of property.	Further training with support from CoGTA

B. Findings in respect of the Valuation Roll Management System

	Description	Proposed reform	Reform mechanism
1	SCM processes for the procurement of VRMS	Clarity regarding the appropriate vehicle for the procurement of the VRMS, as a module in the integrated financial system or with the valuation services for the preparation and updating of the valuation roll.	Dialogue between CoGTA and Treasury
2	Mandatory requirements for a VRMS	The current policy by which B4 municipalities are not required to procure VRMS should be reviewed.	Dialogue between CoGTA and Treasury
3	VRMS evaluation criteria	VRMS functionality, and integration specifications to be agreed between CoGTA and National Treasury and included in the respective bid's evaluation criteria.	SCM reforms, amendment to the MPRA bid guidelines, or MFMA SCM reforms
4	VRMS integration with the municipal financial system	Recommendation to define and enforce minimum seamless integration requirements.	mSCOA reform, National Treasury to implement the evaluation of systems integration
5	VRMS to be integrated in the municipal IT environment	Municipalities to be the custodians of their property and valuation data. The municipal valuer should update Part A of the property register in the VRMS licensed to the municipality.	mSCOA reform, National Treasury to implement the evaluation of systems integration
6	Fragmented workflow processes between the valuer, town planning, building	All municipal users involved in the property work streams should work from the geospatial municipal register of properties, in the municipality.	Further training for municipal officials administering the municipal registers of properties

	inspectorate and finance and other related business units		
C. Findings: Capacity building			
Ref #	Description	Proposed reform	
1	Valuations is scarce municipal skills set	Develop in-house resources, registration for the Municipal Property Assessor qualification. Evaluate the structured skills transfer programme submissions in procurement processes. Use the shared service or municipal partnership opportunities to improve valuer capacity.	
2	GIS is scarce municipal skills set	Develop in-house resources. Evaluate the structured skills transfer programme submissions within procurement processes. Use the shared service or municipal partnership opportunities to improve GIS capacity.	
3	Project management or contract management skills	Use the shared service or municipal partnership opportunities to improve valuer capacity.	

Source: Author's own compilation.

7.7 CONCLUDING REMARKS

This chapter addressed the findings of the status of municipal property registers in South Africa. The findings follow the sequential framework of addressing legislative, institutional and operating findings, culminating in proposed monitoring and other reform recommendations. There are tabulated summaries of the detailed thesis findings under the designated headings: Legislative, institutional and operational attached as Annexure A.

The next and final chapter provides a focused summary of the key recommendations and reforms to address the efficacy of property rates through improving coverage. The final chapter also identifies potential additional roles for the municipal property registers in South Africa.

CHAPTER 8 CONCLUDING REMARKS: RECOMMENDED REFORMS

Land is considered as an issue of the utmost importance in most counties (Lemmen *et al*, 2018). Various land related policies address a range of issues including the development of land, land ownership, recurrent property taxation, land reform and poverty eradication amongst others. These authors state that having policy is one thing, but having the instruments to enforce this policy is another (Lemmen *et al*, 2018). Land is a crucial issue in South Africa, with policies addressing land development, ownership, recurrent property taxation, land reform, and poverty eradication. The MPRA regulates property rates levied by municipalities. This research investigates the current role of municipal registers of property in providing accurate coverage for property rating. The findings inform the development of reform recommendations to improve the role of these registers. This proposal would extend accurate geospatial platforms for successful municipal financial reporting and aggregate these platforms for a national geospatial database. Expanding the use of complete and current geospatial municipal registers may support land audits, land administration systems, and overall land governance, all essential building blocks for financially sustainable municipalities. This thesis clarifies that Part A of the municipal register of properties is the current valuation roll, the version of the valuation roll that is constantly updated through changing property attributes and preparation of supplementary valuations. The Netherlands case study provides good practices for improving property rates efficacies, and reform recommendations address legislative ambiguities, institutional fragmentation, and operational shortcomings.

The research methodology outlined in Chapter 1 (Section 1.4) explains the potential pitfalls where a problem addressed at too low a level of government may worsen the specific problem and even create further challenges at a higher level of government. Using the guidelines from the Australian Public Service Commission Advisory Committee (2004) to consider the whole of government - this thesis focuses on the achievement of an integrated response across different municipal departments. The proposed integration would escalate to include CoGTA, National Treasury and the SDI Directorate, working together across portfolio boundaries to support and improve service delivery to communities. The academic guidance is accommodated in reform recommendations that advocate municipal, provincial and national agencies collaborating for coordinated legislative, institutional and operational reform strategies.

This concluding chapter develops reform recommendations under the following headings: legislative, institutional, operational and monitoring recommendations.

8.1 LEGISLATIVE REFORM RECOMMENDATIONS

8.1.1 MPRA and MFMA reforms

The current role of the municipal register of properties provides coverage for property rates. The CoGTA Department, both provincially and nationally, is responsible for regulating compliance with the MPRA. A key legislative recommendation is for the insertion of the provision for the municipal registers of properties to be geospatial. The current provisions in Section 23 of the MPRA refer only

to municipal requirements to draw up and maintain a municipal register of properties. The insertion of 'geospatial' prior to 'municipal register of properties' would provide clarity.

Municipalities in South Africa may charge rates on property and fees for services. The MFMA requires National Treasury to regulate financial management of municipalities in accordance with the provisions of Chapter 13 of the Constitution. National Treasury introduced business reforms in 2017 to standardise municipal financial reporting and streamline business processes for all municipalities. Financial transactional reporting is prescribed by the National Treasury's mSCOA Regulations under the MFMA. The mSCOA Regulations refer to 'Section 23' in relation to regional segment or locational transaction reporting - this reference does not explicitly refer to Section 23 of the MPRA. Thus, the mSCOA Regulations imply rather than prescribe that the municipal register of properties should be geospatial. Once again legislative clarification is required for the inclusion of the 'geospatial' component with respect to the municipal registers of properties. Without such prescription the capacity of the municipal registers of properties to enable successful regional (locational) segment reporting may be compromised.

Thus, both key legislative frameworks, the MPRA and the MFMA, need legislative clarification to prescribe the assembly and maintenance of geospatial municipal registers of properties. This is an urgent and pressing reform recommendation.

National Treasury's mSCOA Regulations also prescribe the seamless integration of data between the VRMS hosting the current valuation roll, or Part A of the municipal register of properties and the financial system. Updating Part A of the property register through updating property attributes in the municipal register of properties and then issuing instructions for the preparation of supplementary valuations is emerging good practice. This good practice needs to be strengthened through a regulatory workflow process. The findings of this thesis are that both the assembly and maintenance of the geospatial municipal registers of properties should be an internal municipal function. This function should not be outsourced to valuation service providers to prepare and maintain valuation rolls. Through rearranging roles and responsibilities for the assembly and maintenance of the municipal registers of properties, appointed municipal valuers would take instructions to prepare supplementary valuations from the municipality. Currently these appointed valuation service providers are responsible for updating the municipal registers of properties and the preparation of supplementary valuations. The omission of any oversight is a risk to timeous updating processes for the current valuation roll, Part A of the municipal register of properties. Supplementary valuations provide the necessary updates to the current valuation roll, Part A of the municipal register of properties. This updating mechanism maintains equitable rating for the municipality for the duration of the general valuation roll cycle, four years for metropolitan and five years for local municipalities.

8.1.2 SDI Act reforms

The next key finding addresses the requirement for an accessible geospatial platform for improved decision-making and public sector participation. Makanga and Smit (2010) highlight spatial data as a necessary resource for the development of a nation and the emergence of e-government.

The geospatial municipal registers of properties provide such datasets at a municipal level. The third legislative framework analysed in this study is the SDI Act, the national legislative framework for the management of all spatial data. The SDI Directorate is responsible for designating structures and mechanisms for data coordination. A principal reform emerging from this thesis is the recommendation for the municipal registers of properties to be considered essential base datasets and for municipalities to be nominated as the data custodians of the geospatial municipal register of properties.

Provided the municipal registers of properties contain spatial and other data relating to all properties within the municipality, these fulfil the function of the property data hub in a municipality. Theoretically all of the municipal departments using a property database would use the municipal register of properties as the platform for their respective tasks. This single version of the truth with respect to property data would therefore be updated and maintained across all of the different municipal functions, including town planning, the building inspectorate, water and electricity services, refuse collection, finance and the valuation roll. The adoption of the geospatial municipal register of properties as the single property data hub replaces the fragmented data silos prevalent in today's municipalities.

8.1.3 Reforms to enable data interoperability

The next reform recommendation addresses the business rules required to share the property data across the proposed departments. While data interoperability is an attractive concept this may only be achieved through the adoption of a unique property identifier. Presently South Africa's Surveyor General's Office identifies all properties using a 21-digit code. There are certain shortcomings with this naming standard. Sectional title schemes and their associated sections as well as an appropriate naming protocol to accommodate unregistered properties, various forms of tenure, multiple purpose properties amongst other anomalies present in the property environment are excluded from the current 21-digit code. The South African Geomatics Institute (SAGI) – the geomatic practitioner's professional association, recommends the adoption of an expanded 32-digit expanded SG code. This is considered as the South African GIS 'gold standard' (James & Channing, 2020). A key finding in this thesis is for the urgent adoption of an appropriate property naming standard to enable the unique identification of each and every property at a national level to achieve data interoperability. An alternative recommendation to achieve data interoperability is to endorse the International Standard for Standardisation (hereafter "ISO") ISO 19131 geographic information standard¹⁴¹. With the existing groundwork of 21-digits already in place the proposed extension to 32-digits is considered the more practical reform option.

¹⁴¹ ISO is a worldwide federation of national standards bodies, a non-government organisation representing standards bodies from more than 160 countries. ISO 19131 specifies standards for geographic data to support regulating systems, tools and environments.

The South African Government adopted the National Development Plan with a long-term vision of 2030. The Spatial Development Framework (SDF) provides the spatial platform for the National Development Plan 2030, incorporating planning strategies informed by national spatial development imperatives. The success of the Spatial Development Framework is reliant on accessible geospatial data. Considering this national objective the municipal geospatial registers of properties could provide an extended role to support land administration and land governance. The municipal registers of properties are sources of good land information. South Africa is experiencing rapid urbanisation as well as traditional land tenure and land resource management challenges. The finding of this research is that the extended role of the municipal registers of properties towards supporting improved land administration is entirely feasible within the South African context. Juridical, fiscal and regulatory cadastre are all contained in the municipal registers of properties through property ownership data (the judicial cadastre), the current valuation roll (the fiscal cadastre) and the land use schema (the regulatory cadastre). The finding of this thesis is that the individual municipal registers of properties may be aggregated to municipal district, provincial and national levels to contribute to strategic decision-making at all spheres of government. The caveat is that the municipal registers of properties must be both current and complete, meet sufficient quality standards, and that each property must be uniquely identified. The inclusion of spatial data in the municipal registers of properties would enable these municipal databases to support multiple issues cross-cutting disciplines and organisations, both in the public and private sectors.

Table 8.1 provides a summary of the reform recommendations from a legislative perspective. These address an amendment to the MPRA to prescribe the requirement for the municipal register of properties to be prepared and maintained as a spatial register. The other key recommendations are for the drafting of appropriate MFMA and SDI regulations to clarify the role of the municipal register of properties as a requirement for regional segment reporting and finally to regularise the naming standard for all property parcels that will enable data interoperability.

Table 8.1: Summary of the key legislative reform recommendations

Ref #	Legislative reference	Description of the finding	Proposed reform	Reform mechanism
1	MPRA 23(1)	Insertion of the prescription for a geospatial municipal register of properties	Insert the word 'geospatial' ahead of 'register' Municipal registers of properties must be prepared and maintained as <u>geospatial</u> registers.	MPRA Amendment
2	MFMA, mSCOA reference to Section 23	Municipal register of properties	The reference should be explicit - Section 23, MPRA. Currently only refers to Section 23.	MFMA Regulation

3	SDI Act	Cadastral data naming protocols	Extension of the Surveyor General's 21-digit code to 32-digits to enable unique spatial recognition for each property parcel.	Regulation through the SDI Act
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Source: Author's own compilation.

8.2 INSTITUTIONAL REFORM RECOMMENDATIONS

8.2.1 CoGTA, National Treasury and the SDI Act Directorate

Municipalities play an important institutional role in South Africa. For the purposes of this study municipalities are responsible for the assembly and maintenance of the municipal registers of properties. The analysis of the existing institutional arrangements in South Africa reveals an imperfect and fragmented engagement between the three key national government departments, as these pertain to the municipal registers of properties. These include CoGTA, National Treasury and the SDI Act Directorate. These principal stakeholders, in consultation with the municipalities, should collaborate for the development of appropriate standards for the assembly and maintenance of geospatial municipal registers of properties.

This research revealed disjointed institutional linkages between CoGTA and National Treasury. The mSCOA chart reveals a misalignment with the provisions of prescribed categories in the MPRA. In addition, National Treasury requires municipalities to apply for inclusion of additional categories of properties in their municipal chart eg. Drakenstein Municipality applied to National Treasury for the inclusion of sports fields in their municipal chart. This requirement by National Treasury is unclear, as the MPRA permits municipalities to include additional categories of properties, if these do not circumvent the provisions for the prescribed categories of properties.

The SDI Act Directorate, an oft overlooked yet meaningful stakeholder, is included in the institutional analysis of the current role of the municipal registers of properties. The investigation of the South African spatial data model indicates room for improvement, specifically in respect of the collaboration between identified stakeholders. This thesis suggests that SASDI's role as the responsible agency for all spatial data infrastructure, as well as the establishment and maintenance of a central spatial data repository, should be clarified. Clear institutional relationships relating to the custodianship of the various base datasets must be identified and the provisions for the necessary coordination mechanisms between different spheres of government prescribed.

8.2.2 Municipal organisation

Collectively, inconsistent, incomplete or inaccurate municipal registers of properties across municipalities contribute to poor rating performance, as well as unsuccessful mSCOA reporting. Measures to improve the organisational integration in municipalities should be promoted through the utilisation of the municipal registers of properties by all departments using a property database. By linking revenue administrative components (eg lease management, business licences, service

charges) with the municipal registers of properties, all property data would be referenced off the relevant property record in the municipal register of properties.

This thesis recommends that the geospatial property register be assembled and maintained as a core municipal function. The recommendation is for a single property data hub to be established and maintained in each municipality or shared between a group of municipalities. This finding opposes outsourcing the assembly and maintenance of the municipal register of properties, especially to the valuation service provider appointed to prepare and maintain the valuation roll. Such practice is not in the interests of municipalities. Should there be capacity constraints in respect of the GIS competencies, then the geospatial municipal register of properties should be outsourced as a dedicated project to a different service provider, or the GIS resources in the municipality complemented.

8.2.3 Municipalities as data custodians

The finding of this research is for municipalities to be nominated as the data custodians for the geospatial municipal registers of properties. The subsequent subscription by municipalities to prescribed data standards would contribute to improved spatial property data accessibility and coordination. SAGI, the professional association representing the geo-technicians, the resources responsible for the assembly and maintenance of the municipal registers of properties, compiled an initial guide for the assembly and maintenance of the municipal registers of properties. This research recommends that this guide is adopted as the initial standard against which to benchmark the quality and consistency of the data contained in the municipal registers of properties. This proposed reform would promote municipal adherence to the prescribed standards for the assembly and maintenance of the geospatial property register. This recommendation is also likely to prompt more focused upskilling of GIS practitioners in municipalities.

It is anticipated that such reforms would also prompt updating the mSCOA Regulations to regulate that the geospatial municipal registers of properties as the source of all essential property data in the municipality. This essential municipal function should be entrenched. The geospatial municipal register of properties should be the single version of the truth for all property-related data in the municipality, alerting relevant business units to any material changes in property attributes. This reform would promote data interoperability between internal municipal departments including Finance, Town Planning, the Building Inspectorate, and the department responsible for maintaining the municipal asset register. Improved communication between these departments also facilitates updating Part A of the property register, the current valuation roll.

This reform would also enable data integration between the municipalities and external key data custodians such as the Deeds Registry and the Surveyor General's Office. Table 8.2 summarises the key institutional findings and reform recommendations.

Table 8.2: Summary of the key institutional reform recommendations

Ref #	Item description	Proposed reform
1	Municipal organisation	Investigate the business processes and ensure that the respective departments (Valuations, Finance, Town Planning, the Building Inspectorate, Legal) adopt an integrated approach using the municipal register of properties as the property data hub in the municipality. Municipalities must undertake the function to assemble and maintain the geospatial municipal register of properties as a key municipal function.
2	Institutional alignment	The mSCOA chart is amended to align with the MPRA, Section 8 in respect of the prescribed categories of properties, provisions for additional categories and subcategories.
3	Institutional realignment – SASDI	SASDI's role is clarified as the agency responsible for all spatial data infrastructure, as well as the establishment and maintenance of a central spatial data repository. Clear institutional relationships relating to the custodianship of the various base datasets are identified and prescribed.
4	Appointment of data custodians and development of relevant standards	Municipalities are appointed as base data custodians for the geospatial municipal register of properties, SDI 11(3). The municipalities must adhere to regulated standards and prescriptions for the municipal registers of properties. Municipalities together with CoGTA, National Treasury and the SDI Directorate collaborate to develop a minimum standard for the assembly and maintenance of the geospatial municipal register of properties.

Source: Author's own compilation.

The necessity for clear institutional arrangements and defined roles and responsibilities is emphasised through the analysis of the property information management processes in both the Netherlands¹⁴² and the review of New Zealand's Land Information System, LINZ¹⁴³. The risk of avoiding such reform recommendations is that municipalities will be left to their own devices with respect to the treasure trove of spatial data that they hold. This thesis reinforces the conclusions by

¹⁴² Refer to Chapter 6 for the Netherlands case study.

¹⁴³ Refer to Section 2.7.1 for the review of New Zealand Land Information System, LINZ.

Siebritz *et al* (2022) for a governance framework whereby all spheres of government participate in SASDI.

8.3 OPERATIONAL REFORM RECOMMENDATIONS

8.3.1 Adoption of available technology

An important assertion from this research is the need for South Africa to adopt available technology and, moreover, for these technological innovations to be supported across both public and private institutions. The use of technology enables opportunities for spatial data to be viewed on various devices for different applications by multiple users simultaneously. Poor connectivity and inadequate ITC infrastructure hinder both data collection and data sharing. This is especially prevalent in rural municipalities. The requirement for improved connectivity should be a national priority. The proposed reform recommendation is for internet connectivity to be prioritised as a municipal service, enabling communities' access to data and improving accountability and transparency through e-governance.

This finding leads to identifying the need for investment in digital literacy at all levels. Such training should be ongoing to enable users to have access to technical support for their various digital platforms and processes. The proposed role for the geospatial municipal register of properties is as the integrated property database in each municipality. Data interoperability is realised when, for example, planning authorities view the restrictions applicable to the land parcels and the landowners' access all of the information pertaining to a specific property through all using a common integrated system, a single version of the truth. There is the potential for the geospatial municipal registers of properties to provide good property information to municipalities and for these datasets to cascade upwards to provincial and national reporting levels. The recommendation is for the role of the geospatial municipal registers of properties to be extended beyond just providing coverage for the purposes of property rates.

From a financial perspective, municipalities with geospatial municipal registers of properties may generate spatial or mapped reports identifying debtor arrears by value and age. Mapping customer profiling information could assist municipalities to improve service delivery and become more financially sustainable. The finding is that geospatial reporting enables improved accessibility to financial data in a municipality. Traditionally this was the exclusive purview of financial officials familiar with financial statements. This thesis also supports open land information as improving trust between government and society, as well as providing opportunities for service innovation. For example, the demise of the South African Post Office created a challenge for the distribution of municipal accounts. On-line applications linking a property record to a smart device enables ratepayers to access municipal accounts, upload utility meter readings and to receive statutory as well as other communications from their respective municipalities.

8.3.2 VRMS

This thesis recommends the mandatory deployment of the VRMS in municipal systems environments. The present discretionary procurement of the VRMS by B4 municipalities should be reviewed. B4 municipalities are the most vulnerable with limited resources and therefore may be more susceptible to poor data practices. Adherence to the prescribed seamless integration between the financial systems and the VRMS would mitigate much of this associated risk for these municipalities.

Another urgent reform recommendation should clarify how the mandatory VRMS should be procured. Currently there are two options: either with the valuation service provider appointed to prepare and maintain the valuation roll, or alternatively through the solution suite extended by the vendor providing the integrated financial system. This clarity is reliant on constructive dialogue between CoGTA and National Treasury. Functionality requirements for the VRMS exist in both the bid specification guidelines for valuation service providers and in the mSCOA functionality requirements as a module to the financial system. National Treasury has not yet embarked on rigorous evaluation of the prescribed seamless integration of the VRMS and the financial system. Thus, valuation service providers persist in submitting valuation rolls as Microsoft excel spreadsheets to their municipal clients.

The recommendation for seamless integration between the VRMS containing the municipal register of properties and the financial system is considered a priority reform. The achievement of this reform will enable authorised municipal users to view the selected property information in the geospatial municipal register of properties. Such views may include displaying debtors' details, bulk and individual household water consumption, the status of a development application or utility disconnections. Functionality for restricting user access and for recording audit trails of any changes to any records is mandatory. Such requirements are already prescribed by the Auditor General's IT compliance requirements. Only the delegated valuers and valuation team would have the authorisations to change values or categories of property attributes in the property records. Town planners would have access to amend the land use permitted on a particular property once appropriately authorised. Other users may view the data and address the various queries through access to the accurate and complete geospatial property data. The geospatial municipal register of properties in each municipality should provide a common view for all users, enabling the mSCOA mantra of a single version of the truth.

8.3.3 District development models

Linkages between municipal data hosted in geospatial municipal registers of properties and national planning initiatives are reliant on data interoperability. Enemark *et al* (2005) state that governments should promote good land information systems with accurate, complete and efficient property data, including registration data, a cadastre including both registered and unregistered rights, and interests pertaining to the specific property. Effective land management is only successful with adequate land information. This includes but is not limited to information about land resource

capacity, land tenure, land ownership, fiscal considerations, actual and permitted land use. Both the National Spatial Development Framework and the Framework for Spatial Planning and Land Use Management, Spatial Planning Land Use Management Act, 16 of 2013, are dependent on spatial data. Spatial data is key to execute their various mandates, as well as report progress for the projected targets outlined in the National Development Plan, 2030. At municipal level the strategic plans for municipalities are captured in their Integrated Development Plans (IDPs) in line with the provisions of the Local Government: Municipal Systems Act, 32 of 2000. The preamble to this act prescribes the establishment of principles, mechanisms and processes to enable municipalities to move progressively towards social and economic development of their respective communities.

This thesis concludes that if the input data for the municipal Integrated Development Plans is compromised, then the bigger picture towards fulfilling the objectives of South Africa's National Development Plan, 2030, will be impaired. Conversely if the municipal registers of properties are accurate, current and complete, then the municipal registers of properties could provide current, complete and accurate spatial data towards both functions, SPLUMA at a local level, and the National Development Plan nationally. The District Development Model may present the vehicle to extend the role of the municipal register of properties from providing coverage for property rates to fulfilling a greater role. Improved performance and more coherent service delivery would contribute to transformed municipal district economies and improved quality of lives. The reform recommendation is for the geospatial municipal registers of properties to support the municipal Integrated Development Plans. These municipal plans could then be aggregated into OnePlan, a district municipal plan and upwards to a national level. The result would be improved national planning and spatial reporting. The advantage of using the municipal registers of properties is that these contain the detailed data granularity to enable planners, policy makers and politicians to have all the data at their fingertips, should they require the details for any aspect of their decision-making. If the requisite building blocks for data interoperability and stringent monitoring of the municipal registers of properties are adopted and enforceable, these goals are, in my opinion, entirely achievable.

The assessment of potential land administration systems for South Africa proposes a tailored, purpose-built system that addresses the requirements of the population, their connection to the land, addresses tenure security, and manages land use and natural resources in a sustainable manner. This includes the proviso that land administration systems must be regarded as dynamic entities that ought to undergo periodic evaluations and, if required, revisions in response to evolving property information demands and technological advancements. Regarding land tenure in particular, any approach must be adapted to the circumstances and demands of South Africa. Land tenure in South Africa encompasses a range of unregistered or off-register tenure systems. The fact that these tenure rights are not formally recognised does not mean that such rights should be omitted from identification at a spatial level. Irrespective of the land administration model implemented by policy makers, the standard naming protocol for unique property parcel identification should be immediately revised to include the extended SG code, proposed in this thesis as consisting of 32-digits. The

availability and accessibility of current and complete spatial data to users both inside and outside of government is a key tenet underpinning successful land administration. Adoption of the reform recommendations identified in this research would improve the reliability of these spatial datasets and their role for improved land administration in South Africa.

The present fragmented workflow processes in and external to municipalities, the propensity for silo-ed data as opposed to integrated applications may be addressed through consideration and adoption of the various iterative reforms identified in this thesis. Such reforms are not going to occur without change management and probably certain discomfort, as certain 'data empires' are rendered obsolete. GIS competencies are a scarce skill set in local government. The importance of the geospatial municipal registers of properties as a platform providing coverage for property rating and as a reporting platform for mSCOA reporting should prompt the improvement of GIS skills in municipalities. In the interim there are various options for municipal partnerships and resource sharing for geo-technicians through municipal participation in District Development Models and the OneMap projects.

8.3.4 Capacity building

Capacity building is also an important consideration for delivering more efficacious property rates in South Africa. The South African Qualifications Authority (SAQA) developed a qualification for a Municipal Property Assessor. The objective of this qualification is to improve municipal competencies required for efficient property rates in municipalities. This is a relatively new qualification, available from 2022, so the impact of this training on municipal competencies is not immediately apparent. The impact of this new qualification on municipal competencies and rating performance may be subject of further research.

Table 8.3 highlights the key operational reform recommendations.

Table 8.3: Summary of the operational reform recommendations

A. Findings: The preparation and maintenance of the Part A of the municipal register of properties			
Ref #	Description	Proposed reform	Reform mechanism
1	Adoption of available technology	Extension of internet connectivity as a municipal service. Upgrading of municipal IT infrastructure to enable integrated databases and software systems to be deployed.	Policy and budget revisions

2	District development model	Municipal partnerships to promote shared valuer resources with the attendant cost efficiencies, specifically with respect to municipal valuers and GIS practitioners. Improved performance and coherent delivery, transformed district economies and improved quality of lives are achieved through the aggregation of municipal plans into OnePlan, a single provincial spatial dataset.	Municipal policy and budget revisions
3	SCM processes for the procurement of VRMS	Clarity regarding the appropriate vehicle for the procurement of the VRMS, as a module in the integrated financial system or with the valuation services for the preparation and updating of the valuation roll.	Dialogue between CoGTA and Treasury
4	Mandatory requirements for a VRMS	The current policy by which B4 municipalities are not required to procure VRMS should be reviewed.	Dialogue between CoGTA and Treasury
5	VRMS integration with the municipal financial system	Define and enforce seamless integration requirements between VRMS and the integrated financial system.	mSCOA reform, National Treasury to implement the evaluation of systems integration
6	VRMS to be integrated into the municipal IT environment	Municipalities to be the custodians of their property and valuation data. The municipal valuer should update Part A of the property register in the VRMS licensed to the municipality.	mSCOA reform, National Treasury to implement the evaluation of systems integration
7	Fragmented workflow processes between the valuer, town planning, building inspectorate and finance and other related business units	All municipal users involved in the property work streams should work from the geospatial municipal register of properties, in the municipality.	Further training for municipal officials administering the municipal registers of properties

B. Findings: Capacity building

Ref #	Description	Proposed reform
1	Valuations is scarce municipal skills set	Develop municipal valuer resources. Evaluate the structured skills transfer programme submissions in procurement processes. Use the shared service or municipal partnership opportunities to improve valuer capacity.

2	GIS is scarce municipal skills set	Develop municipal GIS resources. Use the shared service or municipal partnership opportunities to improve GIS capacity.
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Source: Author's own compilation.

8.4 OVERSIGHT AND MONITORING REFORM RECOMMENDATIONS

This thesis addresses the existing monitoring processes and mechanisms by CoGTA, both nationally and provincially, for property rates from an MPRA perspective. It also investigates National Treasury's oversight in so far as reviewing the use of geospatial municipal registers of properties for municipal transactional reporting, specifically reporting against the regional segment. This reporting segment requires locational references. The thesis's findings are that, in terms of the municipal register of properties, the current oversight mechanisms are inadequate.

8.4.1 Data checking oversight

The findings of this thesis emphasise the need for an appropriate monitoring agency, with adequate leverage to prompt compliance. The comparative analysis with the Netherlands in Chapter 6 investigates the mechanisms in place to manage this country's property data. The Netherlands views their property data as a national asset. The Netherlands maintains key national property databases with managed data integration, ensuring accurate valuation assessments with a high level of data and assessment accuracy. The property rates assessments are updated annually. The Dutch have a high degree of confidence in the resultant WOZ (property rates) values. One of the immediately recognisable success factors in the Dutch model is that the property data is interoperable and there are dedicated data custodians assigned to each of the key base registers. All of the input data subscribes to the Land Administration Domain Model (LADM) resulting in interoperable data. This data standard is used to manage the data quality of the input data including spatial data. The independent Waarderingskamer, (Council for Real Estate Assessment), enforces compliance with property data and valuation protocols and standards.

The user confidence in both the property data and the WOZ values is achieved through a mechanism for mandatory feedback¹⁴⁴. Any data user identifying unreliable data is required to feed back to the data custodian responsible for the respective base dataset. Data issues are logged as notations. The administrator of the respective dataset is obliged to investigate the correctness of the specific data and take the necessary remedial action as required. This mechanism emphasises that the more data users of a particular database, the higher the data integrity. If such a reform recommendation was adopted, users of the data in the municipal registers of properties could contact the respective municipality to correct any data issues, and this data would be rectified within a prescribed period.

¹⁴⁴ Refer to the legislative provisions under Section 6.2.3.

Despite the role of the municipal registers of properties providing coverage for property rates, the MPRA excludes any specific oversight of this coverage. According to Kathman and Kuiper (2018), the most important aspect for successful mass appraisal results is the quality of the data. An appropriate protocol was developed for measuring the quality of the registered property or object data (both primary and secondary object data) in the Netherlands. It is mandatory for municipalities to apply this quality assurance protocol at least annually and report the quality of their available data to the Council for Real Estate Assessment as a formal finding. South Africa has neither minimum data fields for property data nor any quality standards relating to this data.

8.4.2 Standards

There are MPRA standards endorsed by the South African Council for Property Valuers Profession. These are useful. However, it is unlikely that without an authoritative monitoring agency, these will have any meaningful impact towards standardising practices for property rates in South Africa. With the recommendation that the assembly and maintenance of the municipal register of properties becomes an in-house municipal function, all reference to the municipal registers of properties should be removed from these MPRA Standards. Reform recommendations to improve the coverage of municipal registers of properties and to adopt a property naming standard for the property records contained in the municipal register of properties and the municipal financial systems should be enforced through the SDI Directorate data standards. Adopting an appropriate standard for geospatial property registers in the SDI Act would reinforce the proposed regulatory reforms. In my opinion, without improvement of the oversight mechanisms, it is unlikely that practitioners responsible for the assembly and maintenance of the geospatial municipal registers of properties will implement the necessary remedial actions or proposed reform recommendations. The risk of non-compliance could be circumvented by the SDI Directorate. This directorate's responsibility is to designate structures and mechanisms for spatial data coordination. The thesis's finding is that municipalities should be designated as the custodians of the geospatial municipal registers of properties. Once this responsibility was formalised, municipalities would need to comply with the spatial data standards prescribed by the directorate.

Various options for an appropriate oversight agency are discussed in Chapter 5 of this thesis. The findings for a best fit monitoring model include criteria for an independent agency with the requisite influence to compel enforcement with both data and value quality standards. In the Netherlands, the Waarderingskamer (Council for Real Estate Assessment) reviews the draft values once the municipality or rating agency has prepared them. This independent council is staffed by professional valuers responsible for verifying the values determined by the modellers. This oversight function is exercised annually prior to the distribution of the updated WOZ values. The result of rigorous oversight is the high regard by all stakeholders of the accuracy of the WOZ values.

The operational finding supporting the recommendation for the mandatory deployment of a VRMS, irrespective of the municipal classification, is also reinforced as a monitoring finding. Seamless integration between the financial system and VRMS supports improved financial

sustainability for municipalities through promoting complete and correct property rates billing. More rigorous evaluation of the seamless integration between the VRMS and the financial system is, in my opinion, not merely an aspirational objective but a municipal revenue necessity. Monitoring and oversight by National Treasury and/or CoGTA should review the seamless integration between the VRMS and the financial systems. Without stringent version control and in the face of last-minute electronic changes to the digital version of the valuation rolls, there are risks that printed versions of the published rolls may differ from the electronic version uploaded to the municipal financial systems. This risk is mitigated through seamless integration between the systems.

Municipalities frequently accept final valuation rolls for certification, without planned time to review draft valuations in a draft valuation roll. Municipalities also, perhaps inadvertently, omit to demand the handover of their data from the appointed service provider prior to the project close out. This is a copyright infringement that should be countered through oversight. A key finding and specific reform recommendation addresses the prescribed submission of draft valuation rolls by valuation service providers to municipalities. This is identified as a necessary oversight mechanism for reviewing the draft values, identifying any potential shifts in tax incidence, and supporting the preparation of responsible differential rating tariffs for municipal budgets. Municipalities implementing new general valuation rolls should pay careful attention to the tariff modelling to avert any rates shocks. The review of the draft general valuation rolls provides foresight of changes to market value that may be countered through the application of responsible tariffs. The annual escalation of tariffs year-on-year is not recommended for the financial year when a new general valuation roll is first implemented.

Lastly, in terms of aligning categories of properties and tariffs, it is important to achieve alignment from the rates policy through Part A of the municipal registers of properties (current valuation roll) to the tariff resolution and tariffs raised in the financial system. Municipalities experience challenges with achieving this reconciliation and balancing. The formalisation of the API integration between the financial systems and the VRMS will render this monitoring report obsolete. This recommendation for the extension of the monitoring framework in Section 80(3) of the MPRA is provided as a useful interim measure until the seamless system integration is regulated.

Table 8.4 provides a summary of the key findings from a monitoring and oversight perspective:

Table 8.4: Monitoring and oversight reform recommendations

Findings with respect of monitoring reforms		
Ref #	Description	Proposed reform
1	There is no data checking mechanism when users query data accuracy	The Netherlands notations' system mandates users to query data accuracy with the nominated data custodian.

2	MPRA Standards	The South African MPRA standards are useful, but in the absence of an independent monitoring agency they may remain just useful. The MPRA Standards should be amended to exclude reference to the assembly and maintenance of the geospatial property registers. The municipal registers of properties should be assembled and maintained by the municipality themselves independently of the MPRA.
3	Standard for the assembly and maintenance of the municipal register of properties	SASDI is responsible for the development of standards for spatial data. The South African Geomatics Institute's Practitioners Guide is adopted as the initial standard for municipal registers of properties.
4	Copyright	All property data collected for the preparation and updating of the valuation roll belongs to the municipality and should be handed to the municipality once collected, or at the very least at the end of the contract. Copyright to be included in the monitoring framework - MPRA Section 80(3).
5	Extension of the monitoring framework, MPRA Section 80(3)	A proposed monitoring template for alignment of categories of properties and financial tariffs in municipal rates policies, valuation rolls, tariff resolutions and financial systems is adopted. Once the API's between the VRMS and the financial systems are operational, such a monitoring report will become obsolete.

Source: Author's own compilation.

8.5 CONTRIBUTION TO KNOWLEDGE AND SIGNIFICANCE OF THE RESEARCH

The key objective of this research is to consolidate a common understanding of the municipal register of properties as provided for in the MPRA. The municipal register of properties (Part A) is the current valuation roll or the general valuation roll together with the objection reviews, appeal board decisions and any supplementary valuation prepared following the general valuation roll. There is, or there should be, no differentiation between Part A of the municipal register of properties and the valuation roll.

The research critically assesses the current role of the municipal registers of properties and explores possible extended roles for this key property dataset. Resolving this misinterpretation is significant to the understanding of rating assessments and the maintenance of equitable rating practice in South Africa. The inclusion of geospatial requirements for the assembly and maintenance of the municipal registers of properties would enable this property database to become the central

property data hub in municipalities. This is conditional upon this function being adopted as a key internal municipal function rather than being outsourced.

Data interoperability is the prerequisite for sharing data, not just between internal municipal departments, but between municipalities, districts, provincial and national government. In terms of the adoption of and the prescribed use of naming standards, the extended 32-digit SG code is considered the best fit for the current circumstances in South Africa. Further standards should prescribe minimum datasets for the preparation of value assessments for rating purposes, as well as the mandatory quality checks to ensure the integrity of the input data. These benchmarks would also include careful monitoring and review of the completeness of the municipal registers of properties for rating coverage, as well as evaluation of the accuracy of the rating assessments for improving the efficacy of rating performance. Property rates is already an important own source revenue for municipalities generating between 25-30% of the own source revenue.

The investigation of the institutional arrangements between CoGTA responsible for the MPRA, National Treasury who provide policy guidance for sustainable municipal financial management, and the SASDI Act co-ordinated by their dedicated directorate responsible for coordinating the assembly and maintenance of spatial data begs urgent and constructive engagement. The key stakeholders should address the identified gaps and develop relevant reforms in collaboration.

A key assertion of this thesis is that while there are certain monitoring provisions, these are inadequate. Attainment of quality standards in respect of data inputs and data processes would unlock the potential to extend the role of the municipal register of properties to support financial reporting and the proposed aggregation of the municipal registers of properties to OnePlan or district level spatial planning. Once this phase is successfully achieved, the next iteration is to cascade the data upwards to provincial and national levels.

This research places considerable emphasis on the role of technology and e-governance where spatial data supports strategic policymaking and governance at all levels of government.

As with all research certain areas fell outside the declared ambit of this study. The following section identifies areas of future research.

8.6 AREAS FOR FUTURE RESEARCH

Researching the current role of the municipal registers of properties in South Africa identified various other related areas of investigation that merit future study. These include but are certainly not limited to the research areas identified in the following paragraphs. There is no prioritisation or any other qualitative criteria to the sequence in which these possible further studies are described.

8.6.1 An appropriate land administration model for South Africa

Research suggests that the initial land administration systems introduced in Africa were inappropriate for the local context (Franklin, 2012, Deininger *et al*, 2008). These land administration systems were not sustained. The land-to-people relationship in Africa is characterised by two schools of thought: the first argues that land policies should be rooted in a theory of social capital taking African traditional land tenures into account, while the second is that individualised land tenure systems are more effective and desirable (Franklin, 2012). Deininger *et al* (2008) state that while many African countries have adopted innovative, pro-poor land laws, the lack of capacity has limited their impact.

The adoption of the *Fédération Internationale de Géomètres* (International Federation of Surveyors Land Administration Domain Model) as the national spatial data standard is a documented option for South Africa (Tija & Coetzee, 2013). The advanced 'fit-for-purpose' land administration model is an alternative, with the Land Management Paradigm as the technical engine for the land administration system a further option. Other land tools providing for the principles, policies and legislation may also be considered for application within the South African context. The Global Land Tool Network, Food and Agriculture Organisation of the United Nations, World Bank and others have developed several options from simple checklists through to complicated models. Research into the most appropriate or best fit for the extension of the current municipal registers of properties into a formal land administration for South Africa requires further research.

8.6.2 Rationalising municipal reporting

Municipal officials express frustration over the multiplicity of reports measuring their various programmes and the impacts thereof. Provincial and national government officials criticise poor responsiveness and uncertain urgency by municipalities to compile and submit these oversight reports. This thesis identifies similarities between the Circular 93 reports submitted by the municipalities to National Treasury and the evidence required by CoGTA for their 'valuation to billing' reports. The Government Reporting Reforms Project is a collaborative effort between CoGTA, National Treasury and Monitoring and Evaluation to establish a singular, differentially applied set of indicators for all local government. The project involves data capture and reporting across the different spheres of government, from source through to submission and approval. The effectiveness of this shared data platform and central data repository is worthy of further investigation. It is recommended that this study include the merits of platforming all the available data off a geospatial platform.

8.6.3 Traditionally owned properties and the challenges of a single tax base for property rates

This thesis identifies the challenges of valuing and rating traditionally or communally held land, see Section 4.6.2. The MPRA provides for a single tax base, namely 'market value' for property

rates for all municipalities in South Africa. Other countries permit different tax base options and different taxes based on location and/or the land use, while some enable simplified techniques such as value-banding. It is proposed that the South African government revisits this policy decision (Franzsen, 2022).

The operational challenges with respect to traditionally owned land are analysed from the perspective of the Ingonyama Trust, KwaZulu-Natal, in this study. This study's limitations require further research incorporating a broader based study inclusive of other examples of traditional land holding institutions

8.6.4 Public Key Infrastructure and Blockchain

The investigation into land administration in developing countries was addressed in Chapter 3 with reference to the Rwandan Land Tenure Regularisation Programme (LTRP) that resulted in the registration of over 11 million land parcels, the issuance of 7 million certificates of title, as well as the establishment of the Land Administration Information System (LAIS) (Hughes, 2022). The Land Administration Information System is paperless, secure and fully interoperable. The technology utilises biodata, Public Key Infrastructure and blockchain technology. Authorisations and approvals are processed using Public Key Infrastructure and secured using blockchain¹⁴⁵ This aspect of land administration systems could possibly be considered for future research.

8.6.5 The valuation and rating of vacant land

While the issue of valuing and rating vacant land is considered a significant issue both locally as well as internationally, this is not the focus of this thesis. This aspect could possibly be considered for future research.

8.6.6 The impact of dysfunctional municipalities on the property values and property rates

Poor municipal governance impacts service delivery and may result in an escalation in civil disturbance. Additional research could consider identifying the criteria indicative of the material contraction of local property markets. Such research may provide guidance regarding the threshold whereby downward market trends are considered intolerable, that is the threshold whereby property values are materially compromised and the asset value of the rates base diminished. This may include factors such as the deliberate disinvestment by listed companies from a specific municipality, on account of inadequate service delivery, or the frequency of civil protests amongst

¹⁴⁵ Blockchain is a computer network designed to store short sequences of data, validate shared rules, and exchange economic value transparently. Blockchain technology enables the creation of an open, distributed ledger that records transactions efficiently in a verifiable, accessible, transparent, auditable and permanent manner.

other influencers. Such a study may equip both national and provincial government to be proactive in supporting vulnerable municipalities prior to the actual collapse of these respective councils.

8.7 FINAL REMARKS

8.7.1 Unified understanding about the municipal registers of properties as the current valuation roll

One of the goals of this study was to create a unified understanding of the functions and usefulness of municipal property records.

The current valuation roll is Part A of the municipal register of properties (underscore given by the author for emphasis). The valuation roll and the municipal register of properties are one and the same. Many times, this conceptualization is misinterpreted.

8.7.2 Current role of the municipal register of properties

Currently, South Africa's property rates are platformed from the municipal registries of properties or the current valuation rolls. The municipal registers of properties currently fulfil a narrowly defined function to provide coverage for equitable property rates as provided in the MPRA. This thesis examines the status of the municipal registers of properties from legislative, institutional and operational perspectives. A thorough analysis on the adequacy of the current monitoring and oversight is also included.

8.7.3 Expanded roles of the municipal register of properties

Spatial data infrastructure provides the enabling platform for municipal business processes. If data has a locational reference, it may be depicted on a map. Municipal jurisdictions are geographically demarcated with municipal services locationally orientated. The role of the municipal registers of properties could be enhanced through the prescription through the relevant legal frameworks that the municipal registers of properties be geospatial in nature. Effective land management is successful only if informed by adequate land information. This thesis advocates the extended use of municipal property registers for better land management and national planning in South Africa.

This thesis investigates the viability of expanding the function of the municipal registers of properties through providing a trustworthy single property data hub in every municipality. Successful financial transactional reporting would also be supported by such a comprehensive and accurate property data centre, where a location reference is required. This is known as regional segment reporting and is prescribed by National Treasury's Municipal Standards Chart of Accounts.

8.7.4 Reform recommendations

The emphasis on property data interoperability with the development of a standard naming protocol for cadastre as a key reform recommendation from this thesis. Data custodianship and the

need for institutional integration—or at the very least, cooperation—to advance data interoperability as a foundational property data standard are findings from the institutional investigation of the municipal property register.

This thesis asserts that SDI Directorate should lead the reform process towards developing a standard for the consistent assembly and maintenance of the geospatial municipal registers of properties. This function should be explicitly included in the Directorate's legislative mandate to coordinate all spatial data in South Africa. The identified reforms would include the recognition of municipal registers of properties as essential base datasets and the nomination of municipalities as their custodians. Data interoperability is achievable through the adoption of a standard for naming all properties uniquely. The current 21-digit SG code is insufficiently inclusive. The adoption of an extended 32-digit SG code naming standard is recommended whereby the original 21-digit code could be overlaid by extensions to enable the unique identification of sectional title scheme and sections, multiple purpose properties and, critically for the South African circumstances, unregistered properties or traditional tenure rights.

Reform recommendations include broadening the utility of the geospatial municipal registers of properties through the aggregation of the municipal registers of properties into district, provincial property information systems. These may be cascaded upward towards the assembly of a national property information system. Geospatial municipal registers of properties contain detailed property information that could potentially support a greater planning and assessment function in South Africa. This thesis recommends a more thorough investigation of the feasibility of using the aggregated geospatial municipal registers of properties to support planning initiatives for service demand and infrastructure at local, regional and national levels. Such contribution could improve the achievement of South Africa's national land governance objectives.

In conclusion the findings of this thesis indicate that, with certain legislative amendments, changes to institutional arrangements, careful review of operational workstreams and rigorous monitoring and oversight, geospatial municipal registers of properties may contribute a lot more than their present role of providing coverage for property rating. The role of the municipal register of properties should be elevated from providing coverage for property rates to the 'single version of the truth' for all property related business processes in a municipality and beyond.

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