

VULINDLELA - WARD 39 LOCAL AREA PLAN

AUGUST 2018

MSUNDUZI MUNICIPALITY



Prepared for:
Msunduzi Municipality

Economic Development Services

333 Church Street
Pietermaritzburg, 3201
TEL: 033 392 3000 / 2490



Prepared by:



Isikhungusethu Environmental Services (Pty) Ltd
Leaders in Professional Support to Local Government
Working Together in Planning and Development

P.O. Box 13919, Cascades, 3202
Ph: 082 9261 348 Fx: 086 6505 034
Email: admin@isik.co.za

Acknowledgements:

Project Champions from Msunduzi Municipality:

♦ George Lebelo ♦ Narain Singh ♦

Ward 39 & Vulindlela Ward Councillors

Members of the Ward 39 Project Steering Committee

Msunduzi Municipality - Environmental, GIS and Planning Officials

Traditional Council representatives

WARD 39 LOCAL AREA PLAN: EXECUTIVE SUMMARY

1. BACKGROUND

Ward 39 was promulgated by the Demarcations Board in 2016 and represents a 135km² extension to the area of jurisdiction of the Msunduzi Municipality on its western boundary and forms part of the Vulindlela Management Area. Ward 39 adjoins the areas administered by the municipalities of Impendle to the north-northwest, Dr Nkosazana Dlamini-Zuma to its west and south, and Richmond to its southeast. This new ward comprises portion of the ex-Ingwe municipality ward 7, together with lesser portions of what was Msunduzi's wards 7 and 8. The majority of the ward comprises the ex-Ingwe component.

Land in the ward is predominantly owned by the state and by the Ingonyama Trust Board. ITB land in the northeast is administered by two traditional councils (TCs), i.e., Funze TC and Mpumuze TC (portions of ward 7 and 8 Vulindlela). Similarly, in the southwest of the ward land is administered by the Qadi traditional council. The land between these traditional areas is administered by the state and is largely un-occupied.

The settled areas located to the southwest include Mbambane, Ncwadi, Mdutshini, Songozini, Ezibomvini, Gudlintaba, and Maqadeni. The densely settled areas in the northeast formed part of Vulindlela prior to the 2016 ward boundary adjustments and include Songozima, Mafunze, Mbumbane and Mkheshekweni. There are scattered low density rural settlements in the central and western areas of the ward.

Ward 39 is situated adjacent to the western boundary of what was the Vulindlela Management Area. The project Terms of Reference recommends that Ward 39 be considered as an extension of the Vulindlela area and hence this plan is intended as an extension of the Vulindlela Local Area Plan.

The project included six phases. The preparation of the draft LAP was included in phase 4 of the project and this document comprises the final plan for Ward 39.

2. CHALLENGES

Based on the findings of the status quo assessment for ward 39 the following key challenges to future development of the area were identified.

2.1. Levels of Service, Including Housing

Ward 39 essentially forms an extension of Vulindlela and the most western part of this management area of Msunduzi. The ward is furthest of all wards from the economic hub and associated services within the Msunduzi municipal area (126kms return trip).

This area has largely been neglected in the provision of services and infrastructure. In addition, services are not proportionately distributed across the new Ward 39. The more formal or urban areas in the northeast (ex-Vulindlela) are better serviced and more connected than the peri-urban or rural areas in the southwest of the ward. The northeastern part of Ward 39, which essentially refers to the Mpumuza TC (ex-Vulindlela Ward 7) and the Funze TC (ex-Vulindlela Ward 8), are well endowed in

respect of services such as water provision, sanitation, some “RDP” housing and roads. In contrast, settlements in the central and southwestern sections of ward 39 at Deepdale and Ncwadi have limited water supply, no municipal-supplied VIPs, no formal housing development programmes and predominantly Department of Transport maintained gravel roads. This disparity in the provision of services is one of the core elements of the Ward 39 Local Area Plan.

2.2. Land Use

Land use in traditional areas of ward 39 is predominantly under settlement, livestock range land, limited cultivation and biodiversity conservation (Figure 1). In contrast, state land is predominantly used for traditional livestock, scrub wattle, limited low density settlement and fallowed arable areas of land. The number of dwellings located in the different area types of ward 39 are given in Table 1 below.

Figure 1. Traditional Authority Areas (DRDLR, 2015)

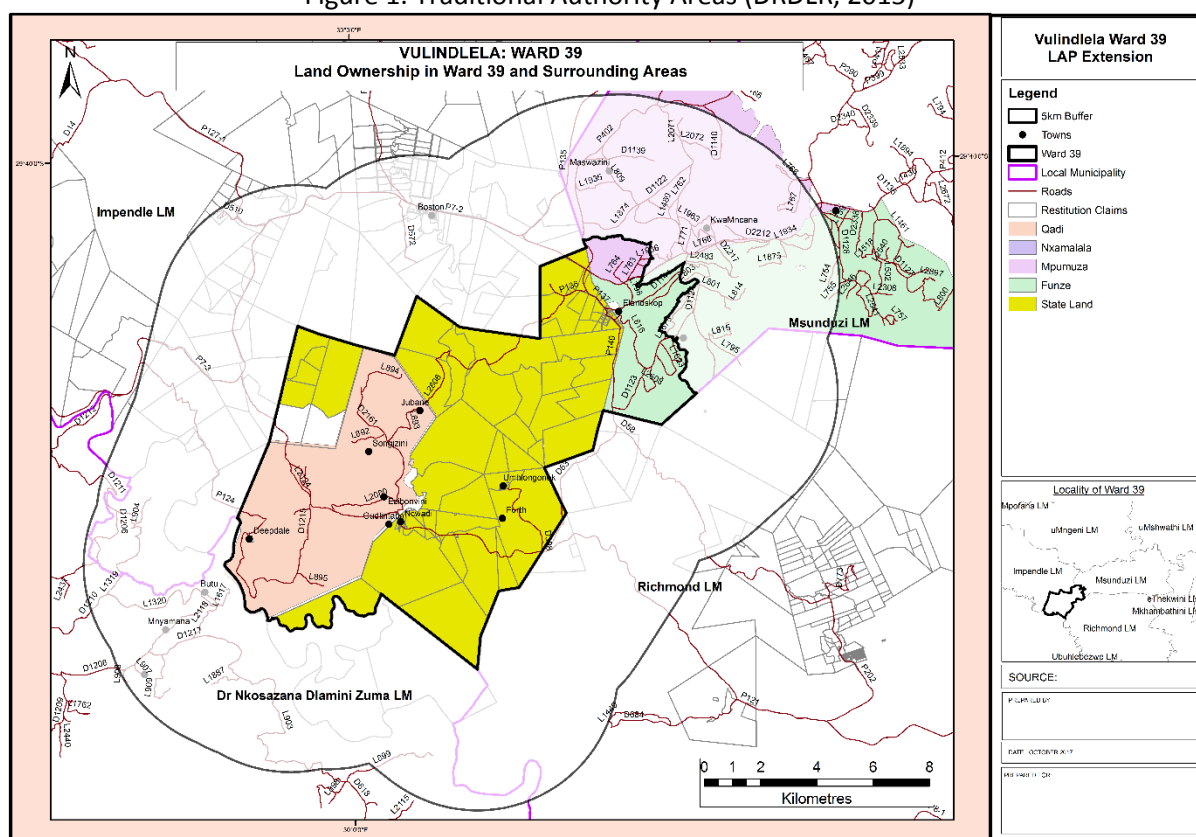


Table 1. Land Ownership (DRDLR, 2015)

Traditional Council	Area (Ha)	Dwellings	Percentage of Total Dwellings
Mpumuza TC	308	314	12%
Funze TC	1,221	1,083	42%
Qadi TC	3,671	813	32%
State land	7902	313	12%

Traditional Council	Area (Ha)	Dwellings	Percentage of Total Dwellings
Unknown	383	48	2%
Total	13,485	2,571	100%

2.3. Land Management

The Traditional leaders are responsible for land allocation within the *isigodi* areas under their jurisdiction, whilst Msunduzi Municipality is responsible for land use management. Owing to the history of Ward 39, a traditional form of land use has been practised in the area for many years. Increased demands for access to land and limitations on areas available, have resulted in *iziNduna* electing to allocate agricultural land for new settlement development. This has led to the loss of land for productive agriculture in Ward 39 and urban encroachment into open space areas. In addition, the area described as state land is under contestation: by the Dlamini but also by the Qadi community which states that the 32 farms were in the process of purchase in the 1800s. The matter is under investigation.

Land administration on state land is unclear at this stage. What could be established from discussions with extension officers in the field is that the Amakhosi in the ward are permitting livestock to be grazed on state land, but no settlement is being orchestrated by the traditional structures. It is also not clear how the existing residents of state land were allocated land.

2.4. Limited Economic Growth Options

It was not feasible to estimate the Gross Value Added (GVA) to the sub-regional economy by enterprises operational in ward 39 due to the paucity of economic information available. With only 14% of the Ward 39 population being employed, the indications are that it is primarily state welfare grants, income from migrant labour and indirect income generated from subsistence agriculture which sustain the local population. There is limited small scale commercial activity in the area, no manufacturing and no real evidence of a functional service or tourism sector, save for transportation.

The majority of the residents in Ward 39 have low levels of employment within the working age groups. Furthermore, income generated from employment appears to be lower than the national average and minimum wage determinations. The Provincial SDF maps appearing in Section 4 of the Status Quo report establish that this is an area in which social facility/ service provision falls below the level of existing population need/ requirement.

2.4.1. Business and Retail

Ward 39 is served by fewer than 30 retail outlets, largely shops, but with some taverns and bottle stores, and also a builder's yard (at the intersection of M70 and P137/P402). The total floor area of the functional establishments is approximately 1700m², this to serve a population of approx. 15000 in 2017. Typically, the shops are very poorly stocked and then largely with non-perishable items and these in small numbers over a narrow range. Elsewhere this report has noted that this is generally an

area of social need and it is thus not surprising for this to be reflected in the low buying power of the dispersed residents.

2.4.2. Agriculture

Agriculture, as identified in the 2016 IDP Review, has the potential to be an important land use and economic activity in Ward 39. Currently findings reveal that this is not the case due to a range of factors. Furthermore, whilst the area has good agricultural potential, realization of this is limited due to communal tenure arrangements, traditional farming practices, poorly developed infrastructure, lack of local capital and commercial farming expertise and uncontrolled settlement sprawl. Notwithstanding these constraints there are opportunities mentioned in section 7, but subject to different management practices and a commitment to transform to commercial forms of production.

2.4.3. Forestry

There is no evidence of large scale commercial forestry taking place in ward 39 at the present time. Forestry was practiced in a small part (in the northwest) in the past, but this now seems to have been replaced by “scrub wattle” which is used predominantly for fire wood and traditional housing construction. Ward 39 has the climatic and soil conditions for the establishment of commercial forestry. However, establishment and sustainable production of commercial timber requires farmer training and experience in this sector which takes many years to develop. Thus, there is forestry potential (soils, climate), but it is unlikely that the expertise, equipment and financial resources are available local to realise this potential without some type of external intervention. A further challenge is that the extension of commercial forestry into this area is subject to permitting by DWA. As far as can be determined the Umkomaas catchment is closed to further afforestation. Thus, it is only areas with approved permits where forestry could be established.

2.4.4. Tourism

In spite there being no form of tourism in Ward 39, this area has, as demonstrated in Section 4, landscape gateways and corridors with potential for development in this sector. The open areas lend themselves to mountain biking using existing game or cattle tracks, with some additional single-track construction in parts. The wetlands and scenic areas would be suitable for guided hiking trails which might link well with the conservation efforts in the Impendle Nature Reserve of which a lesser, but still significant, portion lies within this ward. There is also opportunity for cultural tourism in the traditional areas.

2.4.5. Smithfield Dam offset areas

Inundation by the Smithfield Dam (just upstream of the ward’s southern boundary) will have environmental impacts primarily of three types: The loss of wetland areas; the Critical Biodiversity loss of two categories, Critical and Optimal; and specific species of fauna and flora. In order to compensate for the first two of these mentioned losses, significant tracts of “offset” land will be set aside, by the water authorities, for conservation. The areas being studied, by consultants acting for DAFF in this matter, for such conservation fall within the envelope of “state land” (excluding that land already conserved within the Impendle Nature Reserve). It is believed that opportunity exists for the application of EPWP resources within these areas to enhance their conservation value and status.

2.5. Socio-economic Conditions

An evaluation of the socio-economic situation in Ward 39 revealed that:

- The majority of households live within Traditional Council areas.
- The majority of the population resides in the northeastern area, in particular within the Funze Traditional Council administered area.
- Densities in settled areas, with the exception of Funze and Mpumuza areas are relatively low.
- The population is a relatively youthful and simultaneously aged population.
- There are low levels of education.
- High unemployment levels.
- Historical population growth trends are relatively low in the Qadi area, but higher in the northeastern settled areas.
- A comparison with the Vulindlela report yields similar findings.

2.6. Settlement Patterns

It was established that the settlement patterns in Vulindlela, were similar to those in Ward 39 with settlements being rural, peri-urban and transformative in nature, generally as a consequence of dislocation from the centre owing to apartheid planning.

The bulk (98%) of the settlements are found in four areas, as detailed below:

- Mpumuza TC (portion of Vulindlela Ward 7), with 314 dwellings representing 12% of the total number of dwellings,
- Funze TC (portion of Vulindlela Ward 8), with 1 083 dwellings representing 42% of the total number of dwellings,
- Qadi TC (portion of ex-Ward 7 Ingwe), with 813 dwellings representing 32% of the total number of dwellings and
- State Land (portion of ex-Ward 7 Ingwe), with 313 dwellings representing 12% of the total number of dwellings.

The absence of major settlement on state land immediately adjoining the densely settled areas at Mafuze, Songizini and Mkeshekene demonstrates the dislocation principle outlined above. This is compounded by the inclusion of the relatively inaccessible and isolated (topographically) Qadi traditional area located to the extreme west of Ward 39 (approximately 63 km from Pietermaritzburg).

These additional areas are topographically and infrastructurally (excluding rail) divided from what comprised the old Vulindlela. Thus, for example, the extension of the Msunduzi bulk water system into the central and western areas of Ward 39 poses a challenge due to volumes, infrastructure, costs and distance. Similarly, topography limits the potential for improved road accessibility to Edendale and Pietermaritzburg. The historical rail link would be an ideal link if upgraded and restored to passenger transport, as argued in the Vulindlela LAP, but this does not form part of the capital investment priority of the government agencies involved.

2.7. Summary

As a consequence of the relative isolation of Ward 39 in terms of location, topography and history, opportunities outside of agriculture, tourism and human resources are insufficient to sustain economic development.

3. POLICY CONTEXT

The review of international, national and local planning and development policies was used to inform the planning process in Ward 39. The seven pillars of the Msunduzi Spatial Development Framework, coupled with key planning principles from national and provincial planning and environmental frameworks, were used to identify the following five measures for this plan:

- Access.
- Sense of place.
- Livelihoods.
- Space and structure.
- Regulation and control.

4. STRATEGIC DIRECTION

Based on the challenges identified in the status quo component of this project, careful consideration was given to finding a new strategic direction for Ward 39. This should enable the authorities to meaningfully deal with the above challenges in such a way as to meet the requirements of national, provincial and local planning policies and at the same time benefit the people of Ward 39.

The new strategic direction is based on the outcome of an analysis of the information collected in the status quo report. It makes provision for the continued use of KwaMncane as a secondary Urban Centre, as provided for in the VLAP, but with extensions to its west and south to accommodate future population growth. KwaMncane will be supported by the Ncwadi Rural Service Centre. These higher order and lower order centres in Ward 39 are intended to house the majority of the future population growth over the next 20 years.

These growth centres would need to be structured such that they include opportunities for public-private investment in the following sectors: industry, retail, social and utility services and a range of housing options and densities. The aim is to ensure that these centres provide opportunities for the people of Ward 39 to live and to work in local urban centres. This would allow them to benefit from higher levels of social and utility services and locally based employment opportunities.

It is argued in national policies that investment in high density urban areas is more cost effective and sustainable for municipalities than attempting to extend low level services throughout rural areas. Following these policies, the aim in rural settlements is to discourage further growth in housing. Just one of the reasons this is necessary is to maintain areas of good agricultural land for cultivation and livestock production as the economic basis of these areas. The emphasis in rural services provision should be to continue with basic service levels in identified rural areas. Once the new centres are established in Vulindlela, where households from rural areas seek higher order services and opportunities, they would then be able to locate into these areas to benefit from these opportunities.

Lands in rural areas which were historically used for cultivation and grazing have been identified and set aside in this VLAP for use by small holder farmers to expand their current operations with training and support from public and private sectors. The idea is for them to produce fresh produce and red and white meat for local markets primarily in the proposed centres. Provision is made in these centres for processing, packaging and marketing of agricultural products (food, timber, livestock etc.) for local consumption and retail in the wider region.

A further opportunity in rural areas is the rehabilitation of degraded open space using certain of the state funding mechanisms to create “green jobs”. Owing to the unique landscape qualities of this area and its natural features, there is scope, as mentioned above, for the establishment of different types of tourism routes through the area including landscape, hiking, mountain biking and cultural. This in turn would enable involvement of local communities in the guiding and hospitality industries.

In order for this strategy to be successfully implemented, it is necessary for the three main agencies responsible for land ownership, allocation and administration to work together and use the Joint Management Unit (JMU) established as part of the Vulindlela LAP and to be converted as part of the Special Purpose Vehicle initiative. This entity would be charged, and at the same time be authorised and properly funded, by the three agencies with implementation of the Local Area Plans. This would need to include adjustments to the traditional forms of land use management, particularly in and around the proposed new centres, where densities and proposed new land uses are not easily catered for in the traditional systems.

In the rural areas of Ward 39 where the emphasis is on sustaining agriculture and open space, adjustments will also have to be introduced into the traditional system of land allocation and municipal system of land use. This will involve defining limits to settlement expansion and internal sub-division of land. It will also need to include controls over use of agricultural land and open space such that these cannot be converted into further housing development.

5. SPATIAL FRAMEWORK

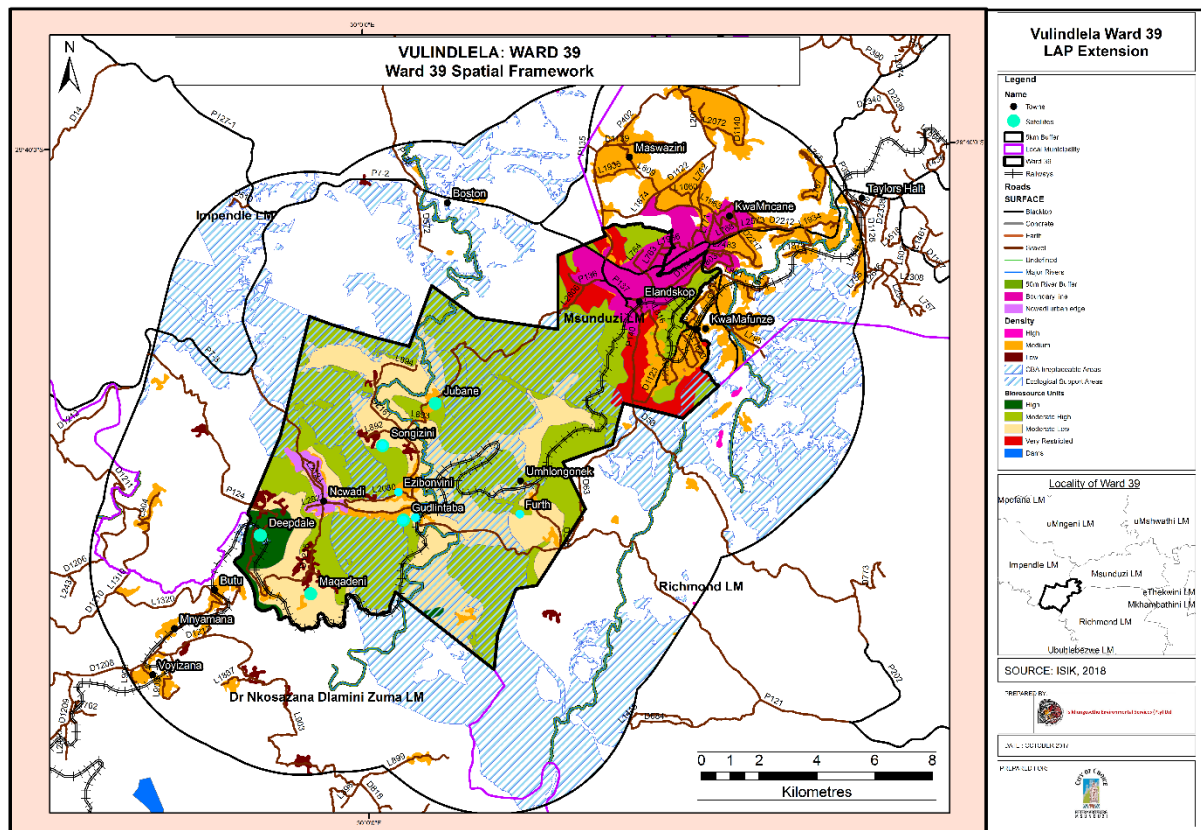
The spatial framework and associated guidelines necessary to achieve the transformation and development of Ward 39 are discussed in detail in section 6. Specific provision has been made for the proposed new centres in this plan in terms of broad land use zoning to inform future scheme preparation and to identify the types and levels of services that need to be provided in these areas. Owing to the inclusion of Ward 39 into Vulindlela, this has necessitated the review of the KwaMncane precinct plan since it has implications for the future development of the northeastern area of the ward.

In rural areas, provision is made for the controlled expansion of the proposed centres after 2033, should this be required, into adjoining high density settlement. In the medium- and low-density settlements, the focus is on limiting further population growth in order to promote the more productive use of these areas in food, plantation crop and livestock production and tourism and “green job” creation.

The proposed spatial framework for Ward 39 is included in Figure 2 below and provides an indication of the location of the following land uses:

- Open space and biodiversity.
- Cultivation, plantation and livestock production areas.
- Medium and low density rural residential areas.
- High density and upmarket residential areas.
- Urban centres inclusive of the full range of social and utility services with opportunities for investment by the private sector in retail, industry and different forms of high density housing development.

Figure 2. Ward 39 Spatial Framework



The land uses are linked together by Msunduzi Municipality's proposed "integrated rapid public transportation network" (IRPTN) and existing transport linkages in the form of road and rail. A further important integrating element is the Msunduzi Municipality's "open space system" which provides eco-system goods and services to the people of the sub-region and therefore needs to be rehabilitated and managed in a more sustainable manner.

6. PROJECT FRAMEWORK

A comprehensive project programme is provided in phase 4b of the planning process. This project programme has been developed as the basis for the implementation of the LAP. The project programme provides for project feasibilities, funding and implementation over the short-, medium- and longer-term. The projects included relate to the following key areas of the plan:

- Institutional arrangements.
- Communications and liaison.
- Intervention areas (centres) design and implementation.
- Infrastructure provision.
- Scheme preparation.
- Agricultural plan preparation and implementation.
- Open space rehabilitation and implementation.
- Tourism route establishment.
- Community and youth training.

7. MONITORING AND EVALUATION

The set of measures developed in phase 3 of the project (the assessment phase) is used as the basis for identifying performance measures and milestones that can be used to gauge progress with implementation of the plan. A table is included in the plan which could be used by planning officials working closely with traditional structures to identify key milestones as the basis for an effective monitoring system.

8. CONSULTATION

During the course of preparation of the plan consultation involved municipal ward councillors and officials, representatives of traditional structures, community development structures, municipal officials, line function government departments, para-state structures in energy and bulk water provision and selected non-governmental agencies operating in ward 39 and Vulindlela.

9. CONCLUSION AND RECOMMENDATIONS

In conclusion it is noted that the key stakeholders in Ward 39 have an important choice to make about the future of the area and its people. They could, on the one hand, adopt a “business as usual” approach where the challenges to the future development this area are *not properly* resolved. On the other hand, they could accept that, despite the challenges that development of Ward 39 poses, it nonetheless has opportunities and development potentials that have not yet been “unlocked”.

Accepting responsibility for pioneering change (particularly institutional) is what is required. This will require a range of new management interventions and strategies in order for the implementation of the LAP to succeed and to ultimately benefit the Ward 39 community and the wider sub-region.

It is against this background that the following recommendations are noted for the key roleplayers (Msunduzi Municipality, Traditional Councils and the Ingonyama Trust Board, and, importantly the state in its ownership of the vast majority of the land in Ward 39, which is under claim, as discussed in the LAP:

- (i) Accepting and adopting the LAP as the framework for future development of Ward 39.
- (ii) Committing to the use of Special Purpose Vehicle as the foundation institution necessary for the following:
 - a. Communicating and gaining support for the plan with community and traditional representatives at a “grass roots level”;

- b. Undertaking detailed planning, fund raising and implementation of the proposed development centres in Ward 39 and Vulindlela and all that this includes in terms of housing, services, job creation and land management;
- c. Working with local farmers in the preparation and implementation of an agricultural development plan for those areas of Ward 39 and Vulindlela where sufficient land is still available for production purposes;
- d. Raising funding for and commencing with the rehabilitation and ongoing management of open space systems in respect of Ward 39 and Vulindlela;
- e. Preparation of a “wall to wall” scheme in respect of Ward 39 and Vulindlela as the basis for effective land use management; and
- f. Provision of services in identified areas of Ward 39 and the generation of revenue from the proposed centres to cover operational costs of the JMU.

This ward clearly has intrinsic potential for positive development, in the northeast and southwestern areas in terms of densifying urban development. Unfortunately, there is an inherent conflict of interest in land use in these two parts of the ward since these are also the best arable land. Thus, any further unplanned settlement development in these areas will negatively impact on agricultural and water production potential of the ward.

Increased numbers of households resident on limited areas of land has led to increased settlement densification particularly in and around the KwaMncane area. To provide for increased settlement and densities, services will need to significantly improved. This will include access to well reticulated water, water borne sewage and improved transportation networks. The improvement and provision of services in Ward 39 will require significant budget allocation. The provision of the full suite of services to these remote areas needs to be considered carefully in terms of the long term sustainability of service provision.

As noted, future agricultural development and expansion will not be without its difficulties. Urban expansion onto productive agricultural land, which is extensively dealt with in section 8. The potential of the area is reflected in the contoured fields/ lands (largely for grazing) sculpted by the previous owners and visible in what is now the SADT area.

The real limitations around commercial agriculture in ward 39 are alluded to in the status quo and in the Vulindlela LAP. Until, and unless, these limitations are addressed either through land reform or a comprehensive extension service, sustainable commercial production is unlikely to succeed and will, as in the majority of land reform projects, revert to low level subsistence production. In order to limit the risks associated with expansion of urban development through land reform and/or land invasion, specific interventions to address enhancement in agriculture are needed.

It is noted in the *status quo* that fundamental to the future sustainable development of ward 39 is the question as to what productive functions this area can perform in relation to the whole (i.e. within the Msunduzi municipal area). There is limited potential to grow economic opportunities, which will require constant monitoring and review to limit further economic drain on municipal coffers.

Further fundamental issues relate to loss of agricultural resources through uncontrolled urban expansion, questions associated with effective land use management, institutional arrangements

designed to regulate development of the area and the costs and logistics associated with extending services to identified areas, especially those intended, by this LAP, for urban densification/ infill.

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1. INTRODUCTION

1.1. Background

In 2015 Msunduzi Council adopted the Vulindlela Local Area Plan (VLAP). Vulindlela is located on the western fringe of the municipal area and did not include Ward 39 prior to the 2016 boundary re-demarcation. The VLAP included the hierarchy of centres identified in the Msunduzi spatial development framework namely: Taylor's Halt as the main centre followed by Sweetwaters and KwaMncane as secondary centres. Following national and provincial policy guidelines, these centres or intervention areas were intended to accommodate Vulindlela's population growth in high density residential developments. The concomitant aim was to limit further rural settlement development with the view to providing higher order services in the main centres and, in the process, enabling local economic development allied to skills development in these new centres. The VLAP was used to indicate that planned urbanisation could lead to the emergence of local demand for agricultural produce and the establishment of small holder farmers operating in favourable agricultural areas of Vulindlela. This, in turn, prompted the need to protect remaining agricultural and ecological resources from further urban sprawl. The establishment of KwaMncane as a centre to accommodate population growth and services requirements in the most western extremity, of what was then Vulindlela, was based on the densification of existing settled areas owing to topographical constraints and the need to protect agricultural land. The VLAP did not include development in what is now Ward 39, but was then part of the Inkosazana Dlamini Zuma local municipality.

In 2016, the Demaractions Board effected certain amendments to the Msunduzi municipal boundary. One of those amendments had the effect of creating an additional ward, Ward 39, comprising parts of its former Wards 7 and 8 (in Vulindlela) but adding thereto an extensive area to its southwest (ex-Ingwe at that time), between Elandskop and the Mkhomasi River and bounded on the west and southwest by Impendle municipal area, on the southwest and south by the ex-Ingwe, now Dr Dlamini-Zuma municipality, and on the east by Richmond municipal area and as depicted at Figure 3. Isikhungusethu Environmental Services (Pty) Ltd was appointed to assist the Msunduzi Municipality in preparing a Local Area Plan this new Ward 39.

Ward 39 now an integral part of Vulindlela. The local area plans for Vulindlela and Ward 39 were prepared at different times and in different contexts. Consequently, they stand as individual documents in their own right with the alignment taking place in the Ward 39 LAP. Consequently these two plans should be "read" in conjunction with one another for implementation purposes. This applies particularly to the KwaMncane-Elandskop precinct where a revised plan (i.e. to that in the VLAP) has been prepared for this area to better accommodate planned growth and development in this part of what has now become a merger between Ward 39 and Vulindlela.

In the Ward 39 LAP, the two centres or intervention areas identified for development include KwaMncane (in a revised format) and an upgrade of the embryonic centre at Ncwadi in the Qadi traditional area. The revision of the KwaMncane plan from that contained in the VLAP involved extending the footprint of the planned centre westwards onto Ward 39 state land inclusive of the Elandskop station. The detail of this revision is included in this section of the Ward 39 spatial framework.

Although Vulindlela has a strategic role to play as a “gateway” to the province’s capital city, Pietermaritzburg, the majority of Ward 39 is less attractive, for in-migration, than the eastern portions of Vulindlela. In the east of Vulindlela on the Funze and Mpumuza land where there are greater opportunities, especially for employment, than those inherent in the Qadi traditional area. In the vicinity of Elandskop some areas approach a residential density of 15 units/ha. Consequently there is a need for clear directional planning as this density is likely to increase in future to accommodate burgeoning population pressure in this area.

One of the features of Vulindlela is its natural beauty and hence the potential to create a part of the city, in the future, which will be an attractive place to live, whilst at the same time affording opportunities and access to daily needs and economic livelihoods for its residents.

1.2. Structure of Document

This document represents the local area plan for Ward 39, an extension of Vulindlela.

Section 1	Project scope of work, method and location of the project area
Section 2	Review of national, provincial and local planning policy frameworks with the emphasis on the implications for the ward
Section 3	Summary of the situational assessment included in the <i>status quo</i> analysis
Section 4	SWOT analysis, challenges facing the area, development scenarios and a vision for the ward's future
Section 5	Spatial framework underpinning the Local Area Plan
Section 6	Intervention Area in respect of Ward 39
Section 7	Planning guidelines for the rural areas
Section 8	Institutional arrangements for the implementation of the Local Area Plan
Section 9	Project implementation programme, including intended capital projects
Section 10	Implementation monitoring framework

1.3. Scope and Scale of Ward 39 Local Area Plan

1.3.1. Structure of the Project

The Ward 39 LAP project comprises six phases. Phase 1 involved the project inception with phase 2 dealing with an investigation into the *status quo* which resulted in the Vulindlela Local Area Plan Status

Quo Report. In phase 3, the findings of the *status quo* were assessed, the formulation of goals and objectives were formulated, and the vision prepared. This document comprises the spatial framework for Ward 39 (phase 4 of the project) and is based on the findings of phases 2 and 3 of the project. A level of consultation was undertaken by virtue of the very composition of the project steering committee, but additional pre-phase 4 consultation was undertaken both with the Qadi Traditional Authority (new to planning with Msunduzi municipality) and the public at two well attended meetings in February 2018. Consultation on the LAP's proposals took place during phase 5. Phase 6 involves the adoption of the LAP by Msunduzi Municipality Council.

1.3.2. Scope of the LAP

The main purpose of the LAP is to provide a spatial framework which can be used by the municipality, with the support of the respective traditional councils, together with the SADT (as the land-owner pending decision on the land claims ¹ for the majority of the area) to guide local level spatial and statutory planning. The intention in this planning framework is to provide concepts and guidelines that can be used to achieve sustainable spatial development within the ward whilst developing its relationship with Vulindlela and Pietermaritzburg city to the east.

The LAP, as a framework plan, is intended to guide land use planning and the provision of services by institutions and government departments within municipal area. The LAP is intended to provide a powerful statement to give direction in decision making. The point of departure, based on the principles in SPLUMA, is as follows:

The LAP should provide a powerful statement to give direction in decision making. The point of departure based on the principles in the SPLUMA is as follows:

“striving to achieve a balance between maintaining biodiversity in the municipality whilst at the same time enabling development of the full potential of the area to be realised”

The LAP is a **conceptual framework and not a site specific plan**, and has the following roles:

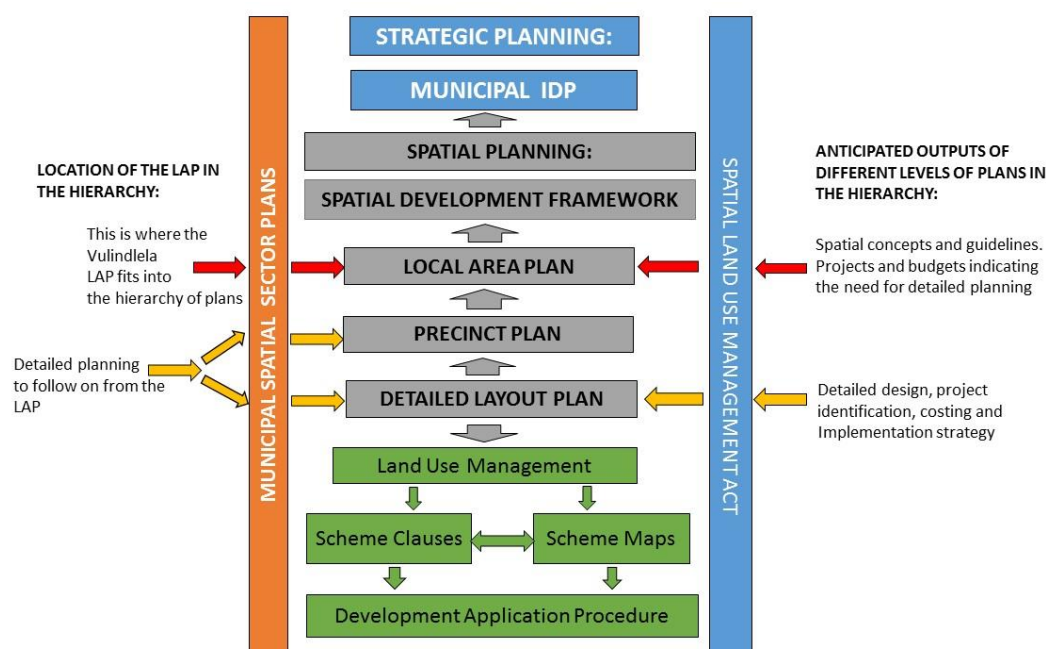
¹ It being noted that this land is contested space because, although one group (Bhidla) has lodged a claim, another holds that its historical attempts at purchase take precedence.

- (i) **Guiding role:** provides a useful set of guidelines for the Msunduzi Municipality to assist with the incorporation of the principles contained in the LAP into their local spatial planning processes.
- (ii) **Management role:** underpinned by legislation, this plan will provide the basis for the formulation of a set of land use controls to be applied by the municipality in its regulatory role in land use management.
- (iii) **Co-ordination role:** to enable alignment of spatial plans between the different areas of Msunduzi municipal area and surrounding municipalities.
- (iv) **Budget informing role:** to assist the different spheres of government with the planning of programmes and budgets towards an accepted strategic purpose.
- (v) **Spatial structural role:** to assist the Msunduzi Municipality to structure their space in a manner that integrates neighbouring municipalities in the district and region, and ensures that the principles of equity and sustainability are achieved.
- (vi) **Policy informing role:** the planning scheme developed in terms of SPLUMA, pursuant to this LAP, will be legally binding on this area.

1.3.3. The Local Area Plan in the Hierarchy of Plans

In terms of the hierarchy of plans envisaged in SPLUMA, the LAP is located between the spatial development framework (SDF) and the precinct plan (Figure 4, below). Thus the role of the LAP is to inform content of the intervention areas, and the subsequent development of detailed layout plans and schemes. The content of these plans should be the subject of the more detailed work prepared subsequent to the completion of the LAP. That subsequent level of investigation should give rise to formalisation of land rights, the establishment of cadastre, and the determination of cost for plan implementation and services provision.

Figure 4. Hierarchy of plans



1.4. Approach and Method

The planning approach used in the preparation of the LAP has been a “bottom-up” process driven and iterative in nature. The method used in this approach involved the following:

- Gathering information about Vulindlela and its inhabitants from:
 - municipal planning and related documents;
 - field work;
 - desktop review of literature and data sets; and
 - contact sessions with municipal staff, ward councillors, traditional leaders and community leaders.
- Assessing and analysing the material to establish informants and constraints to future development;
- Preparing a problem statement, together with vision and objectives, and which together indicate how the challenges should be overcome;
- Developing a regional and sub-regional context for the plan in the light thereof;
- Preparing a spatial framework within the sub-regional context to guide future development for interventions at a local level; and
- Integration of spatial data sets in order to arrive at a realistic and workable spatial plan.

At a more specific level, the methods used in identifying future centres (nodes) for development included:

- Ascertaining areas of land best suited to future development in each of the areas based on an interpretation of findings of the SDF, local economic development dynamics, location of

services and facilities, land ownership, population growth, developmental pressures, environmental assets, agricultural productivity, and broad land use zoning;

- Determining growth trends in population in order to gauge location of areas experiencing growth pressures;
- Reviewing the “generative power”² of areas under pressure to continue to grow in future considering the type and level of local economic activities, location on transportation routes, density of existing development, available land for future development, type and location of existing and planned social services and land rights arrangements;
- Comparison of the areas with high development energy with those identified as future nodes for development in the Msunduzi Municipality SDF Review (Msunduzi, 2015) to establish alignment or otherwise; and
- Identifying the relationships amongst:
 - proposed centres;
 - surrounding settlement;
 - land suited to different types of agriculture; and
 - areas which should be protected to enhance biodiversity.

1.5. Access to the Study Area

Ward 39 is located to the west of Vulindlela with the main access route being *via* Vulindlela along the M70 which traverses Edendale, Taylor’s Halt and Elandskop. This links with the R617 which provides access to Mpophomeni and Howick to the north and Bulwer to Underberg to the southwest. Connectivity to Richmond in the southeast is provided on gravel roads to Byrne Valley and Richmond beyond.

2. POLICY CONTEXT

The purpose of this section is to identify particular national, provincial and local policies relevant to the future development of Ward 39 as an integral part of Vulindlela. A review of these policies is particularly important given the challenges (relatively isolated and rural nature of Ward 39) that Msunduzi now faces in ensuring that Ward 39 plays a meaningful role in the development of the municipal area.

The section commences with a brief high level overview, to capture some of the international trends. A number of relevant themes have been identified, and the sections of plans selected have been extracted, in most cases *verbatim*, and the principles embodied in these plans will find expression in the Local Area Plan for the area.

2.1. Trends

In order to contextualise this and other plans, it is important to consider the impact of international, national and regional trends on regional and local planning which include the following:

- (i) Population growth;
- (ii) Economic globalisation and structural unemployment;

² A term used to describe the social, economic, population and resource growth potential.

- (iii) Climate change;
- (iv) Water scarcity;
- (v) Food security; and
- (vi) Sustainability

It has been established, as part of the international investigation into climate change, that the rapid rate of population growth and development has outstripped, and continues to outstrip, remaining natural resources available at local, national and global levels. It is imperative that the ecological footprint of human impact be managed and where possible reduced. This is necessary in order to limit further transformation of biodiversity at global, national and local levels. The state of the natural environment at these three levels has a direct impact on the quality of life of the world's population now and in future generations. Thus planning initiatives need to include as one of their major foci striving to achieve sustainability targets planning for and the management of land use and biodiversity.

These international guidelines on planning for future development are relevant at local and district levels and for some of them (green job creation, carbon sequestration, alternative energy, fossil fuel depletion and climate change) it is imperative that the phrase "*think global, act local*" form a guiding principle of local plans with respect to these global trends.

In South Africa, as with many parts of the world, there is a general trend of rural depopulation, particularly amongst the working age population, as people move towards urban centres in search of better opportunities. This increases pressure on the urban centres to provide essential services, particularly water and sanitation. Whilst the urbanisation trend is increasing in KwaZulu-Natal (Isik 2010) families tend to remain rooted in rural areas for a number of generations. This results in rural settlements remaining and, in cases growing, despite the working age population moving to urban areas. One of the explanations is that the older and younger generations predominantly occupy rural settlements with their working age counterparts returning when out of work or for weekends.

Among the resident population of Ward 39, as in any traditional area, there are increasing risks associated with local food production. These may be attributed to a wide range of factors including: fragmentation of productive agricultural resources; lack of conservation farming expertise; soil erosion; and loss of productive land to due urban sprawl. For local sustainability, the containment of urban and rural settlement sprawl is essential to protect the catchment (both water and land resources) and to leave sufficient space available for agriculture (in particular crops) to assist with ensuring food security.

Climate change is a global issue which needs to be addressed, in a very practical way in Ward 39-Vulindlela by looking at options for: carbon sequestration; finding localised renewable energy sources; local potable water collection and treatment systems; local food production and trade in this as a commodity; and the need to reduce travel and encourage local work opportunities. The importance of such responsible guiding development is reinforced by the National Development Plan ("NDP") as set out below.

2.1.1. Implications of the National Development Plan for the Ward 39 Local Area Plan

Development and strategic infrastructure provision in South Africa is guided by the NDP which was adopted in 2012/13, and is therefore a critical consideration in spatial planning. Sections of the NDP which are of particular importance to this plan are recorded here.

Table 2: Key issues in respect of the NDP

Key issue	Description
Urbanisation and the importance of settlement centres	The need for proper planning is based on a number of aspects. In terms of demographic trends, 60% of the South African population was living in urban areas by 2011. The NDP suggests that this percentage will increase to 70% by 2030. A further 7,8 million people will need to be accommodated in South African cities by 2030, and a further 6 million by 2050. This will bring about more pressure on municipalities to provide services (NDP 2012, 238). Recognising the importance of urban centres or nodes and the services they provide are therefore essential considerations of any future planning.
Increase in density	The NDP recognises that settlement patterns and settlement extension need to change. One of the intentions is to reduce the distance between employment opportunities and home. This will naturally require densification of settlements. The NDP also seeks strategic capital investment which will improve efficiency, particularly in respect of communication and movement. The influx of people into urban areas will create significant demands on settlement and town boundaries. An important planning tool to be used to balance and counter this notion is development of policies, plans and controls to limit urban sprawl
Land ownership patterns	The NDP also recognises that the distorted land ownership and land use patterns associated with apartheid still need to be addressed particularly in areas such as Ward 39. Securing land ownership in respect of Ward 39 is not presently possible, as the majority of land is either owned by the Ingonyama Trust Board or the South African Development Trust. Access to land is gained through different forms of communal tenure.
Accessibility	The NDP further recognises the importance of transportation of persons and goods as an important contributor to social and economic upliftment. Transport and access is therefore a critical factor in the improvement of the livelihood of people.
Structured infrastructure investment	There is a need for municipalities to adopt growth management strategies to prioritise infrastructure investment where growth is desired. This approach requires spatial plans to incorporate a growth management approach that will align areas of population and economic growth with investment in bulk infrastructure.

2.1.2. Strategic Integrated Programme

The National Infrastructure Plan (2012) had the intention of transforming the economic landscape, creating jobs and strengthening the delivery of basic services. Under the guidance of the Presidential Infrastructure Co-ordinating Committee, eighteen strategic integrated projects (SIPs) were identified throughout the country.

The SIPs which relate to Vulindlela developments are as follows:

→ **SIP 6: Integrated municipal infrastructure project**

→ **SIP 7: Integrated urban space and public transport programme**

→ **SIP 8: Green energy in support of the South African economy**

→ **SIP 11: Agri-logistics and rural infrastructure**

Improving investment in agricultural and rural infrastructure that supports expansion of production and employment, small-scale farming and rural development

→ **SIP 18: Water and sanitation infrastructure**

The projects arising from the WARD 39 LAP are aligned with these SIPs in order for the Msunduzi Municipality to qualify for funding for implementation thereof.

2.1.3. Planning Legislation

The planning legislation from which LAPs derive their direction, are embodied in a number of laws and policies already mentioned above such as the Municipal Systems Act (Act No 32 of 2000), the SPLUMA and the NSDP. A summary of the laws and policies pertaining to planning are included in Table 3 below. The common set of performance qualities or measures which underpin these laws and policies are central to an understanding of a spatially sustainable future in Ward 39 and Vulindlela.

Table 3: Summary of planning legislation and policies

Act / Policy	Summary of Relevant Legislation
Legislation	
Constitution of South Africa (Act No. 108 of 1996)	The Constitution sets the framework for all legislation stipulating the three spheres of government and who is responsible for various aspects of planning and development, among others.
Municipal Structures Act (Act No. 117 of 1998)	This Act established the “wall to wall” municipalities, the municipal councils and the internal structures, functions and powers of municipalities.
Municipal Systems Act (Act No. 32 of 2000)	This Act confirmed the municipal functions and powers, stipulating various procedures such as by-laws and internal legislative procedures. Chapter 5 set up the framework for IDPs and what regulations and guidelines should flow from tis.
Development Facilitation Act (Act No. 67 of 1995)	This Act is no longer in use, although the Chapter 1: Land Development Principles have been carried through into other legislation and are still referred to.
Spatial Planning and Land Use Management Act (Act No. 16 of 2013)	This Act provides for a framework for spatial planning and land use management in the country; it specifies the relationship between spatial planning and land use management system and other kinds of planning; it provides for inclusive, developmental, equitable and efficient spatial planning in the different spheres of government, it provides a framework for policies, principles, norms and standards for spatial development planning and land use management; to create greater consistency and uniformity in application procedures and decision-making by authorities responsible for land use decisions and to provide for the establishment, functions and operations of Municipal Planning Tribunals.
Municipal Finance Management Act (Act No. 56 of 2003)	The purpose of this Act is to secure sound and sustainable management of the financial affairs of municipalities and other institutions in the local sphere of government.

Act / Policy	Summary of Relevant Legislation
Municipal Demarcations Act (Act No. 27 of 1998)	This Act provides for criteria and procedures for the determination of municipal boundaries by an independent authority.
National Building Regulations and Building Standards Act (Act No. 103 of 1997)	This Act provides for the promotion of uniformity in the law relating to the erection of buildings in the areas of jurisdiction of local authorities and for the prescribing of building standards
SPLUMA KZN Draft By-Laws (2015)	These draft by-laws have been provided to local municipalities for adaption and adoption as their own internal regulations and by-laws governing planning and development applications, procedures etc.
SPLUMA Regulations (Government Gazette 597, no. 38594) 23 March 2015	These regulations set out various stipulations for municipal planning tribunals. Land development and land use applications, appeals, exemptions etc.
Housing Act (Act No. 107 of 1997)	Provides for the facilitation of a sustainable housing development process and to lay down general principles applicable to housing development in all spheres of government; to define the functions of national, provincial and local governments in respect of housing development.
National Development Plan: Vision for 2030 (2011)	The NDP was drawn up to chart a new direction for the country's development in terms of the changing needs of the 21 st Century and the need to address some of the burning issues still prevalent such as poverty and spatially divided communities, as well as addressing some of the global trends as they find expression locally.
Subdivision of Agricultural Land Act (Act No. 70 of 1970)	Replaced by the Subdivision of Agricultural Land Act Repeal Act of 1998. The intention of this Act is to control the subdivision of agricultural land and matters connected to this.
Traditional Leadership and Governance Framework Act (Act No. 41 of 2003)	This Act provided for the recognition of traditional communities and for a statutory framework for leadership positions as well as the functions and roles of traditional leadership. It set out traditional leadership roles and functions in relation to land allocation and administration which needed to be done in consultation with municipalities as part of the cooperative governance framework. This is national legislation.
KZN Traditional Leadership and Governance Act (Act No. 5 of 2005)	This Act gave provincial expression to the National Traditional Leadership Governance Framework Act, providing greater detail as to the structures and functions of KZN traditional leadership.

Table 4. Summary of planning legislation and policies

Policy	Summary of relevant legislation
Policies and guidelines	
KZN Provincial Growth and Development Strategy 2011	The PGDS sets out the Province's commitment to achieving the vision of KZN as a prosperous province with a healthy, secure and skilled population, acting as a gateway to Africa and the world. It aimed to build this gateway by growing the economy for the development and improvement of quality of life for all people in the province. It provides for a strategic framework to achieve accelerated and shared economic growth through catalytic and developmental interventions, with a coherent equitable spatial development structure and building sustainable communities, livelihoods and living environments.
KZN Provincial Growth and Development Plan 2011-2030	The PGDP sets out seven strategic goals for the Province: job creation, human resource development, human and community development, strategic infrastructure, environmental sustainability, governance and policy and spatial equity.
Provincial Spatial Economic Development Strategy 2006	The PSEDS looked at the spatial expression of an economic development strategy for the Province. It strongly endorsed the NSDP directives concerning limiting urban and rural settlement sprawl in order to provide more cost-effective and sustainable services, and to provide for economically sustainable human settlements.
National Spatial Development Plan (2006)	The NSDP provided a clearly articulated set of spatial priorities and criteria to guide government choices about investment and development spending. It considered the national space economy and developed the NSDP as a critical instrument for policy coordination with regard to the spatial implications of infrastructure programmes at national, provincial and local government levels.

Source: eThekweni SDF Review 2014/15 (adapted for the VLAP by Isikhungusethu, 2016)

2.1.4. A set of Performance Qualities/Measures

A set of well-established performance qualities should give direction to the LAP. The qualities have evolved over time and are embodied in national and provincial planning legislation such as SPLUMA and the MSA. It is a legal requirement that the directives contained in these pieces of legislation be carefully considered in any planning or development initiative in Ward 39.

The qualities contained in these pieces of legislation are interlinked, and influence each other. It is important to note that they cannot be applied individually, or mechanistically, or converted into a rigid set of rules. The key performance qualities that provide a foundation for the Ward 39 LAP are elaborated as follows.

Table 5. Legislation import

PRINCIPLE	DESCRIPTION
SUSTAINABILITY SPLUMA (Section 7(b))	An important consideration is the long term view, reconciled with immediate needs, that is embodied in this quality of spatial sustainability. It is also inclusive of both local and national interests and resources so that all current and future costs of both public and private initiatives are taken into consideration. It is common practice to count only the direct and immediate costs in development and infrastructure projects, whilst excluding most of the indirect ones, such as costs to the environment, longer term impacts on transport costs and so forth.
EFFICIENCY SPLUMA (Section 7(c))	It is important that maximum benefit be derived from every rand of capital expenditure both private and public, and that where possible, investments support one another to achieve effects that are greater than the sum of the parts. Infrastructure particularly that which amounts to a large portion of annual expenditure, should be located where its use can be optimised.
EQUITY	<p>Equity in spatial structure implies that all inhabitants have reasonable access to the opportunities and facilities which support living in settlements. It is neither possible nor desirable for all parts of settlements to be the same, in the sense of being provided with the same level of social services and commercial and economic activities. So the principle of equity does not connect to uniformity, but rather equity of access.</p> <p>There is also a tendency for urban areas to be planned radially from a central point and this often results in a spatial structure which is inherently inequitable, with increasing numbers of poorer people being spatially and economically marginalised. Greater levels of equity can be achieved through the framework of a grid structure, where points of intersection of movement routes provide an intrinsic opportunity for services and facilities over time. Development at each of these opportunity points may vary, but a more equitable spread of opportunities and access to these, results from such a structure.</p> <p>It is important to ensure that each tranche of new investment is directed at meeting the greatest amount of need.</p>
INTEGRATION	<p>Planning tends not to consider systems in totality. It tends to be applied to issues in a silo manner and so cumulative or interactive impacts are not considered. Thus, integration implies a way of thinking about planning, about the whole, and a way of managing the budgeting and implementation process. There is a need for integration in many spheres: institutional, spatial, and financial, amongst others. Plans and budgetary processes need to be fully integrated and co-ordinated.</p> <p>Critical to the successful implementation of the Ward 39 LAP is the integration and co-ordination across government departments, each responsible for their budgets and programmes, especially the public capital investment programmes which have a profound effect on the development of the area (also highlighted at meeting with the Mayor and Amakhosi on 13 November 2017). Over time, increasingly consistent and integrated actions and investments should occur across scales of planning and across spheres of government, to ensure co-ordination and efficient use of resources.</p>
RESILIENCE SPLUMA, Section 7(1) p.15	Resilience derives from generality, implying that planning is not directed only at a specific set of unique circumstances prevailing at a point in time. The best systems are structurally neutral, and able to adapt to changing situations.

2.1.5. SPLUMA Requirements of SDFs

Sections 20 to 22 of the SPLUMA set out the requirements and procedures for municipal SDFs. Section 21 includes 16 specific requirements, including adherence to the principles set out in Chapter 2

of the Act. In the preparation of the Ward 39 LAP, these requirements have been imbedded into the future spatial structure of Ward 39.

2.1.6. Rural Development and the Role of Traditional Leaders

The NDP promotes better integration of the country's rural areas into the space economy of South Africa. It argues that this should be achieved by developing rural economic opportunities to sustain long term growth. One of the key components that needs to be considered in rural development involves transforming human settlements which is a large and complex agenda with far reaching policy implications with shifts in household, business and institutional practises. In Ward 39 and Vulindlela, this applies most particularly to traditional institutions associated with land use and land allocation.

One of the key elements associated with promoting sustainable development involves enhancing institutional capacity in rural areas especially reforms to resolve contested relationships between indigenous and constitutional institutions. Such reforms should involve:

- Promoting better land use practises in traditional areas; the role of traditional structures will come under scrutiny when new urban and agricultural proposals are tabled for implementation.
- Overcoming accessibility to land through introduction of undifferentiated forms of land use and land rights.
- Work with traditional structures to secure tenured rights in situations where economic development potential cannot be realised due to the communal rights issue e.g. securing finance for agriculture, housing development or business establishment.

Identifying mechanisms to resolve the challenges associated with use of traditional land for structured social and economic development. The aim in the establishment of such mechanisms should be to eliminate the ambiguity around the developmental role of traditional structures.

Allied to these implications are the policy imperatives included in the Medium Term Strategic Framework (National Treasury 2015). Included in Appendix 7 of the Medium Term Expenditure Framework are provisions which deal with pre-requisites for development in rural areas and include the following:

- Improved land administration and spatial planning **for integrated development in rural areas**.
- Sustainable **land reform** (agrarian transformation).
- Improved **food security**.
- Smallholder **farmer development** and support for agrarian transformation.
- Increased **access to quality basic infrastructure and services**, particularly in education, healthcare and public transport in rural areas.
- Growth of sustainable **rural enterprises and industries** characterised by strong rural-urban linkages, increased investment in agri-processing, trade development and access to markets and financial services – resulting in job creation.

The availability of service centres is therefore an important backbone of the NDP and plays a critical role in the future of Ward 39 and Vulindlela.

2.2. Provincial Policies and Plans

2.2.1. Provincial Growth and Development Strategy and Plan

The KwaZulu Natal Provincial Growth and Development Strategy (PGDS) was developed in 2011 and led to the KwaZulu Natal Provincial Growth and Development Plan 2011 – 2030 (PGDP) produced in 2014. The PGDP is informed by four main spatial principles that furthermore inform the provincial SDF. The four variables are:

- Environmental sensitivity,
- Economic potential,
- Social need, and
- Urban accessibility.

These principles are represented by a number of spatial factors. The areas where highest social need, high economic potential, low environmental vulnerability and low accessibility are identified as the high priority intervention areas.

It is important to note that the priority intervention areas identified in the VLAP also include the nodes identified in the 2011 PGDS as centres which have a significant role in growing the economy and forming the backbone for economic development and service delivery in the province. Msunduzi and uMngeni Municipalities have been identified as priority intervention areas owing to their strategic location on the N2 highway linking eThekweni municipal area with Gauteng.

The recognition of hierarchy of service centres is a theme that is found in the NDP and the PGDS and carried forward in the PGDP, as will be demonstrated later in this document.

2.2.2. Provincial Spatial Development Framework

Part of the PGDS is the provincial spatial development framework which sets out spatial principles, spatial variables and identifies priority intervention areas per district municipality. Various catalytic projects were identified within each district with the focus in Umgungundlovu District being on industrial, commercial and agricultural development to benefit the growing population in the district's major urban centres and adjoining traditional areas such as Vulindlela, and now Ward 39.

2.2.3. Agricultural Support Programme

It is important to be able to link with agricultural support programmes that are provided by either provincial or national departments. This ties in directly with the global imperatives of food security and climate change, promoting local agricultural initiatives and local markets. Such programmes include the following:

- The Comprehensive Agricultural Support Programme.
- The National Agricultural Production Strategy.
- The Million Trees Programme.
- Community seed production schemes.
- Agricultural Starter Pack Programme.
- The Veggie Tower Programme.

- Fencing programmes.

In addition, there are other programmes such as Working for Water, Working for Forests and Working on Fire which should be tapped into as they perform dual roles of controlling, for instance, alien invasive plants and thus protecting water supplies, as well as providing employment through the expanded public works programme known as EPWP.

2.3. Local Policies and Plans

2.3.1. Msunduzi Spatial Development Framework and Seven Pillars of the SDF

As the 2017 SDF review is still in draft format, the main informant to the LAP is the Msunduzi Municipality SDF Review (Msunduzi 2015). It is therefore important to understand the informants to the SDF development and the strategic directives contained in it and which should cascade into the Ward 39 LAP.

The SDF is based on seven pillars (Table 6) which form the backbone of sustainability for the future of Msunduzi municipal area, as detailed below.

Table 6. The seven pillars of sustainability

Pillar	Intervention
Global connectivity	Improved local, regional and national physical connectivity of the municipality <i>via</i> road, rail, non-motorised transport (NMT) and air transport, as well as bridging the digital divide with a strategy for enhanced ICT connectivity.
Productive systems	Developing a strategy for land release along the N3 corridor, reviving the CBD and other secondary and tertiary centres of economic activity, introducing new economic centres in previously neglected areas (particularly those previously considered “rural”), and making the most of productive agricultural land.
Ecological infrastructure	Enhancing the open space network in the city for improved natural service provision and ecological functionality, through the protection of formal and informal nature reserves, open spaces, enhancing linkages across catchments and increasing setback lines in key areas such as those adjacent to watercourses.
Sustainable transport	Spatially identifies and promotes an equitable movement structure across the city, through an enhanced public transport backbone (e.g. the IRPTN and possible future NMT routes) and by reviewing the functionality of the rail network.
Quality urbanism	Creating functional, well-serviced neighbourhoods, building a polycentric city structure with secondary major centres (such as in Edendale), identifying areas for future smaller sustainable urban centres, promoting densification and public place making in the aforementioned areas and along public transport trunk routes.
Social inclusivity	Identifying areas for new housing opportunities, areas where informal housing needs to be addressed and/or upgraded on-site, and areas requiring the equitable distribution of public amenities.

Pillar	Intervention
Sustainable services	Enhancing existing infrastructure based on findings per ABM, identifying areas for future infrastructure installations and mechanisms for achieving infrastructure-related efficiency through economies of scale (at densified urban centres and along key transport routes, using resource-efficient technologies where appropriate).

Source: Msunduzi SDF, 2015. p. 8 and 9.

Directives from the SDF are at the centre of the development of the VLAP include the following:

- The need to ensure integration of Vulindlela into the economic and social fabric of the Msunduzi municipal area;
- Connectivity *via* transport, job opportunities and ecological infrastructure (open space networks) and the Msunduzi River Regional Parkway;
- Identification of growth centres, interventions and striving for quality in urban form;
- Increasing densities to manage increase in population, particularly in respect of the identified centres;
- Enhancing infrastructure and the provision of sustainable services; and
- Land use management options which will support economic development.

The following is noted from the Msunduzi Municipality SDF:

“Vulindlela is currently a misunderstood area. It is viewed as a traditional rural environment, which in certain parts is true, however the majority of the area should be classified as a traditional suburb - much like other suburban areas within the Msunduzi context...Understanding Vulindlela as a suburban and not a rural area is the first step of its successful integration into overall municipal planning, and in successfully providing the needs, services and facilities to “complete” Vulindlela as a liveable settlement”.

(Msunduzi SDF, 2015. p. 21 and 22)

The quotation above has been adopted as a point of departure and has informed the approach used in the development of the Ward 39 and Vulindlela LAPs.

2.3.2. Climate Change Policy Strategy

Msunduzi Municipality adopted a climate change policy in 2014 and a climate change strategy in 2015. The policy sets out strategic responses to climate change with adaptive mitigating measures in respect of biodiversity, water resources, food security and agriculture, stormwater, waste, energy utilisation and transportation.

Of importance for the LAP are the goals which have been set as part of the strategy, and which must influence future planning to reflect these goals. It is submitted that the following goals need to be reflected in the LAP plans for the future:

- The protection of ecosystems and biodiversity resources.
- Water quality and management.
- Waste management and technology.
- Making infrastructure resilient against disasters.
- Stormwater management.
- Agricultural food security.
- Address inappropriate land uses.

2.3.3. Integrated Environmental Management Policy

The Msunduzi Municipality adopted an environmental management policy in 2015. The policy seeks to:

- Formulate and implement principles and underlying approaches supporting sustainable development within the Msunduzi municipal area
- Ensure access to natural resources and their sustainable use.
- Uphold the environmental rights as provided for in section 24 of the Constitution of South Africa.
- Formulate relevant approaches to address specific environmental issues in the Msunduzi municipal area.
- Conserving biodiversity.
- Priorities legal environmental responsibilities and raising awareness in respect of environmental legislation and compliance with such legislation.
- Facilitate responsible stewardship of resources within the municipal area.
- Building partnerships with other role players.
- Undertake continual monitoring, evaluation and empowerment of all primary growth points.
- Identify and implement best environmental practices and activities.
- Integrate environmental considerations in planning, construction and any other municipal function or activity and making informed decisions about the development of its citizens.
- Ensure that impact assessments are carried out for developments to reduce, prevent or mitigate against environmental and social impacts.
- Develop strategies to manage resources sustainably.
- Recognize the importance cultural heritage, and developing protection and enhancement strategies.

(Msunduzi Integrated Environmental Management Policy, 2015. pg. 8)

The policy includes specific measurable goals and targets in respect of the biophysical environment and the socio-economic environment. This creates a useful tool and critical base for the development of any plan. These goals and targets can be separated into strategic planning and implementation and monitoring actions. It is important to ensure that the strategic directives be encapsulated in the LAP. The following is submitted as important in this regard:

- The creation of an open space system.
- Compliance with the commercial forestry guidelines.
- Green awareness and programmes.
- Sustainable use and management of water.
- Rehabilitation programmes.

- Protection of the viewsheds and landscapes.
- Waste management planning.
- Protecting and managing environmentally sensitive areas.
- Recognition of the role small businesses in respect of the city's economy.
- Importance of cultural heritage.

A review of the *status quo* and the content of the LAP will reveal that this has formed part of the analysis and the long term planning for the ward.

2.3.4. Summary

The above legal and policy framework forms one of the main cornerstones of the LAP and informs the nature and content of the *Status Quo* assessment, and the associated planning framework and how this area should be integrated into Vulindlela. The NDP and SIP programmes, *inter alia*, recognize the importance of urbanization, the importance of connectivity, environmental management and integrated infrastructure development. The KZN PGDP recognizes that Vulindlela and Ward 39, as previously mentioned, are socially and economically disadvantaged areas. Once adopted by Council, this document will be the strategic and political recognition that Ward 39 needs to be supported through resources and active programmes to develop the area in a bid, over time, to secure equity.

The above critical strategies are underpinned by a legal framework which must be considered and followed during the development of the LAP.

3. SITUATIONAL ANALYSIS

The purpose of this section of the Ward 39 LAP is to summarise the findings of the situational assessment in phase 2 of the project (*Status Quo* Report) to inform the formulation of the Ward 39 LAP.

3.1. Components of the Situational Assessment

The following components were considered in the assessment of the *status quo* of Ward 39:

- Ecological infrastructure** – the need for future development to safeguard against further transformation of the biodiversity and agricultural resources due to the expansion of settlement and different forms of agriculture and generating income opportunities for green job creation through rehabilitation programmes.
- Accessibility and services** - in terms of sub-regional location, transportation networks, economic opportunities, infrastructure and social services.
- Land allocation and land use** - challenges in terms of access to land, land ownership (ITB and state) and the informal system of land allocation and land use management.
- Dwelling and population dynamics** - challenges in terms of accommodating growing numbers of dwellings and people in high demand areas and controlling sprawl from intrusion into potentially productive agricultural and biodiversity areas.

- v. **Social issues** - high proportion of the population being in the low income and state welfare dependent categories, low levels of employment and limited prospects to turn this around linked to limited access to skills training, employment opportunities and lack of market information.
- vi. **Economy** - the economy of Ward 39, under current conditions is largely based on government interventions, limited agricultural activities and limited private sector investment. There is a need to identify opportunities for the diversification of the local economy.
- vii. **Cultural assets** - cultural heritage risks including cultural heritage sites and landscape features, view sites and gateways.
- viii. **Area management** - administrative management of the area, spatial planning and associated project implementation

3.2. Key Findings of the Status Quo Assessment

The following tables represent the key findings in respect of the *status quo* assessment in respect of the aspects considered.

Table 7. Accessibility and services

Key finding:	Difficulties with accessibility and services delivery
Transport network	A poorly defined transportation network in place with limited all-weather surfacing. Mountainous terrain hampers the creation of a lattice networks of roads for the majority of the area
Basic utility services	Basic utility services are more prominent in the Eastern portion of Ward 39. This includes water reticulation, and sewage disposal means of ventilated pit latrines (VIPs). The Qadi Traditional Authority in the southwest has an erratic water supply from a single functioning bore-hole. Msunduzi is planning to install 140 VIPs by the end of June 2018. Households in Ward 39 appear to be well supplied in respect of electricity.
Social services	Social service facilities are scattered and of a lower order.
Servicing costs	A lack of up to date spatial planning coupled with uncontrolled, informal settlement results in lengthy service lines and, in the process results in increased services provision costs and engineering challenges.
Topography	Topographical constraints for infrastructure development.
Economic development constraints and opportunities	<p>Economic development opportunities are limited by poor access influenced by steep topography, limited areas of serviced land available, infrastructure not suited to large scale development and a local workforce of low training and technical skill.</p> <p>There are however agricultural opportunities particularly with large tracts of unused state land with good agricultural potential which could be used for livestock, timber, crop cultivation. The climate well suited to different forms of agriculture. This economic opportunity is subject to appropriate levels of management and expertise, infrastructure provision etc.</p>

Table 8. Land allocation and land use

Key finding: Poor land allocation and land use practices	
Informal housing	Traditional land allocation system favours informal housing where land is available for informal residential allocation but less available to the more formalised large scale economic development.
Loss of good agricultural land	Progressive loss of good agricultural land and biodiversity due to the lack of a standardised zoning and land use management system across all traditional areas in Ward 39, more prominent in the more densely-settled eastern area.
Scatter of settlement - sprawl	Mix of high, medium and low density settlement scattered throughout Ward 39 – inefficiency in use of space and provision of services - no evidence of the notion of densification and urban or settlement edge definition. The construction of scattered new housing units in areas where services are not available entrenches inefficiencies. Significant residential densification initiatives in the Edendale and eastern areas of Vulindlela, in closer proximity to work opportunities, must be undertaken.
Location in high risk areas	Danger of certain housing being located in high risk areas (flood and unstable slopes).
Land allocation processes	Land use management by the municipality and continued land allocation by traditional leaders has the potential to lead to inherent problems. Msunduzi Municipality administers land use and service provision, whereas traditional leaders consider land allocation. Allocation cannot be separated from land use and hence this relationship requires further attention.

Table 9. Demographics: Population growth

Key finding: Population growth	
Population growth	Based on the 2006-2013 Eskom household data, the average population growth rate per annum is 1.9%. It must be noted, however, that the growth rate has increased significantly from 1.16% per annum in the three year period (2006-2009) to 2.61% per annum in the four year period (2009-2013). Based on current projections this will increase the current number of households from 2 571 to 4 682 by 2050 (2 111 additional structures or 82% increase).
Implications for service delivery	The rapid increase in population in certain parts of Ward 39 implies increased demands for service delivery, social services, open space facilities and burial sites, all which influence the environment.
Entry point to the city	It is anticipated that certain parts of Ward 39 (most accessible) are being used as an “entry point” for migrants who are wanting to gain access to the formal services economy in Pietermaritzburg. The more rural and less accessible rural settlements in Ward 39 are being used as dormitory areas housing the older and younger generations and those unable to find employment in the urban areas.
National urbanisation patterns	Following national and provincial trends, significant growth through natural increase and in-migration into South African cities is being experienced in Ward 39.

The need for planning intervention in Ward 39 becomes evident when viewed in the light of the following:

- Population pressures.
- Loss of biodiversity and productive agricultural resources.
- A high need for housing, social services, infrastructure provision and employment-generating opportunities.

Table 10. Demographics: social issues

Key finding:		Extensive social issues
Majority income	low	A high proportion of the population is in the low income and state welfare dependent categories.
Unemployment		Low levels of employment and limited prospects to turn this around are linked to limited access to skills training, employment opportunities and lack of market information.
Poorest sector of Msunduzi		Ward 39 residents are among the poorest people in the municipal area, having to travel the furthest and to pay the most to gain access to employment and services.
Low education levels		Low levels of education - linked in some way to large numbers and scattered location of schools in Ward 39 and possible impacts on standards of education provided.
High cost of access to services		Limited access to higher order services for the residents of Ward 39 owing to distance and cost. These services are mainly located in the inner-city and CBD of the city. Public transport for residents of settlements in the northeast is available to gain access to the CBD (Pmb), but it is long distance and costly for these residents. Those located in Qadi do not have direct access to the CBD (Pmb) and have only access to services provided in the small towns of Richmond, Impendle and Bulwer <i>via</i> public transport.
High proportion of youth		Youthful age profile with limited facilities to engage this age group such as sports facilities, internet facilities, entertainment outlets and post school training.
Crime risk		Security and crime risk linked to unemployment, limited SAPS presence in the area and a wide range of social issues.

Table 11. Biodiversity

Key finding:		Loss of biodiversity
Significant transformation		Large tracts of Ward 39 have been transformed by the expansion of settlement and by different forms of agriculture (subsistence, small scale, commercial and livestock).
Potential rehabilitation and protection of biodiversity	for and of	Despite the level of transformation there are, nonetheless, areas where biodiversity is still intact and where, with rehabilitation, these areas could be expanded to produce sustainable ecosystem goods and services to local communities. This includes the Ezemvelo KZN protected area (portion of the Impendle Nature Reserve) in the northwest.
Protect further transformation	against	The emphasis in future development of Ward 39 needs to be to safeguard against further transformation, particularly of the more sensitive areas.

Climate change influences	Improved management of biodiversity could have beneficial effects in the mitigation of certain of the impacts of climate change, in particular increased intensity of flooding events.
Historical protection of agricultural land	The area appears to have, historically, been subject to some form of planning and hence settlement has, in the past, been located on land less suited to agriculture. That is, the best agricultural areas were protected. However, over the past 15-20 years agricultural resources have come under pressure from settlement, particularly in the high density and high growth areas in the northeast which have not followed earlier planning and land use principles.

Table 12. Agriculture

Key finding:	Value of/ to agriculture
Agricultural opportunities	<ul style="list-style-type: none"> -The maize mill recently constructed in Impendle's industrial area represents an opportunity for local maize growers to sell their dried product -The abattoir recently built at Boston is intended primarily for pig slaughter: this represents an opportunity for local farmers -The area has at least 7 impoundments which could be used, along with additional irrigation infrastructure to improve production potential of this area.
Agricultural challenges	<ul style="list-style-type: none"> -The level and extent of erosion in a number of areas needs to be addressed as a matter of urgency -DAFF's reinstatement of its tractor-plus-implements support system for emerging farmers is urgent

Table 13. Economy

Key finding:	Current economic difficulties; significant future potential
Government sector dominated economy	The economy of Ward 39, under current conditions, is largely based on government interventions with limited private sector income and investment.
Agricultural potential	Ward 39 comprises land with high agricultural potential in the form of arable, plantations and livestock production. These high value agricultural resources, if consolidated and properly managed, could feed into local and district markets with the view to replacing costly imports thereby enhancing self-sustainability, the reduction of the carbon footprint and increasing money circulation.
Assets under threat	The economic development potential (assets) of the area appears to be under threat and possibly being eroded by inappropriate land use management practices.
Possibilities for turn-around	Based on a review of those assets in Ward 39 with economic development potential it would appear that, under different management regimes and changed local approaches, it may be possible to enhance the local economy as one of the key challenges to the future development of this area.

Potential for growth	Ample human potential in youth and working age population profiles. Incidence of local small scale entrepreneurs operating in the agricultural, production processing, retail and commercial sectors which, with appropriate strategic support, could be expanded and grown into local business ventures serving local and external consumers located in proposed development centres in Ward 39.
Tourism potential	Potential to develop a number of local features as a tourist destinations including water sports, hiking trails, landscape and cultural experiences.
Smithfield Dam Offset	The biodiversity and wetlands lost as a result of this dam will need to be compensated for, by way of “offset” land to be newly set aside for conservation within the ward. This has the potential to enhance this area as a tourism destination and also, thus, to provide a level of employment in those areas so set aside.
Green economy	Opportunities for green job creation through rehabilitation programmes by promoting the green economy.

Table 14. Management

Key finding:	Management
Implementation of the Joint Management Committee	<p>The implementation of the Joint Management Committee in Vulindlela has already commenced. It is critical that this be extended to include Ward 39 to ensure that the momentum continues, and that the management area is subject to the same control mechanisms. The Amakhosi in respect of Vulindlela gave their in-principle support for the implementation and extension of the Joint Management Committee at the meeting on 13 November 2017.</p> <p>Not ensuring the implementation of the Joint Management Committee will compound the existing negative effects of uncoordinated and unmanaged settlement of people and low provision of resources in the area.</p>
Signing of agreement pertaining to the Joint Management Committee	To ensure that the Joint Management Committee proceeds and that a terms of reference, determining apportioned responsibility is operationalised, it is recommended that a Memorandum of agreement, addressing these matters be prepared and signed by the parties concerned to facilitate implementation.

The *status quo* assessment of Ward 39 findings will inform the interventions to be implemented to overcome the central challenges identified in this part of the Msunduzi municipal area.

Table 15 summarises the *status quo* findings and the main areas where future intervention is required in the ward. These interventions coincide, and are aligned, with the seven pillars identified in the 2015 Msunduzi SDF review

Table 15. Status quo findings and directives for implementation

Issues	Key findings	Directive	Interventions
Accessibility and services	<ul style="list-style-type: none"> Challenges in respect of services. Cost of servicing due to topography and settlement pattern. Poor connectivity to the Pietermaritzburg city (126km return trip) 	<ul style="list-style-type: none"> Assess available resources and implementation methodology. Improve road and ITC connectivity. Cellular phone connectivity required. Improved water and sanitation. 	<ul style="list-style-type: none"> Improve cost effectiveness through higher density of development including, or primarily, residential.
Land allocation and land use	<ul style="list-style-type: none"> Different roles and authorities of traditional leaders and councillors in respect of land use management. Lack of settlement planning. 	<ul style="list-style-type: none"> Establish a joint structure to align, and manage, land use decisions. Determine settlement edges to contain growth and urban form. 	<ul style="list-style-type: none"> Establish a joint decision-making authority. Prepare a land use scheme(s) as the basis for land administration. Establish settlement edges for authorities to co-manage.
Population increase	<ul style="list-style-type: none"> There has been an increase in the population, partly in-migration. The number of households is projected to grow by more than 80%, to 4682 by the year 2050 	<ul style="list-style-type: none"> Identification of urban vs rural residential areas. Development of a densification strategy for the urban nodes. Development of settlement edges. 	<ul style="list-style-type: none"> Development of density controls in both urban areas (encourage) and rural areas (discourage), linked to services.
Demographics and social issues	<ul style="list-style-type: none"> Limited access to higher order services. Poor and youthful population with lack of economic opportunities. 	<ul style="list-style-type: none"> Identify intervention areas to create environment to establish services. Consider land uses to support local job opportunities, including youth. 	<ul style="list-style-type: none"> Establish intervention areas at nodal points. Land use configuration to support economic opportunity.
Protection of biodiversity and agriculture	<ul style="list-style-type: none"> Need to contain settlement expansion to protect agriculture. The need for a plan to protect and enhance ecological infrastructure. 	<ul style="list-style-type: none"> Develop strategies to protect agricultural practices. Develop strategies and plans to protect ecological infrastructure 	<ul style="list-style-type: none"> Development of a rural development strategy. Develop open space system linking with that for the rest of the municipal area.
Smithfield Dam offset	<ul style="list-style-type: none"> The biodiversity and wetlands lost as a result of this dam will need to be compensated for, by way of "offset" land to be newly set aside for conservation within the ward. 	<ul style="list-style-type: none"> Liaise closely with DAFF and its related service provider to determine the location of the lands to be so conserved and to which agency that responsibility should fall. 	<ul style="list-style-type: none"> Develop appropriate municipal responses so as to maximize the value (including employment opportunities) of/ contribute to this conservation initiative.

Agriculture	<ul style="list-style-type: none"> ▪ Loss of, and threat to, productive agricultural land by peri-urban sprawl 	<ul style="list-style-type: none"> ▪ Halt the loss of productive agricultural land 	<ul style="list-style-type: none"> ▪ Institute land use change controls and land use change and application and consideration processes, and apply these within the ward ▪ Substantially densify residential development in the northeastern section of the ward ▪ Substantially densify residential development in the Edendale and eastern Vulindlela areas ▪ Design an internal road network within the SDF- and Vulindlela LAP-identified Taylor's Halt and KwaMncane nodes for the creation of land parcels which can give effect to the nodal plan's land use categories.
Economy	<ul style="list-style-type: none"> ▪ Lack of economic development opportunities in Ward 39. ▪ Missed tourism and agricultural opportunities. 	<ul style="list-style-type: none"> ▪ Land use configurations to support economic opportunity development. ▪ Assess opportunities for tourism and agricultural growth. 	<ul style="list-style-type: none"> ▪ Land use plan recognising economic development needs. ▪ Make provision for manufacturing and agri-processing as the basis for sustainable local economic development. ▪ Establish tourism opportunities and corridors.
Area Management and project implementation	<ul style="list-style-type: none"> ▪ The ward is well managed by Msunduzi ABM. ▪ There is a need to extend the Joint Management Committee Institution, developed as part of the Vulindlela Local Area Plan, in respect of this ward. ▪ There is local support to extend the Joint Management Committee structure and programme, as determined at the meeting 	<ul style="list-style-type: none"> ▪ That the Joint Management Committee be formalised through the signing of an agreement between the Msunduzi Municipality on the one hand, and, on other, the Ingonyama Trust Board and the Traditional Councils, and, pending resolution of the Land Claims, the South African Development Trust. This agreement must include the Committee 	<ul style="list-style-type: none"> ▪ The Vulindlela and Ward 39 LAP must be the basis for development and land allocation throughout the ward, irrespective of land ownership.

	with the Vulindlela Amakhosi on 13 November 2017.	terms of reference and the apportioned responsibility when operationalised.	
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4. STRATEIGC DIRECTION

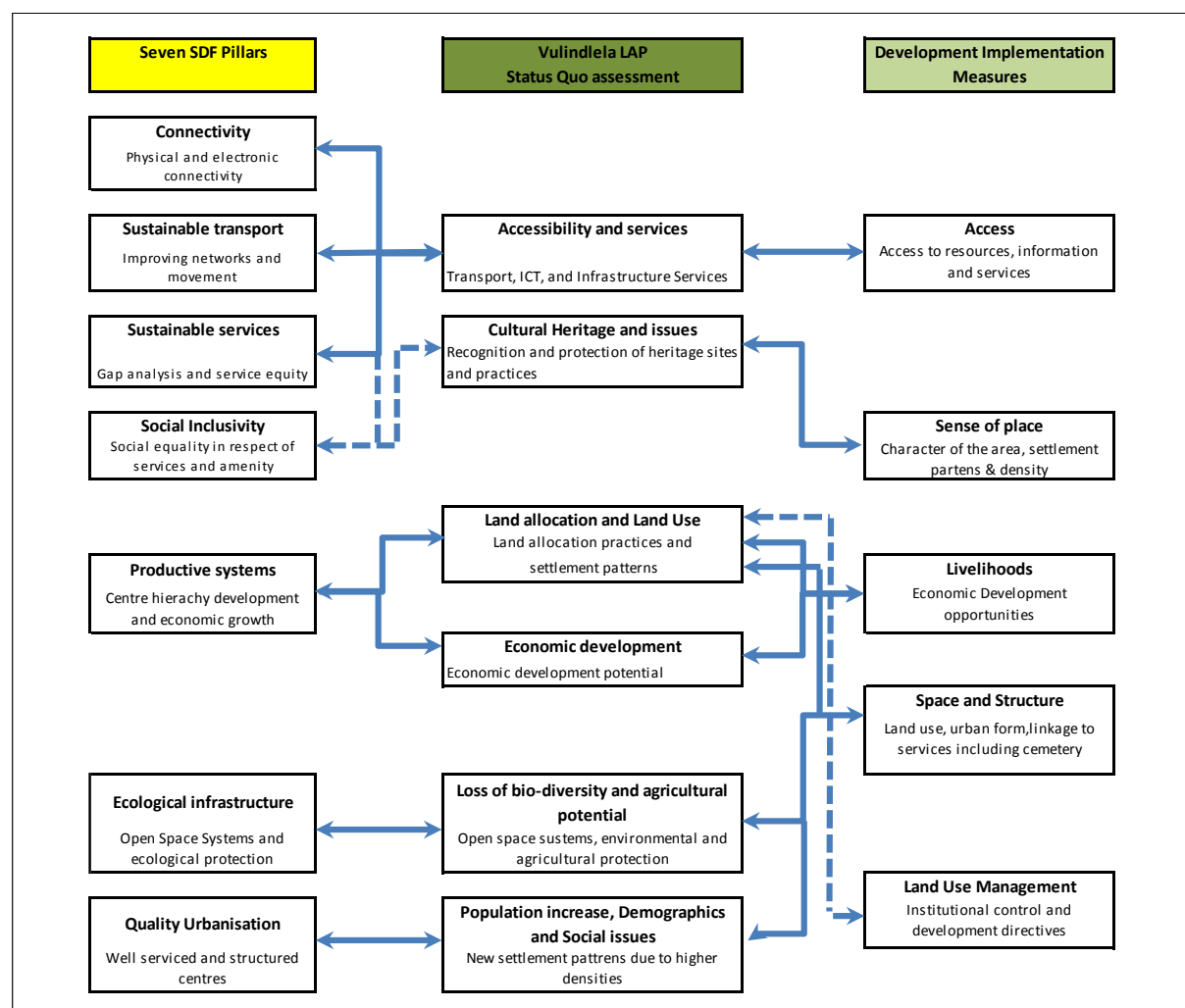
4.1. Introduction

The key findings and issues identified in the Ward 39 status quo analysis are aligned with the seven pillars identified in the Msunduzi SDF as per the figure below . A similar format to that which was used in the VLAP analysis of issues was undertaken for Ward 39 in order to ensure alignment.

This is necessary to ensure that planning and development interventions achieve compatible outcomes with those envisaged in the other management areas of the municipality.

Alignment of the SDF and status quo is provided in Figure 5 below where the seven pillars of the Msunduzi SDF are linked with the key findings identified in the *status quo* assessment in order to produce five development measures as the basis for the Ward 39 LAP.

Figure 5. Rationalisation and alignment of development measures/criteria with SDF and *status quo* assessment

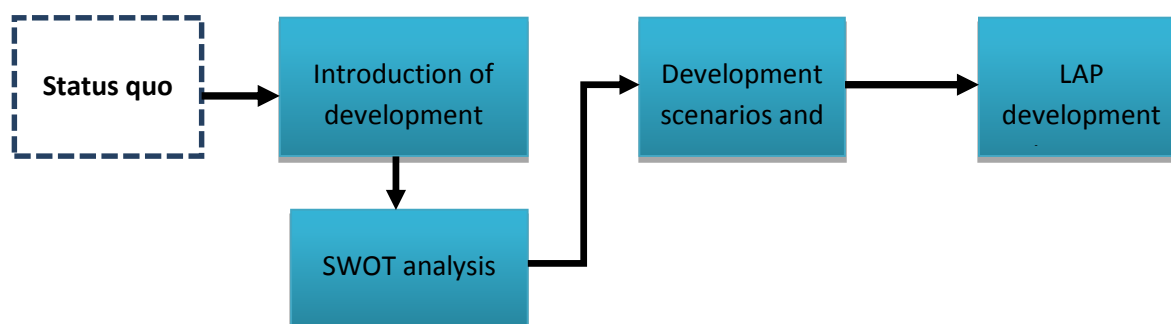


The five development measures are summarised below and form the basis of the Ward 39 LAP.

- (1). **Access** – Ability to access daily needs with little or no cost, including opportunities, people, resources, services and information.
- (2). **Sense of Place** – The identity and character of the area, in terms of cultural, community, aesthetic values, including landmarks, natural and built features, providing orientation and meaning for its inhabitants.
- (3). **Livelihoods** – The degree to which the area supports economic generation, and its ability to productively interact with the rest of the city in creating livelihoods, and entrepreneurship.
- (4). **Space and structure** – The form of settlement in three dimensions, with supporting infrastructure, and the manner in which different spaces, places and land uses fit together in space, with hierarchies that are logical and efficient.
- (5). **Land use management** – The ability of communities and institutions to manage the direction of development within Ward 39 and the greater Vulindlela area, and the ability of people, communities and institutions (including municipality and government agencies) to influence the nature of their natural and built environment and location of development within Ward 39.

Each of the development measures identified above is subjected to an analysis to establish the strengths, weaknesses, opportunities and threats in relation to Ward 39. The *status quo* findings developed from the situational assessment in section 3 and the SWOT analysis inform the development of scenarios and the vision for Ward 39. Synthesis of the SWOT analysis is then included which represents the development directives for Ward 39.

Figure 6: Process to determine LAP development directives



4.2. SWOT Analysis

Further to the status quo, summarised in Section 3 above, the analysis hereunder (Table 16) provides an overview of the strengths, weaknesses, opportunities and threats for each of the development measures detailed in Sub-section 4.1 above, thus providing an ordered framework to inform the Ward 39 LAP.

The analysis provides an overview of the internal strengths and weaknesses, and external opportunities and threats under each of the performance dimensions. The analysis under each of the performance sub-headings was followed by an interpretation of key outcomes. These then directly

inform the vision and objectives in this report. It will be appreciated that a proper analysis of these subjects is necessarily detailed and thus, somewhat “full”. In order not to burden this report with that detail, a synthesized and distilled SWOT ³ analysis is presented below.

The following represents a high-level summary of the issues from the detailed SWOT analysis:

Access:

- Access to services is a limiting factor in the future development of Ward 39: transport network and public transport upgrade.
- Costs and logistics associated with provision of social and utility services to scattered rural settlements is unsustainable: focus future investment in defined urban centres.

Sense of place:

- Different social, economic, settlement and natural resource dynamics (contributing to overall sense of place) in northeastern, central and southwestern parts of Ward 39: spatial planning interventions need to be sensitive to these differences.

Economy and livelihoods:

- Ward 39 currently has no major incentive for investment in development other than for public sector services provision (narrow economic base): a set of defined minimum conditions needs to be in place in order to attract and sustain investment in the Ward.

Elements of spatial structure:

- The centres within Ward 39 are weakly defined and have limited functionality: the future location, scale and function of centres identified in Ward 39 needs to follow the hierarchy defined for Vulindlela i.e. higher order centres attract higher order goods and services and *vice versa* for lower order centres.
- No universal structuring principles have been applied in current land use allocation in Ward 39: principles fundamental to structuring space include high density social and economic activities located in defined centres. These are surrounded by progressively lower density social and economic activities the further one moves from the centres.

Land use management:

- Ward 39 is characterised by lack of effective co-ordination and communications amongst stakeholders responsible for planning and land use management: appropriate institutional arrangements are required to achieve joint management of planning, land use and development.

In order to focus the findings of this synthesis report on the key developmental issues in Ward 39, a high level analysis of the outcomes of the detailed SWOT has been included below (Table 16). The findings have been separated into “developmental informants” (X axis: strengths and opportunities) and “developmental constraints” (Y axis: weaknesses and threats). The intersection of informants and constraints is defined by the diagonal (blue line from left to right) in the table in the form of the numbered line (i.e. points 1-13). The description of these points, which immediately follows the table

³ Internal Strengths and Weaknesses, External Opportunities and Threats

below, provides an outline of how the development of Ward 39 should unfold in order for the constraints to be resolved and the informants (strengths and opportunities) to be realised.

A careful study of the layout of that SWOT tableau, read with Table 16 which follows it, will reveal its structural and analytical strengths.

Table 16. High level synthesis of the SWOT analysis findings

KEY INFORMANTS															
KEY CONSTRAINTS			Internal Strengths					External Opportunities							
			Growing population	Youthful population profile	Land in state and community ownership	Rich in natural resources	Land available for different types of development (agric, housing etc)	Unexploited natural and cultural assets: sense of place	Provision of higher order services in defined centres:						
									Diversification of economic base	Provision of social services in centres	Provision of infrastructure	Provision of public transport system	Provision of housing	Rehabilitate ecological infrastructure resources	Functional joint management structure
KEY CONSTRAINTS	Internal Weaknesses	Settlement sprawl in NE & SW areas: no defined centres	1												
		Unskilled, low educated & low employed		2											
		Different organs of State			3										
		Under threat due to poor land use management				4									
		Challenges in gaining access to land, services, people, resources					5								
		In process of being eliminated						6							
	External threats	Narrow economic base							7						
		Low level service facilities: scattered settlement unsustainable								8					
		Limited utility services									9				
		Inadequate public transport services										10			
		Housing programme limited to former Vulindlela area											11		
		Biodiversity undergoing transformation												12	
		Lack of co-ordination													13

It is the very intersections of the various core issues identified in the detailed and subject-specific SWOT analyses which produce a range of actions/ directives for the proper planning of, and thus functioning of, the ward. In effect, these comprise something of a set of way-points on the trajectory to that goal.

1. Accommodation of the growing population in identified urban centres with defined urban edges with high levels of service and a diversity of economic opportunities.
2. Provide opportunities for training and the development of human capital in Ward 39 through the establishment of training incubators and with practical experience being gained on project implementation.
3. Formal agreements among state agencies and land administrators on the terms, conditions and mechanisms for freeing up land, in identified areas, for residential/ commercial/ service industrial development purposes.
4. Establish mechanisms in a land use management system and among traditional structures for the protection of agricultural and ecological resources.
5. Identify land areas to be released for urban development, open space, commercial agriculture, manufacturing, services provision, conservation ⁴ and infrastructure. Make provision to ensure security of tenure of land for such developments, and overall security of assets to incentivise investment.
6. Identify and locate cultural and natural assets to be included into the profile of tourism opportunities to showcase for Ward 39.
7. The economic base of Ward 39 needs to be broadened and diversified through the establishment of economic generators in the form of:
 - (i) high density urban centres;
 - (ii) attracting external investment in different sectors with local potential; and
 - (iii) the provision of services, infrastructure and housing.
8. Rationalise the number of scattered service facilities in rural settlements and upgrade the size and quality of facilities in defined urban and rural settlements.
9. Encourage investment in Ward 39 through planned provision of a differentiated level of services in defined urban and rural settlements.
10. Government enable the establishment of a cost-effective and efficient public transportation service through the establishment of an all-weather transport network, transport hubs and a passenger rail service with associated stations.
11. Revise the Vulindlela housing project and its extension into Ward 39. Revisions to the project should include the phasing out of *in-situ* upgrades in all rural areas. Aligned to the development approach, Traditional Leadership should drive an initiative to avoid sprawl beyond the common accepted and agreed settlement boundaries, in so do doing avoiding the

⁴ Some of it possibly through the establishment of conservancies in collaboration with KznWildlife

development of unsustainable residential/ commercial/ industrial uses outside of defined urban areas. The revised project should make provision for a wide range of housing options, as advocated by DoHS, in urban areas.

12. Biodiversity in Ward 39 is under threat and needs external investment and local support and commitment to achieve rehabilitation in order to promote the provision of ecological goods and services in the form of water, medicinal plant material, indigenous timber, protected areas for tourism (hospitality, birding, adventure sports, plants, game spotting, landscape, etc).
13. Institutional arrangements, with particular emphasis on Ward 39 representation, for the planning, implementation and operation of the LAP are essential to the success of the development of this extension to Vulindlela.

4.3. LAP Development Challenges

The key issues emanating from the SWOT analysis are used to indicate what needs to be considered in the Ward 39 LAP to achieve robust sustainable development. In order to introduce debate on the future of Ward 39 two scenarios have been considered, which also needs to be linked to the VLAP.

The intention is to contrast the “what could be” with the “what is” in order to stimulate debate and understanding about the benefits associated with realising future development potential of Ward 39 in the context of the city.

4.3.1. Challenge

The history of development in Vulindlela and Ward 39, as an ex-apartheid homeland area, is one of the crucial factors that has, over many years, served to limit development in the area. This, allied to the traditional system of land allocation and land use and the challenges associated with gaining access to land for productive economic development in areas owned by the Ingonyama Trust, has further limited external investment. A further influence on the current state of Ward 39 has been its location in close proximity to an identified growth centre in KwaZulu-Natal, i.e. Pietermaritzburg. Over time, extensive informal settlement development has resulted throughout the area which has densified significantly along major transport and services routes in response to the abovementioned factors.

Msunduzi Municipality, when it was allocated the responsibility for Vulindlela, invested in the provision of a wide range of social and infrastructural services to deal with the backlogs in this area. The provision of services (including free basic) on Ingonyama Trust land in close proximity to an industrialised centre has made this area more attractive for migrants seeking opportunities to gain access to employment and associated services. As a consequence of these factors, favouring extensive informal settlement over other forms of potentially more productive land use that could enable greater economic potential, has served to further diminish opportunities for economic advancement of the majority of people resident in the area. The Ward 39 area is poorly developed and will require substantial investment from Msunduzi Municipality and other government agencies to meet the SPLUMA requirement to achieve equality.

In terms of these findings, the main challenge facing the future development facing Ward 39 can be summarised into a central question that has been identified is as follows:

“How should this complex set of historical issues and development potentials be addressed in order to achieve sustainable development in Vulindlela and Ward 39 as an integral part of the city?”

This question and the underlying issues raised in the SWOT analysis are addressed in the Ward 39 LAP and the formulation of interventions and strategies necessary to ensure sustainability.

It is against this background that the two broad scenarios have been identified to inform the future development of Ward 39.

As noted previously, the intention of these scenarios is to provoke debate and to encourage change in the way in which leadership structures and the community have in the past dealt with challenges associated with under-development and the pressures associated with urbanisation. In fact, what is increasingly necessary is that the rationale behind traditional land allocation and land use systems (deriving from the pastoral history of the *isiZulu* people) needs to be adjusted in peri-urban areas such as Ward 39. This is necessary to accommodate urbanisation into the rules and conditions which need to be used to effectively manage this phenomenon. This is not to say that traditional structures do not have a role in the process of land use allocation and management, rather what needs to be debated is how the institutions can be informed and its processes enhanced such that they can better accommodate these fundamental responsibilities on behalf of the people they represent. This need for constructive change in traditional land administration is noted in the NDP as an important component of realising sustainable development in areas such as Ward 39, Vulindlela.

4.4. Scenarios

Owing to land ownership and historical patterns of development, Ward 39 is characterised by two dominant areas of settlement: the more accessible, concentrated serviced settlements in the northeast characterised by dynamic growth and those in the southwest characterised by poorly serviced, scattered settlement where growth is limited at this time.

These two areas of settlement are separated by a block of state land and which is subject to applications for the settlement of restitution land claims – full detail not yet available on the nature and plans for these claims from the RLCC.

It is against this background that there two scenarios have been prepared as the basis for the vision for the future development of Ward 39. These two scenarios are briefly followed by a vision statement based on the pursuit of the recommended scenario.

The two scenarios that have been formulated for the future development of Ward 39, recognising the role of Ward 39 in respect of Vulindlela.

4.4.1. Scenario 1: The “Start anew” option

That ideally, a new centre servicing both the north, central and southern areas of Ward 39 be established on state land in close proximity to regional transportation networks. This new centre would be designed to both accommodate and service population growth in the northeast and southwestern areas of Ward 39. In order to fulfil this function, it would need to be established as a higher level centre in the Vulindlela hierarchy and include all the services and functions appropriate at that level. The proposed high-level centre would have a number of smaller lower order centres established in scattered settled areas to provide people located there with mobile services (e.g. Clinics, SAPS, libraries, Home Affairs, markets, pension payments etc.) at regular intervals. A system of referrals is in place to ensure residents in rural areas can gain access to services required in the higher order centre facilities.

Sufficient land should be set aside to absorb future growth deriving from new entrants into the area and to accommodate natural increase. Urban development in the proposed centre should be characterised by residential densification, differentiation in the types of housing available to suit different income groups and the provision of a range of social and utility services appropriate to this level centre. Provision should be made to identify land adjoining the centre for manufacturing, processing and the provision of services to residents of the centre with education and training facilities that are directed at skills development for the job market both locally and regionally. Land around the centre should be set aside for small holder food production aimed at meeting the food requirements of the residents of this centre and in the process reducing costs and carbon emissions inherent in long haul transportation of produce.

Expansive areas with potential on state land should be set aside for large scale agriculture both in terms of food production and materials for construction and manufacturing (i.e. timber). These agricultural production areas could be operated on a commercial basis through appropriate forms of private public partnerships with beneficiaries of the land claims receiving rental income, employment and skills transfer from such enterprises.

Remaining areas of the Ward with limited agricultural potential, but under traditional administration, should be identified for continued livestock (albeit upgraded to commercial status) and arable farming, but with clearly defined limits to both settlement, cultivation and grazing of natural grasslands. The remainder of these traditional areas should be set aside for rehabilitation of biodiversity and the establishment of tourism opportunities in the form of cultural experiences, adventure sport, nature trails and water sports taking advantage of the new Smithfield dam. The formative town at Ncwadi should be identified as a gateway for water related tourism adventure on the new dam and one of the sites for mobile services provision.

4.4.2. Scenario 2: Work with what is available

The aim in scenario 2 is to capitalise on what exists in the Ward in order to make it work better. This involves the dynamic settlement development in the northeast continuing to form an integral part of the KwaMncane and Taylors Halt urban precincts, as envisaged in the VLAP. The original spatial concepts for this area should proceed despite municipal boundary changes. This will include provision for residential growth and densification in the existing settlements, differentiation in the provision of

housing, upgrade in the types and levels of services provided and access to opportunities for investment in manufacturing and processing. Development in the northeast is designed to capitalise on the road and rail links with uMngeni, Msunduzi, and eThekweni municipalities. The demand for foodstuffs for the concentration of settlement in this precinct would derive from surrounding agricultural areas located on traditional, state and privately owned land (traditional and commercial).

Defined urban edges would limit expansion of urban development into agricultural and conservation areas.

In this scenario central areas of the Ward 39 scheduled for restitution land claims would need to be consolidated for small holder commercial establishment in the production of food, livestock and timber. Areas could be set aside for closer settlement to accommodate beneficiaries. But such small-scale settlement would need to be subject to land use planning provisions for the area. Caution should be exercised by the planning authorities for these settlements to ensure that they do not transform into “overspill” catchment areas for in migrants attempting to gain access into the metro.

Whilst population growth in the western and southern areas of Ward 39 has been slow to date it is likely to increase in future accompanying expectations associated with inclusion of the area into Msunduzi, construction of the Smithfield dam and possible settlement of restitution claims in the central areas of the Ward. In order to make provision for existing needs, and at the same time anticipate future growth and expansion of population in this part of Ward 39, it is proposed that Ncwadi be established as a higher order services centre. This should include the full range of social and utility services and opportunities for the densification of residential development. Such development should accommodate a range of types of housing to meet the needs of different income groups moving into the centre. Owing to the steep land within parts of Ncwadi and its current linear form, careful design consideration will have to be given to the layout of this urbanising area. In the design process it will be necessary to incorporate a notion of centrality of the CBD component to create a local identity and sense of place. The challenge is to achieve centrality and a sense of place in a linear form and at the same time make this accessible to the outlying residential areas.

Provision will also have to be made on the periphery of Ncwadi centre for production, processing and manufacturing of foodstuff by small holder farmers to feed the resident population of this area. Owing to the proximity of Smithfield dam provision in the design of the centre should also be made to create this as gateway for tourism and water sport on the dam linked to hiking and birding opportunities in the neighbouring Impendle Nature Reserve.

Authorities should ensure that traditional rural settlements surrounding the upgraded Ncwadi should not be used to accommodate would-be migrants entering into the area to benefit from development opportunities. Provision in the planning for the upgrade of Ncwadi should be made to accommodate an influx of people into the area. Ncwadi as a centre should have access to a number of small satellite centres located in more distant rural areas where mobile services are provided to residents of these areas.

Remaining traditional lands in the southwest of Ward 39 should continue to be used for livestock production, but under a different management regime geared towards reduction in stock numbers and increasing quality and value of the herd for commercial production. This changed regime should include managed utilisation of the indigenous grasslands through introduction of rotational grazing and a programme of managed burning and the establishment of a sales yard in close proximity to Elandskop. Owing to the drier conditions in the southwestern areas, land not suited to livestock or arable production should be set aside for rehabilitation of biodiversity and encouraging the production of ecological goods and services for local community members.

4.4.3. Interpretation and Selection

The selection of Scenario 1 would serve to integrate the different components of Ward 39 and capitalise on the sum of its currently disparate parts. Furthermore, the establishment of a central node in Ward 39 located on or near the main regional transportation networks would serve to align developments in this area with those envisaged in Vulindlela and the surrounding sub-regional centres. The location of a centralised services centre would also serve to overcome accessibility challenges which currently hinder growth and development in this area.

In contrast, selection of Scenario 2 would serve to reinforce consolidation of urban development in the northeast around KwaMncane and Taylor's Halt, as envisaged in the VLAP. In terms of this scenario the emphasis on development in Ward 39 would shift to the state land and Qadi traditional areas with Ncwadi as the proposed growth point. Owing to the history of the development of this part of Ward 39, Ncwadi has functional linkages with centres in the Richmond, Bulwer, Boston and Impendle sub-region. Thus, in terms of this scenario, Qadi and the state land areas would, through the establishment of Ncwadi as a services centre, be drawn towards both Vulindlela/ Edendale/ Pietermartizburg and the sub-regional services centres for higher order goods and services.

A key consideration favouring scenario 2 relates to the prohibitive / exorbitant costs, resources required, and time delays associated with establishing a new centre as envisaged in scenario 1. The logistics associated with gaining access to state land which is included in restitution land claims along with gaining planning and environmental approvals could further delay the establishment process.

In the interests of making progress with implementation of the spatial planning framework for Ward 39 and on the basis of the above interpretation it is recommended by the professional planning team for this project that Scenario 2 be selected as the way forward for the development of Ward 39: i.e. "work with what is available". Scenario 2 was also adopted as the most feasible option at the project steering committee meeting held on 25th May 2018.

4.5. Vision and objectives

The vision and objectives for this LAP are based on the findings of the policy review, Msunduzi SDF, the SWOT analysis and scenario 2 outlined above which informs the future development of this area and has been identified as the preferred option.

4.5.1. Vision for Vulindlela

If the recommendation to select scenario 2 as the basis for future development of Ward 39 is adopted by stakeholders, then the vision for the future development includes:

- Establishment of a vibrant area designed to attract investment and accommodate growth in the northeast of Ward 39 to form an integral part the centres envisaged at Taylor's Halt and KwaMncane in Vulindlela.
- Upgrading of Ncwadi as the services centre and economic hub for the Qadi traditional area and the development accompanying restitution of land, if such is approved, to beneficiaries on state land in the central areas of Ward 39. This will include: establishment of a node of commercial and administrative services, areas suited to densified residential development and land identified for manufacturing and small-holder food production in areas adjoining the centre, but located along main transport routes to ensure accessibility. Provision for the establishment for Ncwadi as a gateway for tourism geared to local cultural sites and practices, opportunities in hospitality and water sports at the Smithfield dam and nature based opportunities in neighbouring Impendle Nature Reserve.
- Alignment of the proposed Ncwadi development with that in Vulindlela in terms of level of centre and type of services to be provided whilst also maintaining functional linkages with sub-regional services centres.
- Effective co-ordination and co-operation of local leadership structures ~~and~~ with the authorities responsible for promoting development in this part of the Msunduzi municipal area. This is to be achieved through the establishment of a Joint Management structure ⁵. This entity is to be established in terms of relevant legislation and is inclusive of delegated powers and financial and personnel resources sufficient to oversee implementation of the LAP and associated sector plans.

4.5.2. Strategic objectives

The following strategic objectives (Table 17) have been extracted from key findings and the analysis above. The aim in including objectives is threefold:

- To provide guidelines of the factors to be addressed in preparation of the spatial framework for Ward 39.
- To indicate sectors within which project programmes should be developed and implemented.
- To provide an indication of the areas in which monitoring of the implementation of the plan should take place.

⁵ Later referred to as a Special Purposes Vehicle: "SPV"

Table 17. Strategic Objectives

Strategic Objectives	Means
Access	
Develop internal networks which are linked at sub-regional and regional levels.	Develop interconnected internal transport routes linked with district and provincial transportation networks.
	Improve access to public transport facilities through establishment of defined transportation hubs.
	Strengthen movement links with Vulindlela-Msunduzi central and surrounding sub-regional centres.
Enhance internal movement within Ward 39 on a sustainable and efficient basis.	Improve internal circulation and access to local level nodes, services and facilities.
	Consolidate public transport routes and facilities and maximise the opportunity of the IRPTN system.
	Provide for good pedestrian linkages between home and public transport, and facilities including cycle paths.
Promote and emphasise sustainable public transport.	Rationalise public transport routing.
	Promote prioritization and upgrading of the existing rail service to subsidized passenger status refurbishing stations along the line from Plessislaer to Deepdale.
Improve accessibility to services and facilities.	Establish an increased level of mixed land uses in appropriate high accessibility locations in defined centres.
	Rationalise, upgrade and centralize social facilities to improve access and quality of services provided.
	Introduce and rapidly extend IT and cell phone networks throughout the Ward.
Sense of place	
Management and protection of natural assets	Protect and integrate environmental assets (rivers, wetlands, forests, mountains etc) and enhance their ability to contribute to ecological services delivery.
	Protect and secure all land with agricultural and biodiversity potential.
	Identify and protect and enhance the features of natural beauty within Ward 39 which contribute to its sense of place.
Identify and secure public space as an integral part of the urban and peri-urban settlement system.	Establish and enhance public space in centres and ecological corridors.
	Establish new public spaces with visual and functional qualities.
	Promote and create neighbourhood identity.
	Protect and celebrate natural and manmade (cultural) landmarks including Sports fields, green belts etc.
Introduce features to enhance the legibility of space (and hence its ordering).	Protection and enhancement of the Smithfield dam area (under construction) as a quality space.
	Introduce and define settlement edges, emphasising the relationships between built and unbuilt areas.

Strategic Objectives	Means
	Promote the expansion of conservation areas along defined ecological corridors including ridge lines and river systems for public use and as important backdrop for sense of place within Ward 39.
Livelihoods	
Increase and improve economic spaces.	Promote a balanced mix of complementary uses in seeking to identify appropriate land use categories.
	Minimise the potential adverse impacts of incompatible land uses and activities on one another.
Expand and support local small scale entrepreneurs in the agricultural production retail and commercial sectors.	Promote the establishment of commercial farming operations (small holder and large scale) utilising land areas with agricultural potential.
	Address traditional land allocation system to release and open up land for the establishment of small holder production and processing in areas adjoining defined centres.
	Promote networking and outsourcing linkages with centrally based industries (component part).
	Optimise the cultural and heritage resources for tourist potential.
Space and structure	
Define and strengthen the spatial structure of Ward 39 in alignment with Vulindlela.	Identify types of land use and associated activities which contribute to ordered and efficient land use supported and promoted by local communities.
	Consolidate and reinforce the establishment of defined local centres to provide: (i) a framework for effective and efficient services delivery; (ii) accommodation of future residential development and growth; (iii) for the establishment of an economic base in the area deriving from supply and demand.
	Extend key components of the IRPTN infrastructure into Ward 39 including location of the R69, transportation hubs and upgrading rail to include a passenger service.
Establish a more responsive urban form.	Seek to incrementally rationalize social services facilities and locate in defined centres in order to upgrade quality and centrality and in the process improve accessibility.
	Improve on the range of social services provided in defined centres such they include: libraries, IT facilities, police stations, home affairs offices etc.
	Establish lower order centres in scattered rural settlements which provide a wide range of mobile services for residents of these areas. Include a system of referrals to higher order centres and facilities.
	Manage rapid urban growth by limiting further scattered development through the implementation of rationally identified settlement edges.
	Ensure close physical relationship between intensive agriculture and central places.
	Strengthen linkages for <i>post</i> school learners to education hub at Imbali and in Pietermaritzburg.
	Focus development and new building in relation to movement routes.
	Higher density housing.

Strategic Objectives	Means
Develop an alternative housing delivery model.	Promote a range of housing types using all available policies and resources of the Department of Human Settlements.
Management and control	
Enhance the capacity and responsiveness of local government to manage the settlement and development of Ward 39.	Establish a joint management entity amongst stakeholders (government, community, traditional) to assume responsibility for implementation of the LAP and to manage and maintain land use and services delivery.
	Introduce the concept of enforcement by taking action against legal infringements and unplanned settlement in traditional and state land areas.
Enhance co-ordination and co-operation between stakeholder groups.	Task the joint management body with the coordination of existing stakeholder initiatives and energies.
	Involve stakeholder groups in the current planning process.
Build management capacity within the stakeholder community.	Promote the capacitation of traditional and community structures in the management of land use to enable them to work with the municipality in implementation of the LAP.
	Involve local people, particularly youth, in skills development and employment through infrastructure and housing delivery and establishment and operation of business initiatives in different sectors such as agriculture, processing, transport, manufacturing etc.
Develop the willingness of the municipality in conjunction with traditional structures to manage development.	Manage illegal building and township development.
	Develop public private partnerships.
	Resolution of issues associated with restitution of state land to resolve currently barriers to development of the central areas of Ward 39.

4.5.3. Preconditions for Successful Implementation

The following set of pre-conditions for the successful implementation of the LAP are noted below:

- Establishment of a fully representative joint management entity for Vulindlela-Ward 39 where the interests of the people of the Ward are jointly represented through the establishment of a Ward 39 sub-structure.
- Education and awareness creation among municipal staff, local people, representatives and leadership about the purpose, meaning and role of the LAP. Work-sessions need to be convened by municipal staff at local level to establish the implications of the implementation of the plan.
- Ensuring that there is political commitment within municipal structures and at local level for the implementation of the LAP in Ward 39. Council resolution and signed mandate with supporting commitment to funding as part of short- and medium- term budgeting.
- Commitment at a high level in line function municipal, provincial and national government departments to work, in a coordinated basis through the joint management structure, and in terms of the approved LAP for project identification, prioritisation, funding and implementation.

- Engaging the RLCC and DRDLR in order to both identify and find ways of overcoming challenges experienced in resolving land claims on state land such that government resources can be productively utilised in implementation of key areas of the LAP on state land i.e. settlement-housing, services provision, land use, agriculture, infrastructure and local economic development.
- Developing and adapting a common set of structuring principles for the spatial framework in the LAP.
- Clearly defined, prioritised and budgeted strategic projects in each of the key economic sectors identified in the LAP with catalytic growth potential:
 - Infrastructure relating to improved accessibility, provision of utility services and attracting private sector investment (i.e. developing serviced areas for industry).
 - Setting aside and developing land in urban centres in anticipation of provision of services for residential, commercial, manufacturing, services growth and expansion.
 - Housing following the LAP in terms of provision of services and a range of housing options in defined centres for different income groups.
 - Establishing training incubators in the construction, agricultural, biodiversity, tourism, transportation (public transport and haulage) and business sectors where local youth can obtain SITA-approved qualifications and gain experience in project implementation in these sectors.
 - Local economic development involving the packaging of projects identified in the LAP and local business interests through business plan preparation for submission for start-up funding.
 - Rehabilitation and management of ecological infrastructure to promote the improved yield in ecological goods and services for local benefit.
 - Turn around in the agricultural sector involving the expansion of market led development in crop production, the commercialisation of the livestock industry and the establishment of commercial timber production and processing opportunities. The turn-around strategy for this sector should involve private enterprise working closely with existing producers (including youth) and relevant government agencies in the formulation of a programme and projects or funding and implementation.

5. SPATIAL FRAMEWORK

5.1. Introduction

This section of the document is used to compile the spatial framework and associated guidelines for the VLAP. The plan itself draws on the key components of the policy framework in Section 2 of this report, the vision and objectives contained in Section 4 and spatial layers gathered in the *Status Quo* Report. The remainder of this report is used to address the planning issues raised in the assessment in Section 3 and the SWOT analysis in Section 4 above.

5.2. Method Used in Compilation of the Spatial Framework for Vulindlela

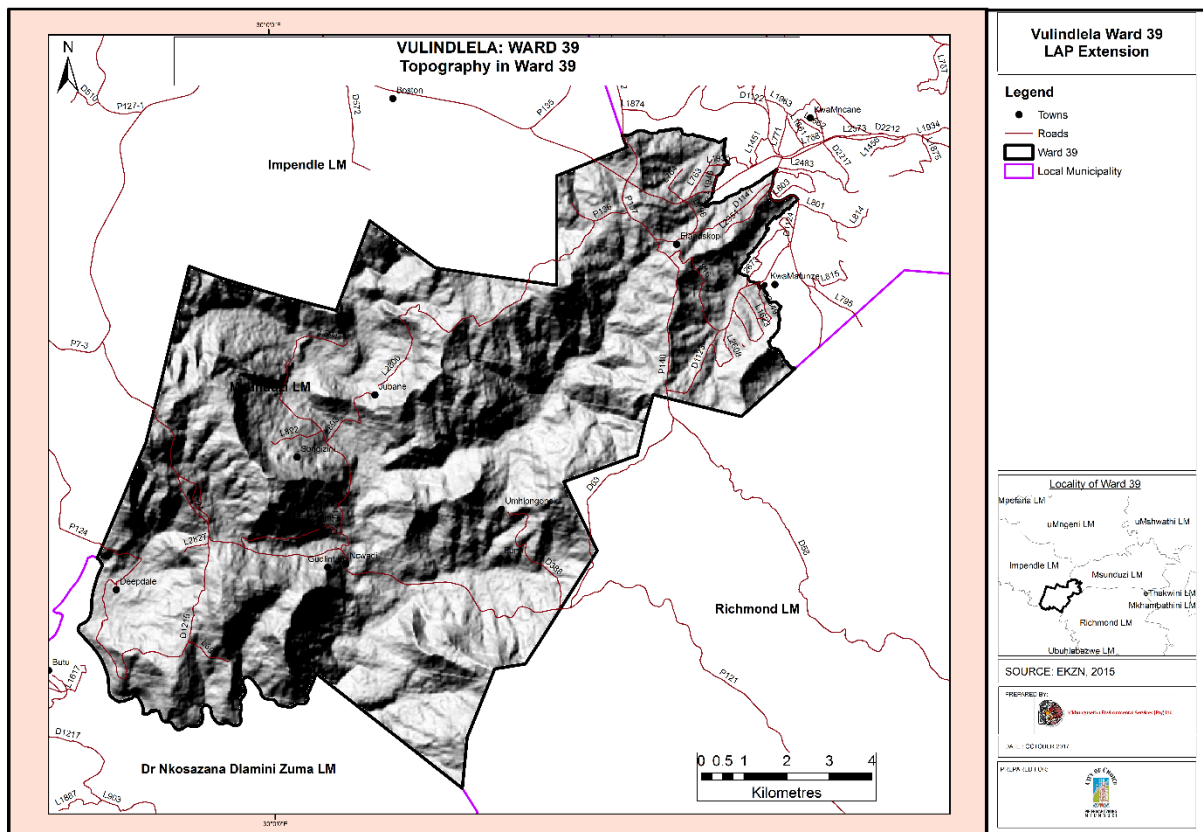
In the compilation of the spatial framework a variety of data sets were used to inform the planning process including: natural resources, land related material, settlement distribution, local economic development, social and utility services, future growth potential, transportation networks and efficiencies in the use of space. Relevant components of these data sets were intersected in the formulation of the final Ward 39 spatial framework. These are summarised below.

5.3. Components of the Spatial Framework

5.3.1. Topography

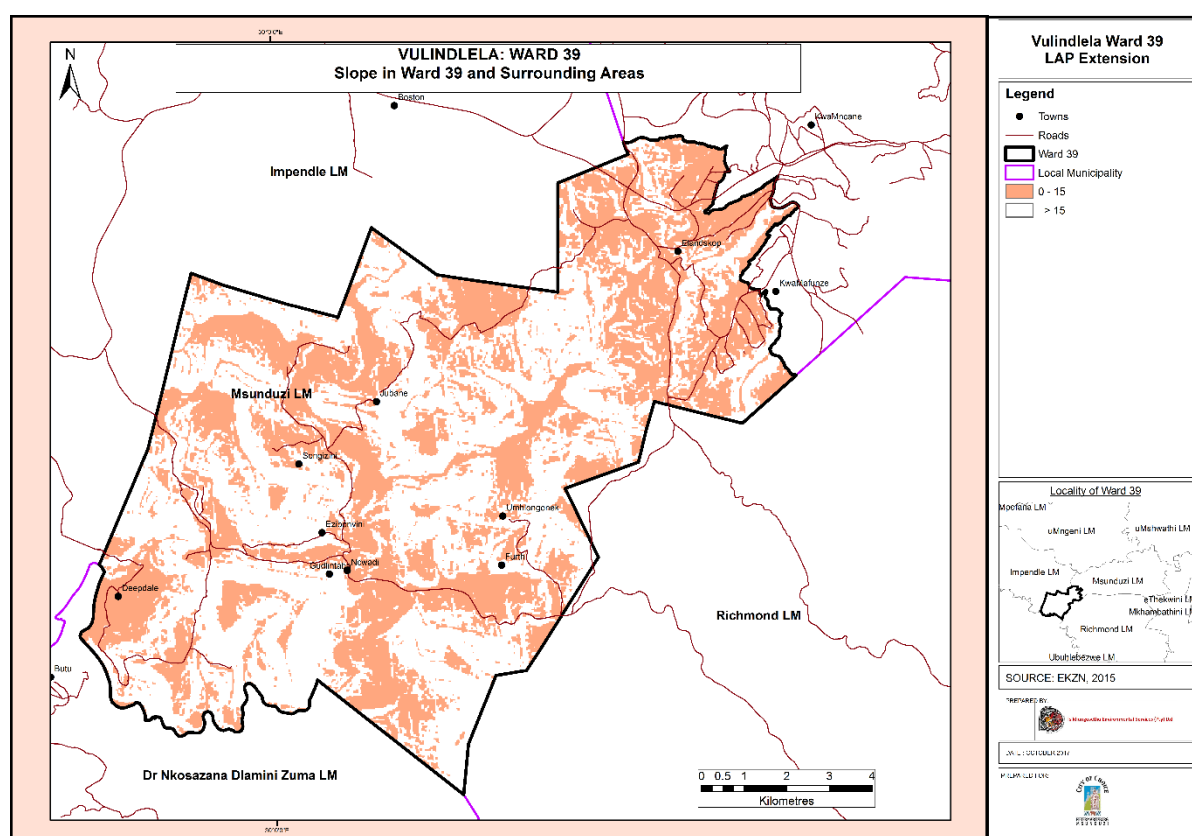
Ward 39 comprises land which is located at high, medium and low altitudinal ranges. The Highlands are predominantly located in the northeast of the project area and are characterized by undulating sandstone ridges intersected by dolerite dykes. In the south and west the tops of ridges tend to be narrow with steep slopes into the valleys. In contrast the northern and eastern highlands have more rounded and undulating ridgelines with areas suited to large-scale agriculture and settlement. The deeply incised river systems drain into the Mkhomazi system. There are limited areas of low lying land in Ward 39. These are mainly located to the west of the area along the Mkhomazi River valley. The rugged nature of the topography of this area is highlighted in Figure 7. This topography needs to be taken into consideration in the planning of future settlement development and the implementation of infrastructure, particularly roads, bridges, water supply, sanitation etc. This is particularly important for the land which is located between the Qadi TC in the west and the major settled areas in the east. This is currently State owned land (DRDLR) and due to its being less rugged than that in Qadi TC area and less settled than the eastern areas. This area, according to the LAP, is recommended for future managed agriculture and properly demarcated settlement. In this part of Ward 39 there is the potential for this type of development to be located on provincial transport routes to enhance accessibility.

Figure 7. Topographical map



One of the issues that will need to be taken into consideration in this steep terrain is the potential conflict between differing land uses. Thus, for example, there could be a clash between future settlement and extensive agriculture, both favouring slopes less than 15%. Similarly, bulk infrastructure and agriculture favour flatter slopes as does industry. In this regard, care must be taken in protecting high value agricultural lands in the less than 15% areas whilst locating future settlement and infrastructure development on the marginal lands within this or steeper slope breaks.

Figure 8. Slope (EKZNW, 2015)



The lower lying and more rugged southern and western areas are mainly located within the Qadi TC area where settlement has taken place along major transport routes. There is limited opportunity in these areas for large scale expansion due to slope, access roads through rough terrain and a lack of water for domestic and agricultural purposes.

Future development of these areas must be informed by sustainability, a critical planning principle used in the Vulindlela LAP (Isik, 2016). This is of particular importance in respect of Ward 39 where the costs of maintaining settlement in remote and inaccessible areas places an economic burden on Msunduzi. The intervention areas identified in section 6 has been done with due consideration of the above.

In respect of its alignment with the VLAP, the main difference in topography is that the western area of Ward 39 is lower lying and more rugged than that in Vulindlela.

5.3.2. Biodiversity and Open Space System

Ward 39, similar to Vulindlela, is characterised by areas with high levels of biodiversity particularly along the major ridge lines and river systems. Large portions of the natural habitat in respect of Vulindlela and to a lesser extent Ward 39 have been transformed through settlement, infrastructure, plantations, cultivation and livestock, as can be deducted from Figure 9 below. Thus, the remaining areas of ecological infrastructure (Figure 9), need to be conserved and managed to optimise the production of ecological goods and services and agricultural products for households in Ward 39 and Vulindlela. The linkages with surrounding ecological support areas are also provided in Figure 10 in

the form of “green arrows”. An important aspect in this regard is the small portion of land in the northwest of Ward 39 which forms part of a conservation area protected by EKZNW as well as a stewardship area.

Figure 9. Present land use based on the work undertaken by the Msunduzi Municipality (Pers Comm, 2017a).

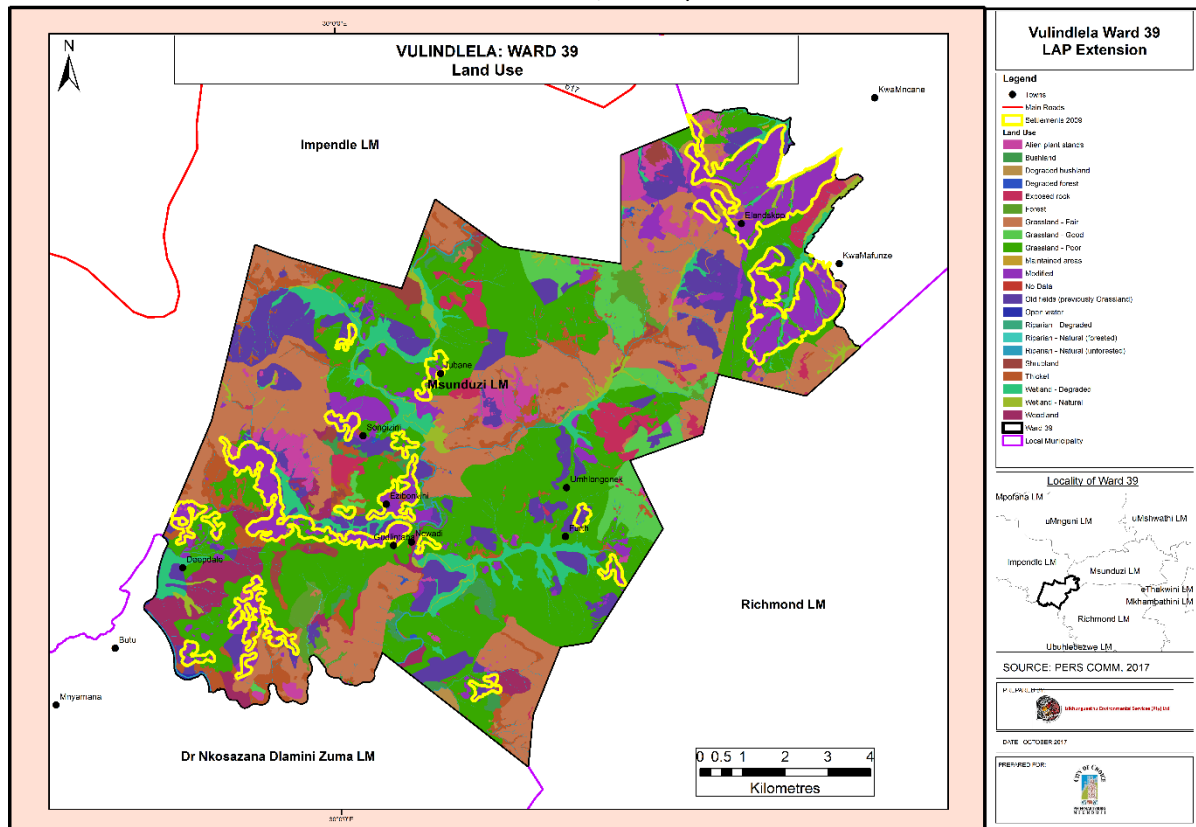
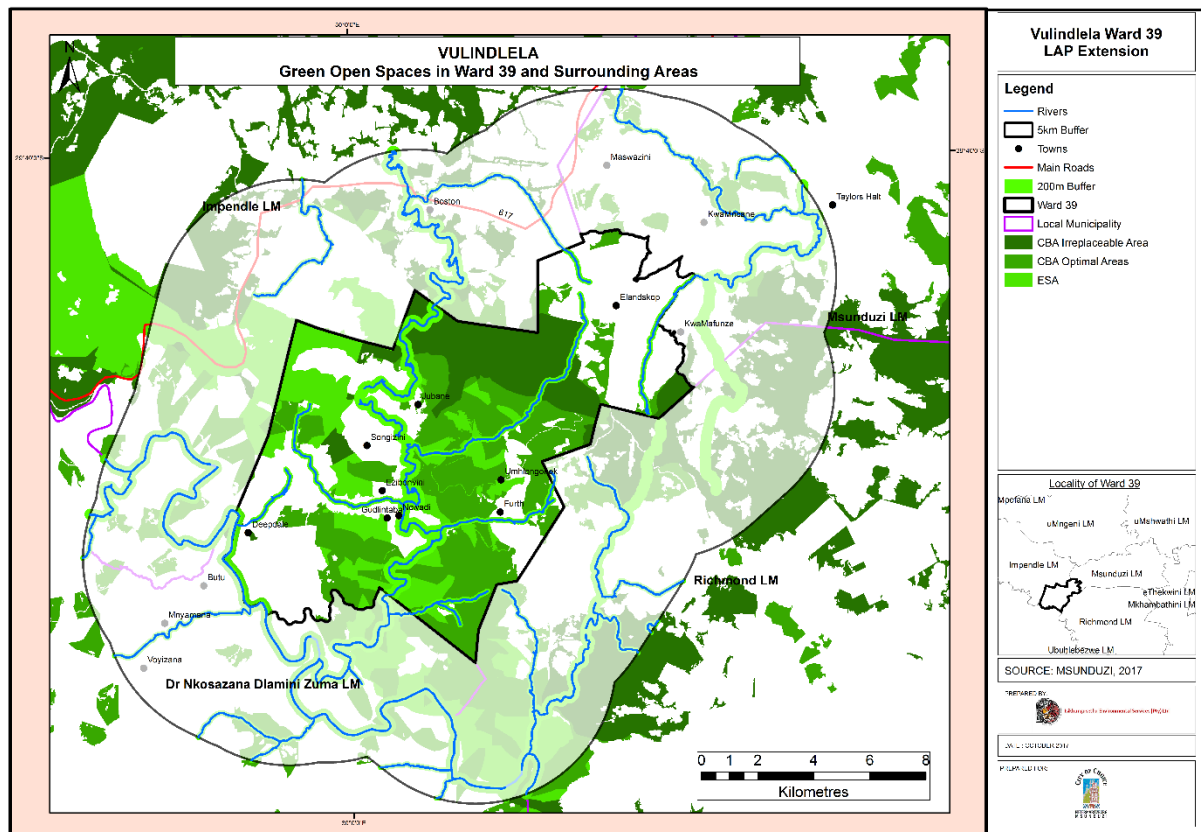


Figure 10. Biodiversity protection and linkage with surrounding open space systems



5.3.3. Agricultural Potential and Land for Different Types of Production

The agricultural potential of Ward 39 ranges from restricted to moderate in terms of the following types of production: cultivation, plantation and livestock. However, much of the natural habitat in Ward 39 has been subjected to transformation and fragmentation through settlement and agriculture (Figure 11). Thus, remaining areas of ecological infrastructure and agricultural resources need to be protected and managed to optimise the production of ecological goods and services and agricultural products for current and future generations.

Figure 12 provides an indication of the areas which are suited to arable crops, livestock and plantation production in Ward 39. The more intensive forms of production are indicated in terms of land areas set aside for medium and low density small holder production in and around existing settlements. Provision is also made for intensive forms of production (market gardening) in certain of the intervention areas where suitable undeveloped land is available for this type of farming. Depending on the outcome of the restitution claims on state land there is potential for large scale cultivation, plantation and livestock production subject to permitting of additional areas by Department of Water Affairs.

Figure 11. Land cover

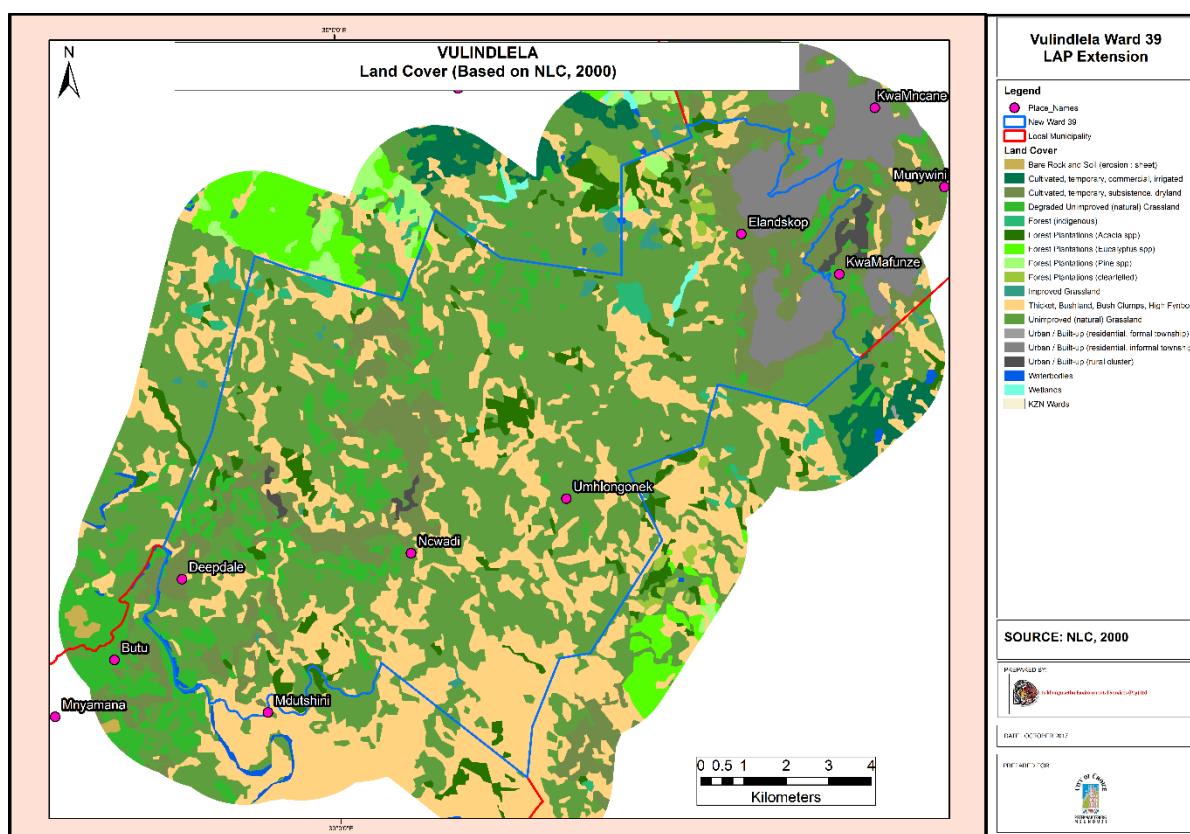
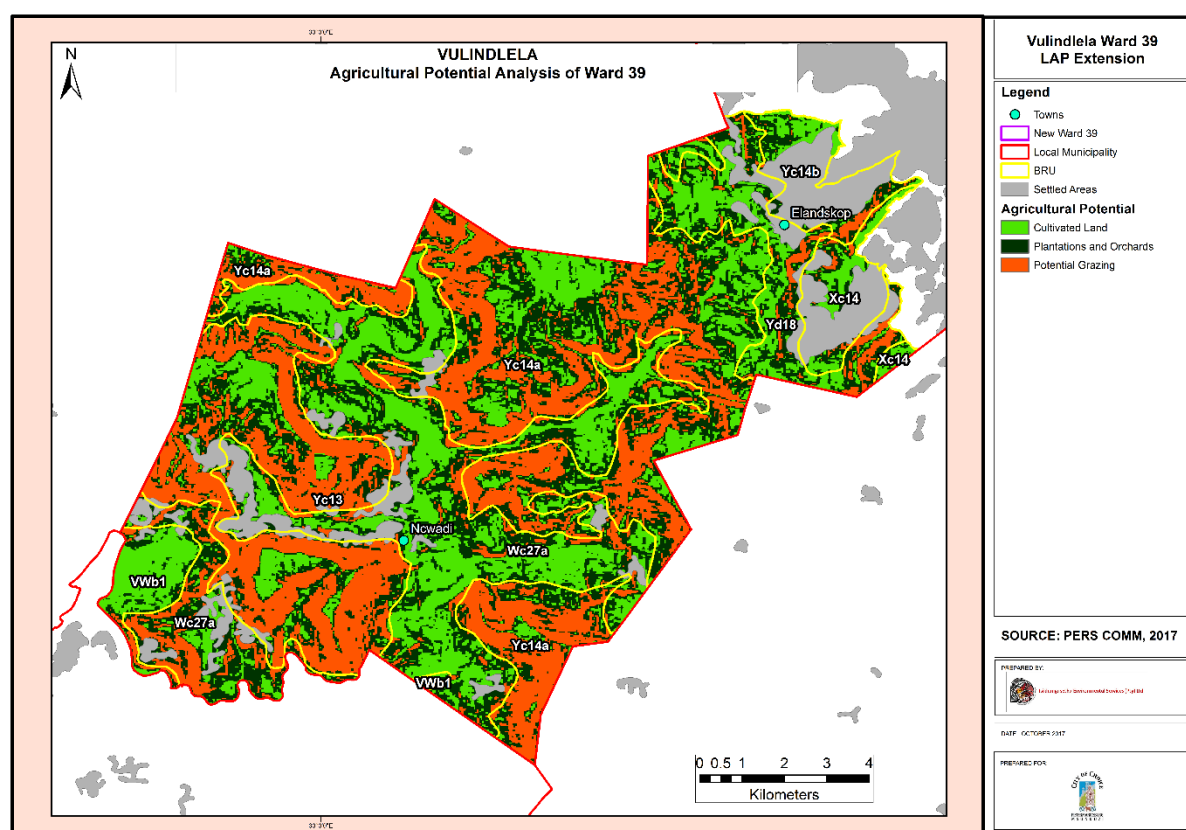


Figure 12. Agricultural Potential (*this figure also used in agric potential section 7*)



5.3.4. Access to Land

Ward 39 includes land owned by the Ingonyama Trust Board and by the state (Department of Rural Development and Land Reform, Figure 13). The ITB land is occupied and administered by 3 traditional councils (Qadi, Funze and Mpumuza). The state land is subject to restitution land claims (Figure 14). According to Mr Ndlela (RLCC, pers com 20/03/18) the Bhidla claim is the largest in Ward 39. He (Mr Bhidla) indicated that this land will not be subject to **human settlement**. If approved, **the claimants will, however, have the use of the land for farming purposes only**. He confirmed that the claimants are living in the Bulwer and Pietermaritzburg areas, so will be close enough to farm the area, without settling on that land. However, it is important to here acknowledge that the state land in the centre of this ward is subject to a competing claim lodged on behalf of the Qadi peoples.

Figure 13. Land ownership

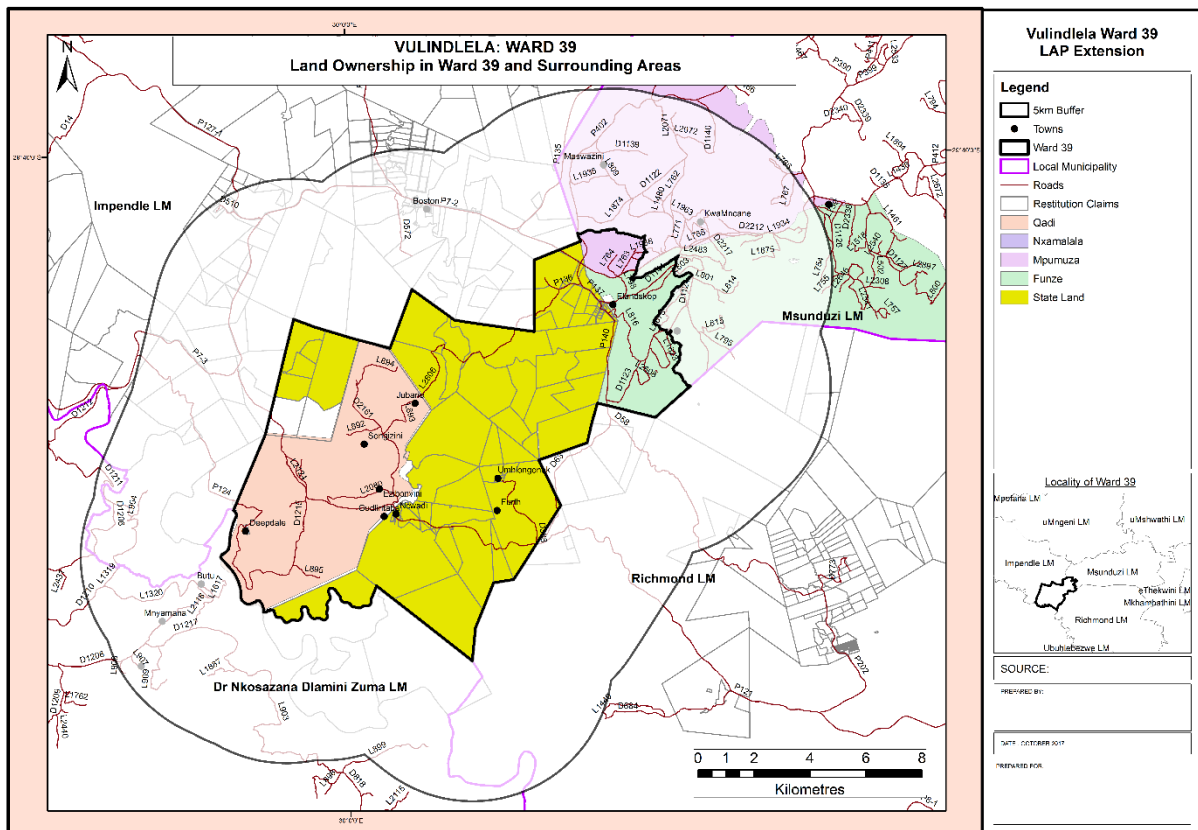
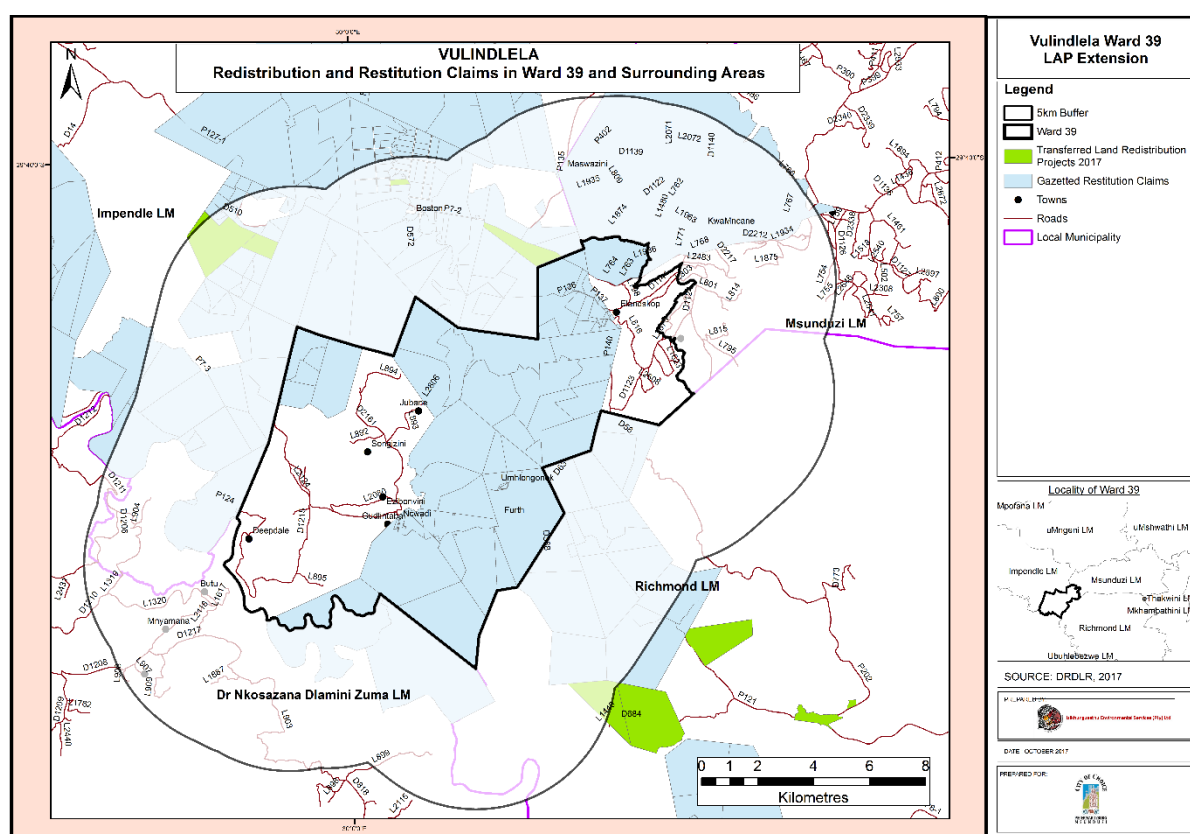


Figure 14. Land reform claims in Ward 39



Gazette Notices confirm the lodging of the land claims. Mr Ndlela indicated that there was a Business Plan for the properties under claim, drawn up many years ago, but that these are outdated and no longer applicable. He also advised that they are still negotiating the establishment of a Legal Entity which the claimants will use to communally manage the farming operations etc. This apparently has been a complex issue and the reason why it has taken so many years to resolve this claim. It would appear that this arrangement further enforces the importance of agriculture in the area and recognition of same by RLCC.

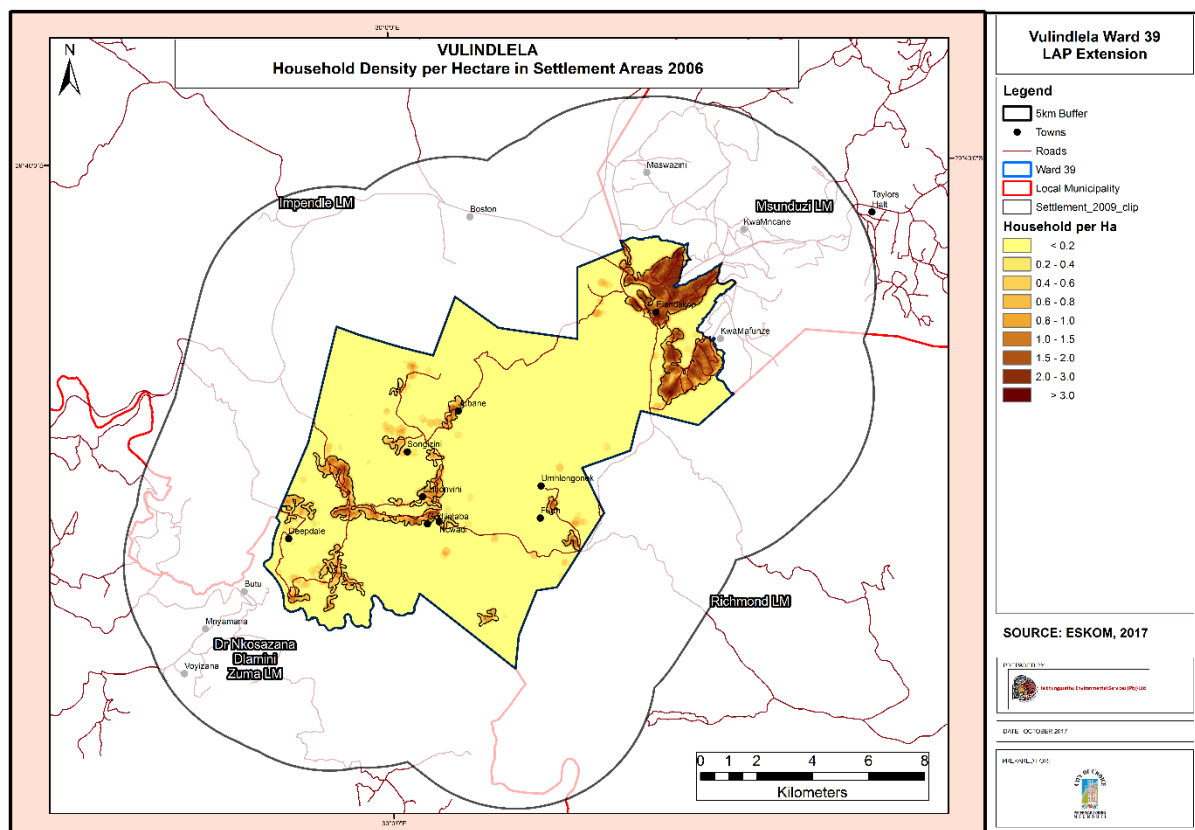
It is assumed that the requirements of the relevant legislation concerning the use of “virgin land” (Soil Conservation Act- land either never cultivated or fallowed for over 10 years) for cultivation purposes either has been, or will be, adhered to in the process of settling this claim and initiating agriculture on the claimed land. Similarly the relevant sections of the National Environmental Act and associated regulations will also have to be adhered to in the settlement of either land claim.

5.3.5. Settlement Patterns

As noted in the *Status Quo* Report, parts of Ward 39 (mainly traditional areas) appear to have been subjected to “betterment planning” in the 1970s. This involved locating human settlement on what was then considered to be poor quality agricultural land in order to protect high quality land for agriculture. This basic settlement pattern persists today in the northeastern and southwestern areas of Ward 39, but this is not the case on state owned land where it tends to be located along transport routes and in areas being used for agriculture.

However, pressures for land have resulted in substantial increases in housing numbers and densities in settlements located in the Funze and Mpumuza traditional areas Figure 15. There has also been some growth in the Qadi traditional area particularly around Ncwadi (Figure 15), Gundlintaba, Sonozini and Maqadeni. This increase in population has resulted in the expansion of settlement onto agricultural lands and biodiversity areas where housing should not have been permitted, and should not be permitted in future. The pressures for land for housing are much higher in the more accessible areas of Ward 39. Thus a settlement pattern has emerged since the 1970s in Ward 39 which ranges from low density small holdings in the less accessible rural areas to high density residential areas in the more developed areas.

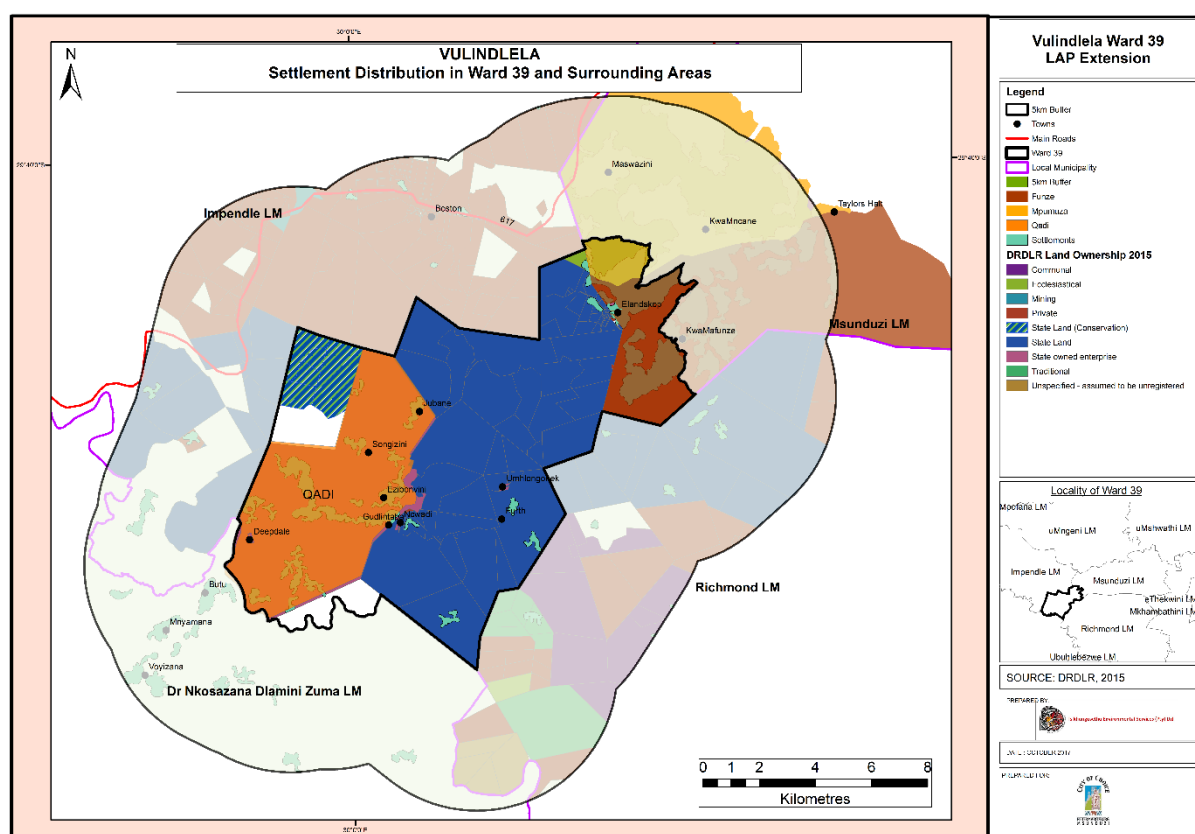
Figure 15. Household density



Ownership boundaries would appear to have had a greater impact on settlement patterns in Ward 39 than administrative boundaries. In essence settlement on state land appears to be sparse and mainly related to small scale agriculture. In contrast, settlement in traditional areas tends to be clustered with substantially higher levels of density than on state owned land. The relationship between settlement and landownership may be noted in Figure 16.

The location of traditional councils on ITB land in Ward 39 is outlined in Figure 16.

Figure 16. Traditional councils and settlement patterns



5.3.6. Distribution of Social Service Facilities

The *Status Quo* Report demonstrated that the majority of households in Ward 39 have access to primary and limited secondary school level educational facilities, local health facilities (clinics and mobile community health facilities) and traditional courts.

Access to tertiary educational level facilities is however restricted to Pietermaritzburg-Edendale. Similarly access to South African Police Services (SAPS) is restricted to a temporary police station located at Taylor's Halt and SAPS Offices at Impendle.

In the *Status Quo* Report it is indicated that residents of Ward 39 have limited access to formal sports facilities other than for those located at Ncwadi, KwaMncane and informal facilities located at schools. For access to sport complexes, residents have to travel to Pietermaritzburg-Edendale.

5.3.7. Location of Utility Infrastructure

5.3.7.1. Water

The northeastern, namely ex-Vulindlela, portion of the ward enjoys reticulated water in most areas but the increasing numbers of dwelling units here has inclined some persons to make illegal connections. This then has reduced the amount of revenue which would otherwise accrue to the municipality, and it will have put the existing infrastructure under some strain.

A few water pipelines traverse the Qadi area where there is a level of reticulation in the vicinity of the local roads. Water supply is unreliable and this, as emphatically evidenced at consultation meetings held at Ncwadi, is a bone of contention with local residents. At the commencement of this study some boreholes did not work, and when the lower reservoir is at a low level, the rising pumps were not activated to lift water to the higher reservoir. Even the clinic has its own manually-operated pump on its boundary to lift water to its elevated water tank on a gantry.

Figure 17. Water infrastructure in Ward 39

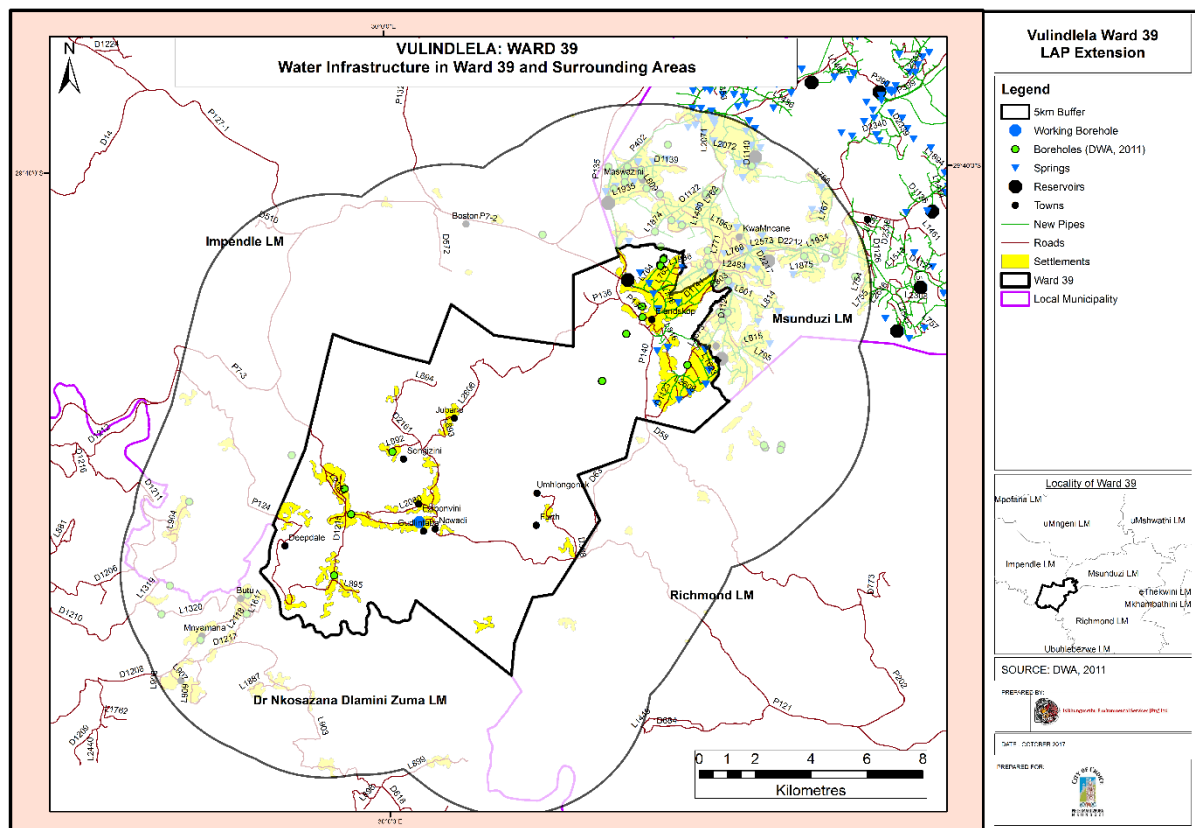


Figure 18. Ncwadi Clinic's manual water pump



Two manually-operated hand-pumps, one of them in the Gudlintaba area, do not work but the cause thereof is not known. Ex-Ingwe investigations have highlighted the then existing insufficiency of the water supply in this area and which has since shown moderate population growth.

Presently, work is being done on the maintenance/ repair and enhancement of the twin boreholes adjacent the Elands River, and as shown in Figure 19.

Figure 19. Boreholes restoration and extension: looking south from L2030, L2124 in middle distance



Borehole co-ordinates: 29° 46' 45.76" S; 30° 0' 20.15" E

Capital projects for bulk water supply have been conceived for the area but these await budget allocation. In essence, it is intended, within the next 3-5 years (i.e. before 2023) to install a pipeline from the reservoir 1.2km north-northwest of Elandskop Station, thence southwest along P137 and P140, thence south along D63 (i.e. the ward's eastern boundary) to near Furth, thence west along L2124 past Ncwadi Station and Gudlintaba to Ncwadi and thence to the existing reservoir 2.7km northwest of the Ncwadi Clinic whence gravity-fed water could be led to areas below 1390m.

Further infrastructure is planned, consequent to the construction of the Smithfield Dam, to serve areas in its environs although its prime function is to serve the southern Durban and South Coast areas. The construction timeframe for the Smithfield dam has moved out from 2022 to 2028.

5.3.7.2. Sanitation

No reticulated sewerage system has been installed within the ward and none is proposed. "Long-drop" toilets and Ventilated Improved Pit latrines are the order of the day. The former are to be found in the Qadi area whereas the latter are found, overwhelmingly, in the northeast.

The **northeastern area** already has widespread residential densities approaching 15 units per hectare. This form of sewage disposal at these residential densities might represent an uncomputed health risk, partly because overflow from the VIPs tends to be led into French drains and, given the untested geology, that there is some level of dependency on runoff in parts of the catchment, and noting that this area is in the upper reaches of the catchment, this is a cause for concern. The management of the VIPs requires attention, and preferably a strategic policy by the Msunduzi municipality.

The installation of a waterborne sewerage system in this western extremity of the municipal area, when areas 20km closer to the city have not been sewered, when the municipality is cash-strapped, when the existing Darville Waste Water Treatment Works is close to capacity, is highly unlikely even in the medium term. And yet, there is a compelling drive, indeed central government directive, to

densify. This report can but highlight this major issue and recommend investigation and resolution. At the very least, just as corridors for public open space and public pedestrian/ non-motorized transport must be identified, and kept open, so too should there be detailed planning which identifies, and then demarcates, service corridors in anticipation of some future date when these services will come to the area.

The next most settled areas, **in the southwest**, are within the Qadi Traditional Authority area. Some of these residential densities approach 4 dwellings per hectare in places, when measured over 8-9ha areas. Here, where VIPs are not presently constructed, the prevailing “long-drop” form of sewage disposal might not be inappropriate, in the short term. However, the Elands River has good quality water and it would be unfortunate were that to be compromised on account of sewage pollution. The municipality has applied for a Municipal Infrastructure Grant for the erection of 140 VIPs here, their exact distribution yet to be determined in consultation with that traditional authority.

In the central and southwest areas, sparsely settled, “long-drop” toilets are the prevailing system and no VIP is planned for municipal construction.

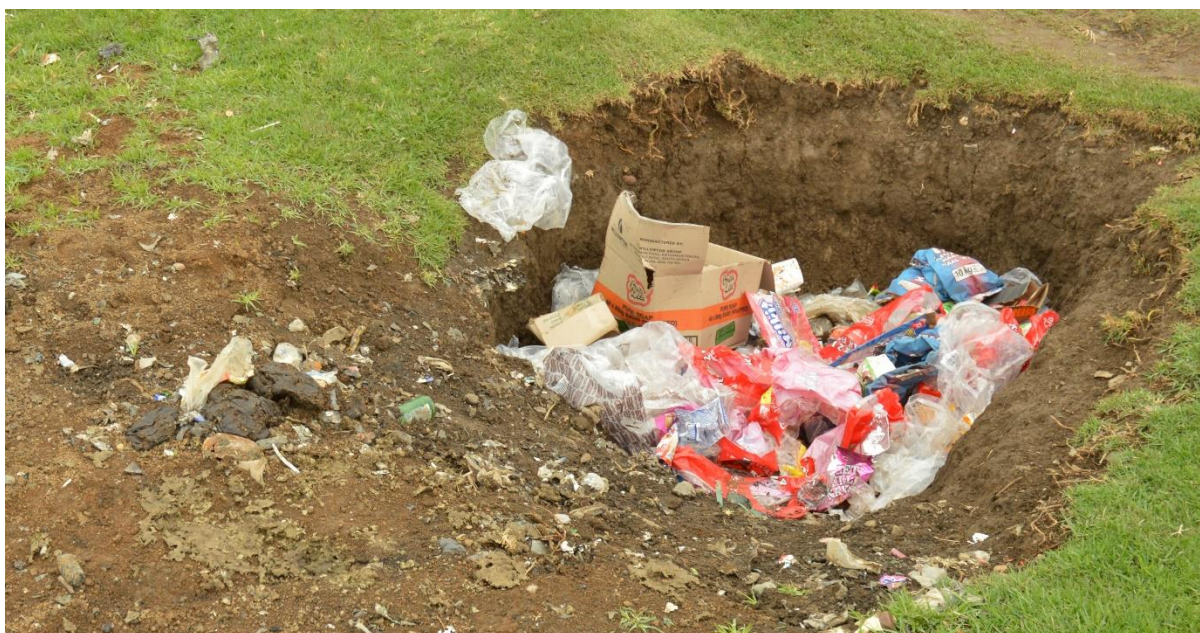
5.3.7.3. Solid Waste

There is no municipal collection of solid waste and so it is typically burned and buried on site. Such disposal brings atmospheric pollution and chemical loading, represents a net loss of recyclable resources and, depending upon the material so disposed of, can attract vermin, and thus the risk of disease from their proliferation. Waste disposal is a very real, and growing, issue in this ward. The numbers of bottle stores and taverns has resulted the dumping of whole but more often broken bottles. Waste disposal is a complex issue that requires strong political and management application and is unlikely to be resolved in the short term. This requires policy directives and could also provide some level of employment through recycling.

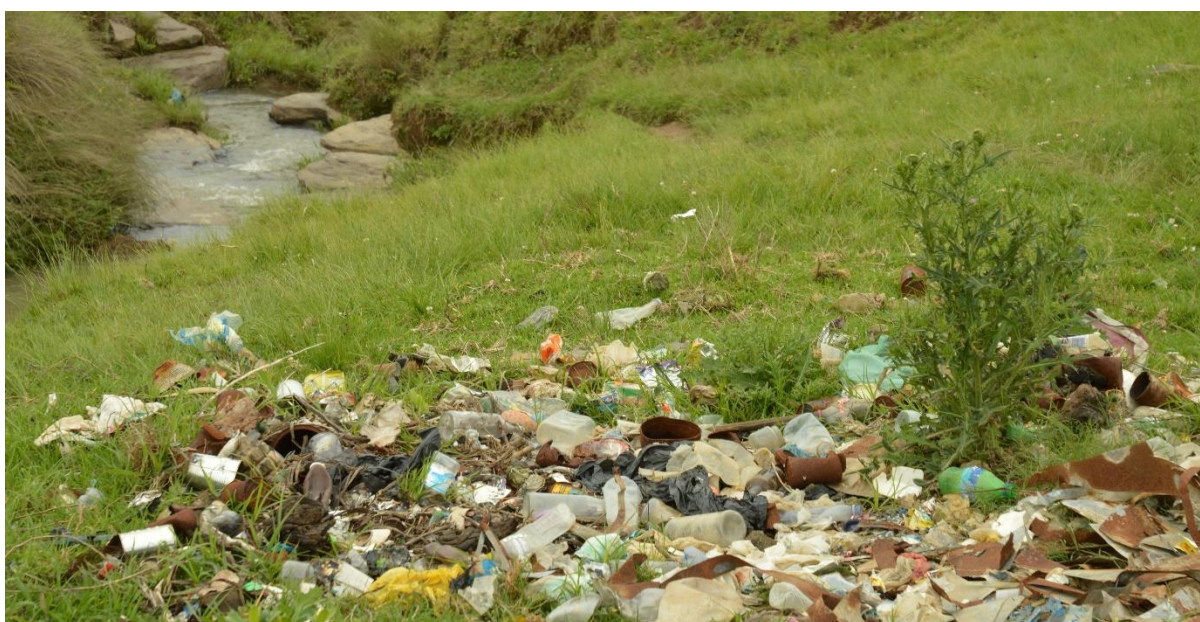
Figure 20. Illegal dumping



Location: North of intersection of P136 and P137 at 29° 42' 30.8" S; 30° 5' 11.82" E



Location: 60m SE of Songozima Community Hall: between road and Thuleleni Supply Store (29° 42' 27.25" S; 30° 6' 55.59" E)



Location: Adjacent D1124 at 29° 42' 1.86" S; 30° 7' 19.73" E

5.3.7.4. Energy

Energy, in this ward, is largely in the form of electricity used primarily for heating and lighting but with some cooking done on wood fires. The proportion of cooking done on wood fires is higher in areas south of Elandskop. The electricity supply grid largely follows the road system and which, understandably, is more intensively provided in the more populated northeast but where the grid is under stress. The Furth, Gundlintaba and Qadi areas are served by this grid which, as stated above, follows the roads in the more densely-settled area.

5.3.7.5. Cemeteries

Burials for non-immigrants take place within the *imuzi* sites, notwithstanding no study having been undertaken as whether the soil is suitable for such and what import such practice does/ may hold for pollution of ground water and/ or water courses. The 2017 Msunduzi SDF review does not address the subject of cemeteries. Umgungundlovu district municipality undertook a number of studies on the subject of cemeteries, and which studies made certain recommendations. Unfortunately no cemetery has been provided in the vicinity of this ward.

5.3.7.6. Fire Fighting Service

There is no proximate municipal fire-fighting service. The nearest Msunduzi municipality fire station is at Plessislaer, 34km by road from Elandskop Station and 56km by road from Ncwadi. One is proposed for Taylor's Halt, 15km by road from Elandskop Station, but no budget or timing for this facility has been adopted.

5.3.7.7. Telecommunications

The majority of the people in the ward rely solely on their cell phones for communications and the local community in the Qadi area complain of an insufficiency of signal noting that this has implications for communication with medical services in general and the Ncwadi Clinic in particular.

5.3.8. Movement and Circulation Frameworks

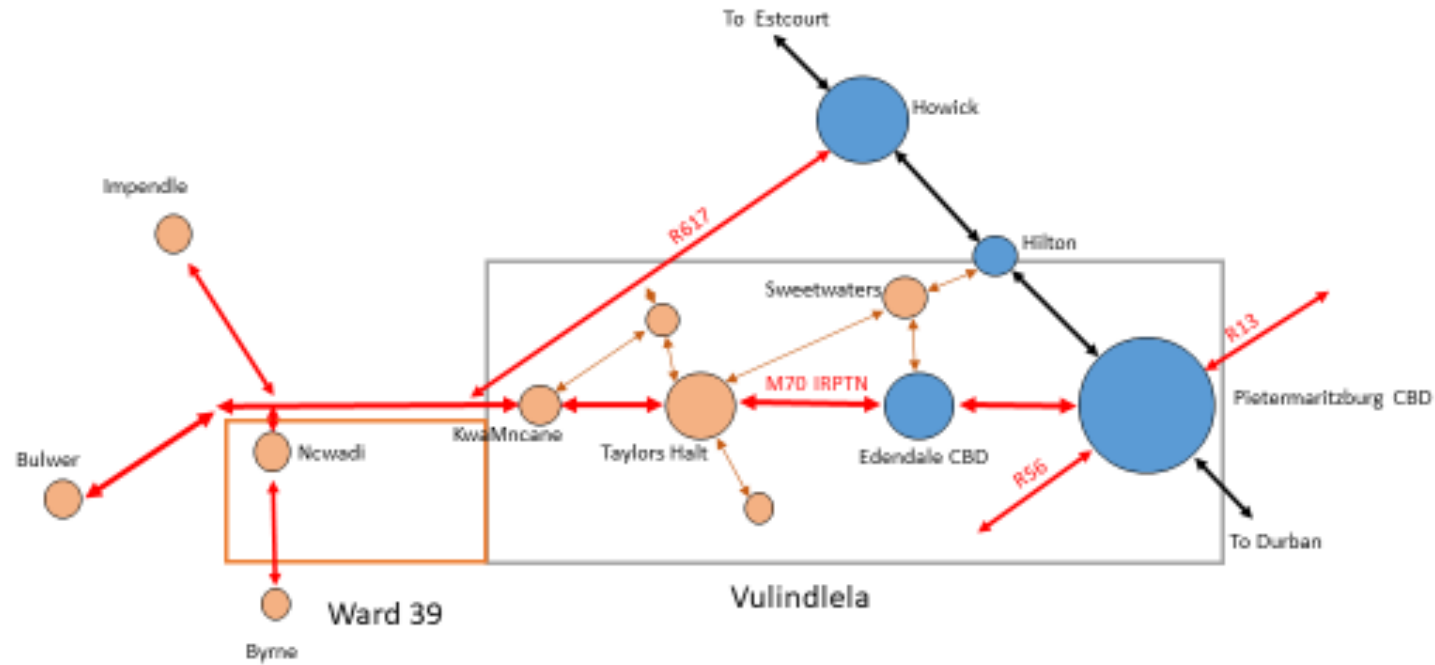
As noted in the VLAP (Isik 2016), ...*"The main concept for transportation in Vulindlela is to incorporate the rapid transportation network proposed for greater Msunduzi aimed at linking Northdale through the city centre with Edendale and Taylor's Halt. In order to achieve improved accessibility by all residents of Vulindlela to service and economic opportunities it is proposed that the M70 is established as the major transport "spine" of Vulindlela".* It was further noted in the VLAP that ...*"This should be accompanied by the upgrade of the rail network, which follows the M70 east-west alignment, to include both rapid passenger and freight transport. Rail is critical to the future development of Vulindlela and if upgraded could be used to reduce road traffic congestion and the carbon footprint of Msunduzi".*

In order to better integrate Ward 39 into Vulindlela and therefore the Msunduzi municipal area, the following proposal is noted with reference to Figure 21:

"That owing to the existence of an established and fully functional rail network and associated stations (current freight only) which traverses Vulindlela and Ward 39 there is an argument in favour of its upgrade to passenger status. This argument is strengthened by the fact that it is almost certainly too expensive (opportunity cost) to extend the R70 into the southwestern area of Ward 39 across state land to provide a road link to Msunduzi for these relatively isolated communities."

Figure 21 is also used to provide an indication of the location of Ward 39 in relation to the sub-regional transportation network. This suggests a higher level of integration of the settlements at Funze and Mpumusa (owing to road and rail access) and relatively poor integration at Qadi.

Figure 21. Current movement routes in Vulindlela-Ward 39



Source: Isik 2016

The main objective in this spatial framework for Ward 39 is to provide a logical basis for “breaking down space” such that all residents have access to service facilities through establishment of a hierarchy of centres and transportation routes as indicated in Diagram 1. In the northeastern area of ward 39, settlements are included into the Taylor’s Halt – KwaMncane hierarchy of centres and have access *via* the R70, the rail route and numerous lower order access roads to these centres. To ensure ease of access to services for residents at Songozima and surrounding areas, Elandskop station area is proposed as a mobile services centre in the northeast. If the proposal for the upgrade of the rail to passenger services is accepted, then Elandskop could also serve as a station for passengers travelling to and from other destinations along the line. Consideration could also be given to re-establishment of the livestock sales yard just south of this station.

In contrast, settlements in the Qadi area do not have direct access to sub-regional centres or major road networks although the rail route passes through the area (at this stage freight only). In order to break down space and make services more accessible to the residents of the area, a services centre is proposed at Ncwadi (similar to that at Hambanathi) with upgraded circular road links to defined spaces at Gudlintaba, Songizini and Maqadeni. The aim would be for these to be the routes followed for mobile services on a regular basis. Further detail on the planning framework for Ward 39 is provided in section 6. The proposal for upgrade of the rail to passenger status would allow for the re-establishment of Deepdale as a station for passengers using this service. There may also be merit in considering the re-establishment of the Ncwadi station in addition to a mobile services function in that area ⁶.

⁶ With the further development of Ncwadi, thought should be given to the construction of new premises for the tribal court and the free-ing up of the existing building (at the intersection of L2124 and L 2161), albeit fairly small (approx. 140m²), to such use. Immediately across D124 from that building is a smaller building (approx. 30m², and on a fenced site) which was used by Harry Gwala district for matters related to water provision. These could be re-purposed.

Diagram 1: Proposed movement routes within Ward 39

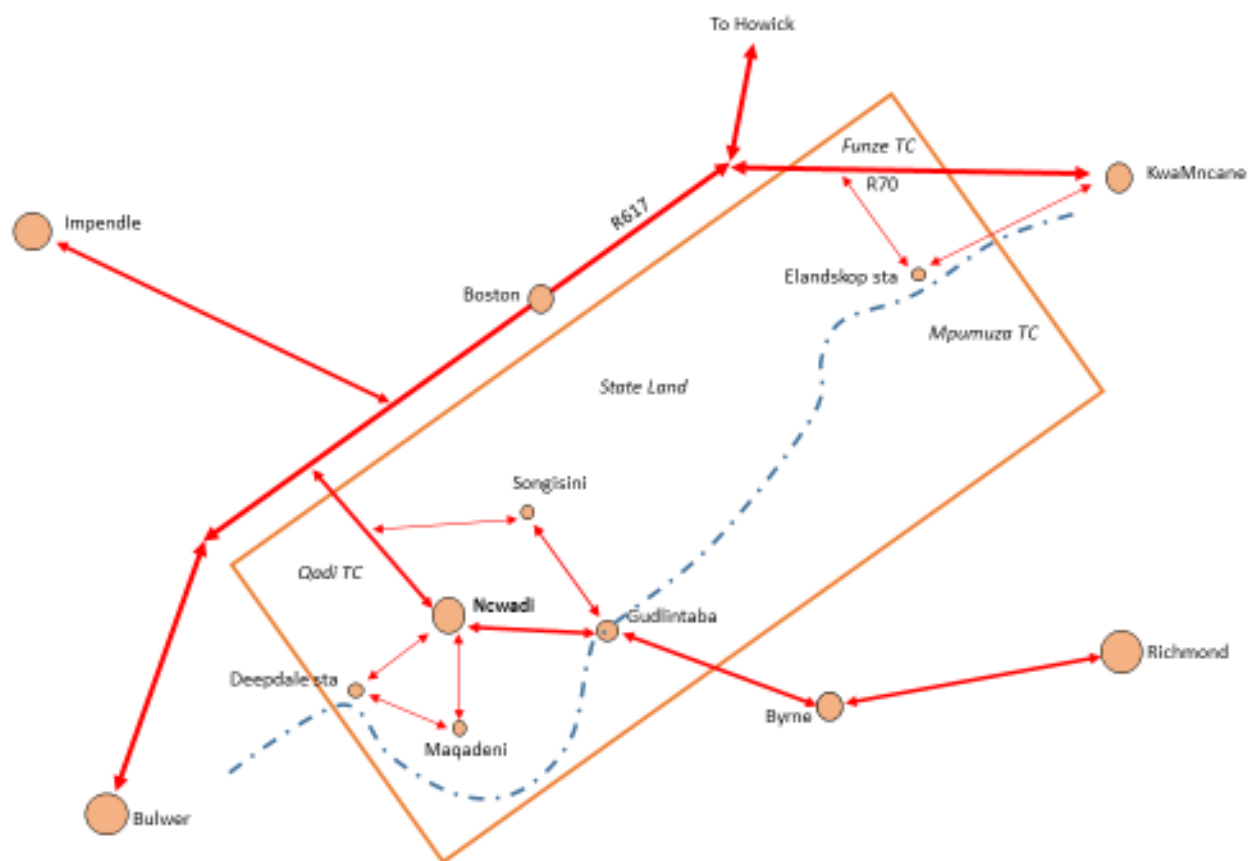
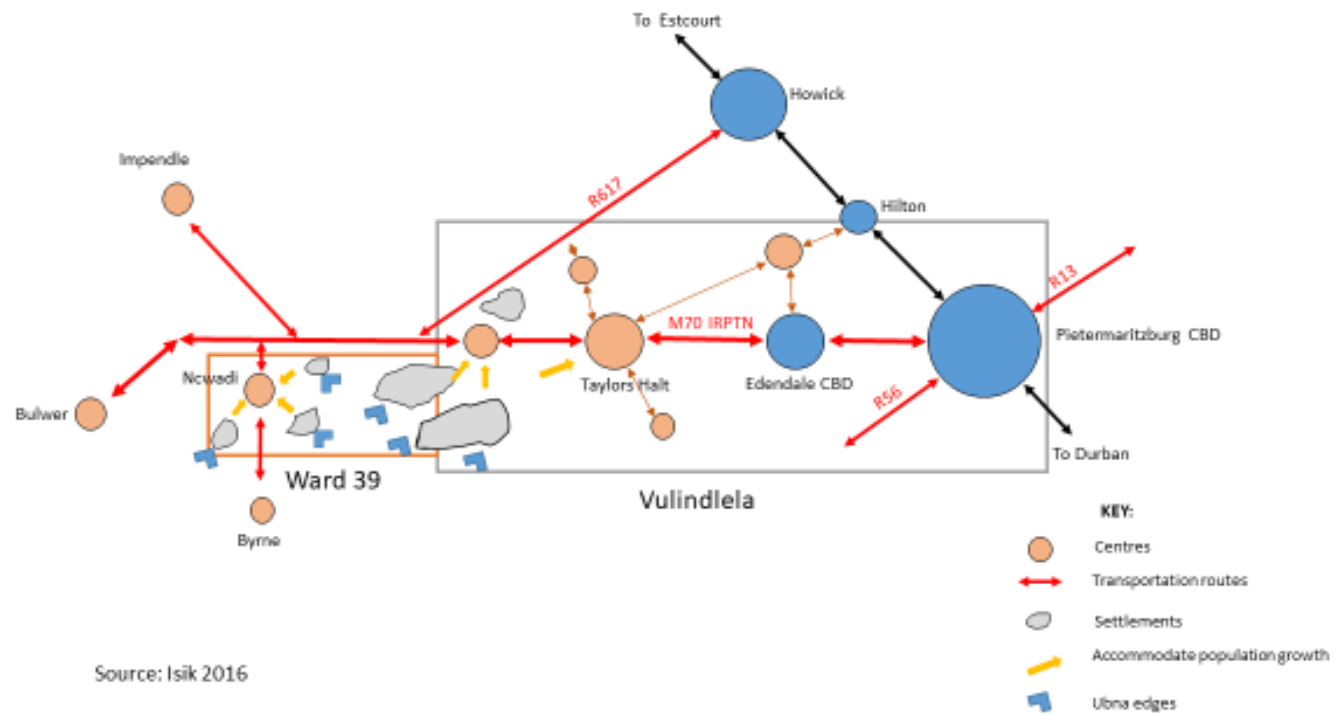


Diagram 2 provides an indication of the relationships between the existing and proposed centres (intervention areas) located within the greater Msunduzi Municipality with specific reference to Vulindlela and Ward 39. The hierarchical nature of these centres and their location on the transportation network is indicated in their relative size (circles) in the Diagram 2. The size and functionality of each of these centres has been established based on reference to the following factors: Msunduzi SDF, location on the local and sub-regional transport network, pressures for population growth, generative power of these areas to sustain growth in future, social services opportunities, economic opportunities and access to land for expansion.

Diagram 2 provides a spatial interpretation of the central principle underpinning this spatial framework for the Ward 39 LAP, namely *“future urban growth being accommodated in defined centre”* (beige circles on diagram). The implication is that further human settlement growth in rural areas (arrows on diagram) of Vulindlela should not be promoted or permitted by the municipality and traditional councils. In fact the existing edges of rural settlements should be used as edges beyond which no further expansion should take place in future (blue arrows on diagram). Further detail on the proposed location of urban edges is provided in section 6 of this document. Principles to be considered in defining different types of edges at a more detailed level of planning are included in Annexure 3.

In other words, as depicted in Diagram 2, the majority of future growth should be accommodated in the defined intervention areas (yellow arrows leading towards centres) in KwaMncane, Taylor’s Halt and Ncwadi. There is already evidence of urbanisation pressures in the areas surrounding Ncwadi (Gundlintaba and Maqadeni).

Diagram 2. Relation of urban to rural



Source: Isik 2016

5.4. Spatial Concepts

5.4.1. Concepts Used in the VLAP

A number of core planning concepts were identified in the VLAP based on inputs from national, provincial and local planning frameworks. These are summarised below and apply to Ward 39 Isik 2016, (Page 57-58):

- *“One of the main objectives of this plan is to integrate the greater Msunduzi open space system”* (Msunduzi SDF 2014) into the VLAP.... Thus all the river systems, wetlands, indigenous forests, grasslands and ridge lines should be aligned and linked with those identified in the other areas within the municipal area with the view to creating opportunities for green economy development in biodiversity rehabilitation, management and tourism.
- There are also a number of areas in Vulindlela with viewsapes and landscapes that need to be identified and quantified in terms of aesthetic, local cultural and tourism value. This needs to form part of a more detailed investigation at localised levels. These then need to be prioritised for management intervention to protect them against inappropriate forms of development.
- One of the aims of this plan is to concentrate future growth and development in the identified intervention areas/ centres. The pressures for further population growth in rural areas should be reduced, and even reversed over time, through the establishment of a hierarchy of well-located intervention areas properly developed to achieve their aims.
- In the process of reducing pressures on the rural landscape the objective should be to protect, rehabilitate and enhance both natural and agricultural capital in the area. These two resources are currently under severe pressure owing to rapid population growth in rural settlements over the past 15-20 years.
- In formulating the VLAP every effort has been made to follow national and provincial development plans and policies which increasingly indicate that there is a need to centralise future urban development in order to optimise efficiency, quality and sustainability. Hence one of the key objectives has been to seek ways of improving accessibility through the rationalisation of services and infrastructure in seeking to accommodate future population growth.
- The establishment of intervention areas is aimed at promoting diversification of the local economy. Making provision in intervention areas for high density residential development, and serviced land for commercial and manufacturing development is aimed at attracting private sector investment. The concept is to generate local demand for improved housing and services opportunities and a wider range of locally produced goods and services to meet the needs of residents of these intervention areas and surrounding local communities.

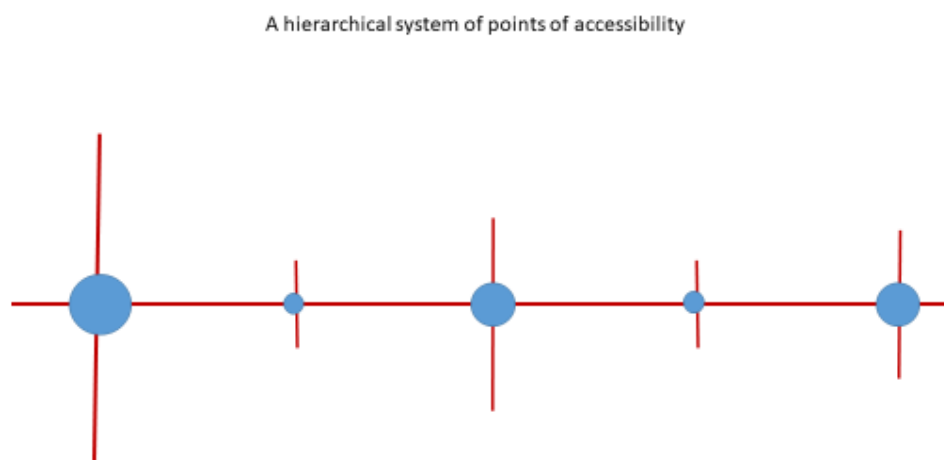
5.4.2. Additional Concepts

Additional spatial concepts have been included in this plan owing to the nature and location of Ward 39 relative to Vulindlela. In other words there are a number of additional factors that need to be taken into account in this ward plan such as: its relatively isolated location, one part of the ward

forming an integral part of Vulindlela (northeast) whilst the remainder is functionally part of the wider sub-region and this area being a recent and somewhat arbitrary add-on to Vulindlela/ Msunduzi as a consequence of the demarcation process.

The additional concepts are summarised below. These essentially derive from planning theory and the team's knowledge of local conditions and dynamics characterising the area, but also from reference to the accessibility framework and include the notion of a hierarchical system of points along an activity spine which connects places with different land uses inside of within, and the surrounding, urban centres in the hierarchy (Diagram 3). The hierarchy of centres is linked to a hierarchy of transportation routes, utility and social service facilities.

Diagram 3. Hierarchical system of points of accessibility



Source: Dewar and Kaplan (2004), Cited KZN DLGTA (2008)

The activity spine forms an integral part of both regional and sub-regional movement routes such that there is a wide range of connectivity at a number of levels: transportation (car, bus, taxi, cycle, foot), communications (landline, cell networks, data), market information (job and business opportunities), availability of services (availability and location of social service facilities), information on emergencies and warnings (radio, cell phone, computer).

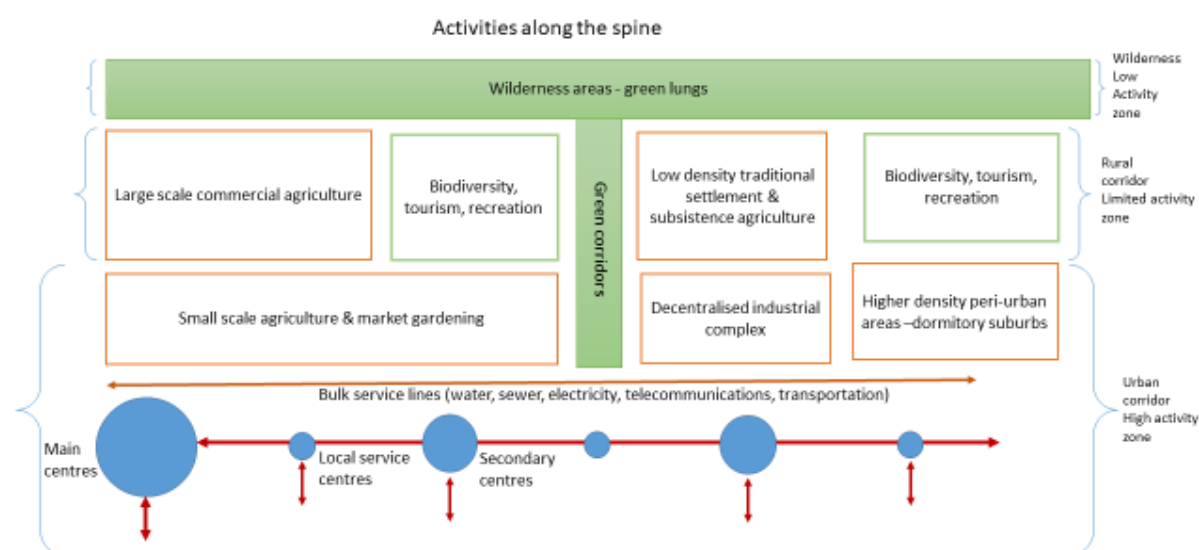
The planned activity spine typically links main, secondary and tertiary centres together into a differentiated hierarchy of functions: higher order services and functions in higher order centres and *vice versa*.

Immediately adjoining the activity spine is bulk infrastructure located to optimise accessibility and connectivity. This is followed by small-scale agriculture in close proximity to urban centres and markets – i.e. shortest most cost effective distances and routes for the sale of fresh produce. Large-scale commercial agricultural production is located further away from the activity spine in areas adjoining what is termed wilderness. Large scale agriculture, wilderness, green corridors and biodiversity hot spots all need to be interconnected to ensure sustainability (Diagram 4).

Manufacturing, industrial complexes and large scale retail outlets are located on the periphery of main centres. These are closely linked with high density *peri-urban* areas including a mix of income groups and types of housing (Diagram 4).

Low density traditional settlement areas are located in the hinterland areas along with wilderness and extensive agriculture and form an integral part of the green corridor sustainability complex of land uses (Diagram 4).

Diagram 4. Activities along the spine

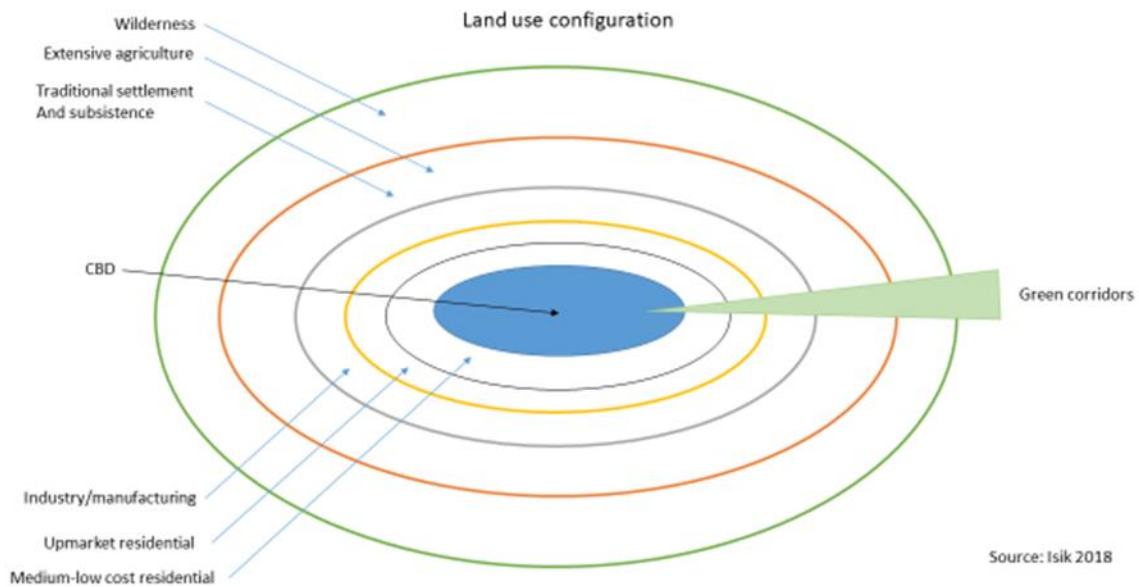


Source: Isik – Rural Planners Group 2008

In the urban centres the configuration of land use broadly includes concentric circles of development where the central areas (CBDs) include (Diagram 5): commercial centres, offices and high density residential opportunities (aimed at mixed groups). This is surrounded by lower density middle and upper income residential areas (can afford costs of transport) which, in turn, is surrounded by large scale sport complexes and manufacturing uses which can be used to define the urban edge along with waste disposal facilities, cemeteries and social services requiring large land areas. Small holder farming operations need to be located on the urban edge immediately adjoining urban centres to

enable cost effective transport and production. The outlying areas not included in the urban edge should be allocated to large scale food and ecological goods and services production and protected from urban sprawl in terms of defined green edge protecting wilderness areas (Diagram 5). Topography, landownership, history of development, social norms, local economy and transportation all have an impact on urban form.

Diagram 5. Land Use Configuration



5.4.3. Urban Design Concepts

The following concepts were applied in the broad layouts prepared for centres in the VLAP:

5.4.3.1. Housing

- Densification of existing settlement in identified centres through construction of walk-ups and multi storey complexes.
- The use of green field sites in urban centres to introduce new concepts such as that applied elsewhere within the Msunduzi municipal area (multi-storey complexes) as an alternative to low cost housing and self-built structures.
- Making provision for high density lower cost residential opportunities close to the business activities and opportunities of these centres and the middle and upper cost units further from the CBD.

5.4.3.2. Utility Services

- Making provision for bulk services which align with short, medium and long term planned future services demands in these centres.

- As one of the catalysts to sustainable development, the public sector creating an enabling environment for private and community sector investment: provision of bulk and reticulation infrastructure, serviced land, the full range of social services and incentive packages for investors.

5.4.3.3. Public Transportation

- In all levels of centres in the hierarchy noting the following:
 - Social service facilities to be located close to public transport hubs to minimise walking distances for pedestrians.
 - Provision for small scale commercial and services outlets should also be located close to public transport hubs for pedestrians.
 - Larger commercial facilities should be located on major sub-regional transport routes to enable access and egress of large vehicles and passenger delivery and passenger transport.
 - Making provision for easy access to employment opportunities by local residents in manufacturing and commercial complexes through walkways, cycle routes and public transport.
 - Emphasising the use of walkways and walking distances as key structuring elements in urban form to accommodate predominantly pedestrian traffic in these centres.
 - Separating large scale commercial, manufacturing and services areas from the smaller more compact pedestrian facilities to enable ease of access and egress and avoiding unnecessary conflicts and congestion.
 - Optimising on use of rail services for public transportation making use of revamped stations along the rail line which traverses the project area.

5.5. Levels of Service

- Following the principle of service levels contained in the accessibility framework (Isik 2012), making provision for higher order services in regional centres and lower order services in lower order centres.
- Following principles contained in the “Kit of parts” in terms of making provision for different levels of services in the hierarchy.

Diagram 6. Kit of parts

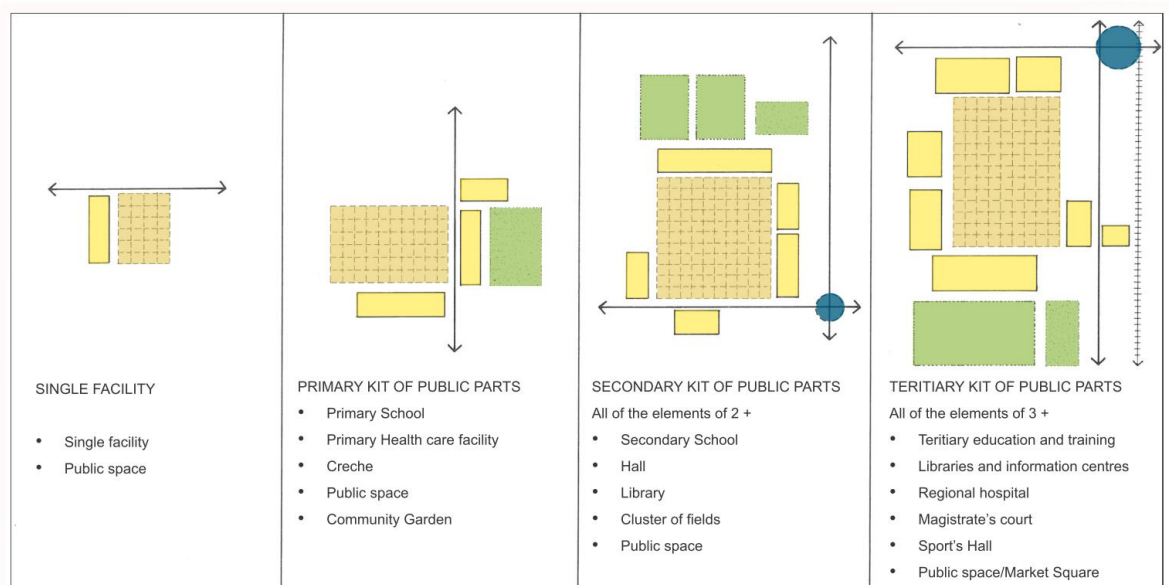


Figure 61: Kit or cluster of public parts (Adapted from City of Cape Town Municipal Spatial Development Framework, August 1999.)

Source: Department of Rural Development and Land Reform, 2016: Guideline for the provision of Open Spaces (Prepared by Isikhungusethu in Association with Dewar and Louw, p48).

5.5.1. Sense of Place

- All centres should strive to create a localised sense of place taking into account location, context and the need for public open space.
- Provision should be made for space for market facilities (periodic) close to pension pay points and transportation hubs to enable local economic development.

5.5.2. Edges

- Large scale facilities and selected social facilities and topographical features should be used to define urban edges and contain urban sprawl. Such facilities include industrial complexes, large scale sport complexes, cemeteries, sewerage works and rivers or small ridge lines.
- Green edges can also be defined by natural phenomena such as river systems, ridge lines, natural forests and grasslands and wetlands.

5.5.3. Rationalisations

- One of the key features of the accessibility framework is to seek to achieve the closing down of space for the majority of the population who have to make use of public transport and walking as a means of locomotion. Closing down space means making services more accessible by ensuring that there is a logical distribution across the landscape in identified centres and at different levels.
- Government line function departments have delivered in accordance with need following RDP principles and municipal planning processes (programmatic or menu driven approach). This has led to *ad hoc* distribution of public services (social and utility) throughout the region particularly

in traditional and state land areas. The effect is the over and /or under-supply of facilities and resources. The quality of the service is compromised and the people remain poor and the area under-developed.

- The argument in the accessibility framework is plan services delivery in identified centres. Make provision for higher and lower order services in different centres which are all linked *via* public transport. The aim is to rationalise on the number of services provided in order to improve on quality.

5.5.4. Useful Guidelines (Dewar and Uytenbogaard undated)

- Focus on achieving urban qualities (space, place, choice, convenience and opportunity) not simply shelter and amenity.
- Pedestrians, and not cars, must take precedence. Excessive amounts of space are devoted to vehicular traffic in urban design making space and distances inefficient. Settlements must be designed to perform well for people on foot, particularly in these outlying rural areas.
- The public environment is key. Traditionally urban place-making was built around public institutions and facilities such as squares, libraries, magistrates offices etc. In urban design the trend has been for housing, particularly low cost housing to dominate urban form and displace public space and facilities to the periphery where they are least accessible to the public.
- Partial planning in today's dynamic social and economic environment is far more appropriate than the current trend of comprehensive planning. In order to optimise the positive impact on spatial structure, opportunities for a framework of public actions should be considered.
- Note: one of the features identified in the project area was a number of primary schools where a selected number had very low pupil numbers.

5.5.5. Open Space

This ward's plan must develop an open space system and ensure its integration with that of the VLAP's adopted designs. The elements of that system will include the river systems, wetlands, indigenous forests, grasslands and ridge lines, partly to create opportunities for green economy development in biodiversity rehabilitation, management and tourism.

5.5.6. Viewscape and Landscape Management and Protection

There are a number of viewscape areas and landscapes within the ward and which need to be identified and evaluated in terms of aesthetic, local cultural and tourism values. This needs to form part of a detailed investigation at a local level. These then need to be prioritised for management intervention to protect them from development which would cause their loss or compromise.

In addition to landscape, there are also a number of topographical features which need to be identified and assessed in terms of cultural significance, tourism potential and viewscape. These include a number of features, including those depicted in the following photographs.

Figure 22. Northern Ncwadi overlooking the Mkhomazi River to the west



Figure 23. Rugged terrain 1



Figure 24. Rugged terrain 2



Figure 25. The buttress overlooking Songozini to its north



Figure 26. L2124 just east of Ncwadi Station: looking west

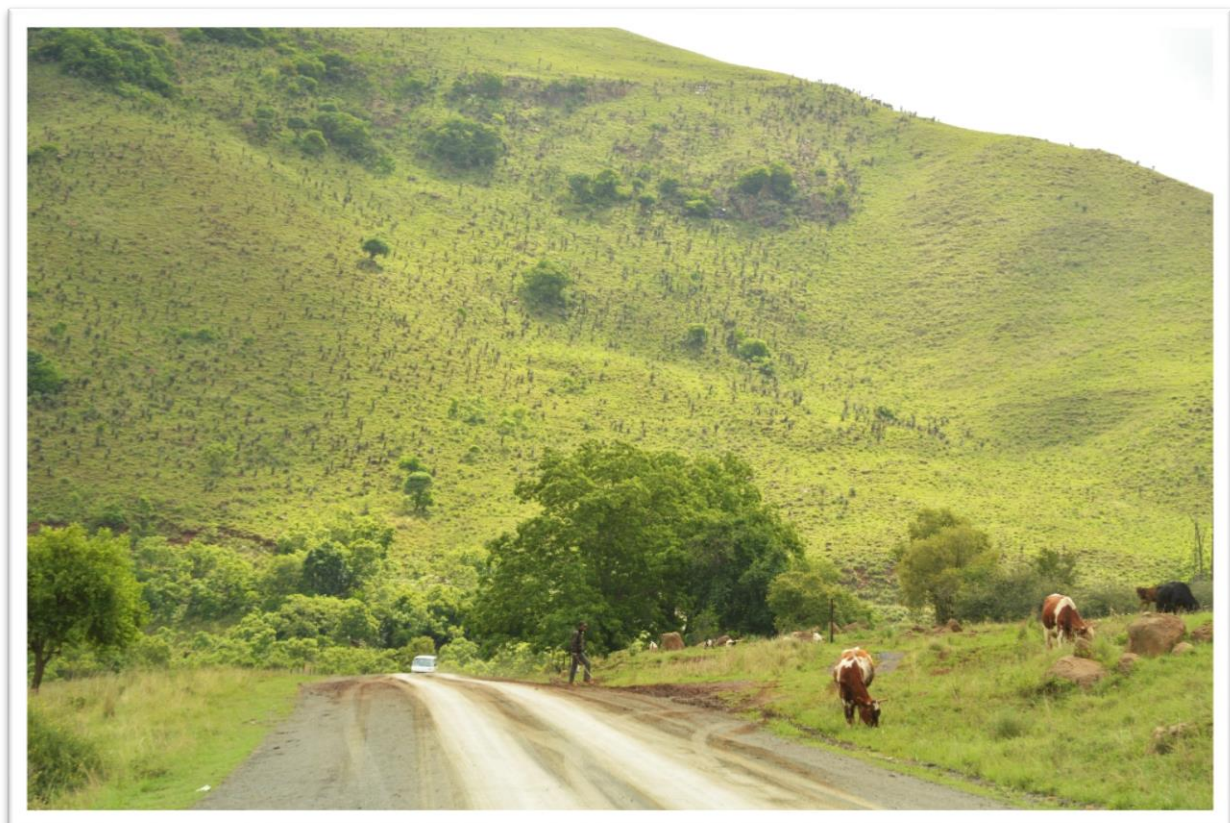


Figure 27. Elands River viewed from the L2124, just east of Ncwadi Station



The important ecological infrastructure components in the ward need to be linked up with the landscapes, viewsapes and topographical features in Vulindlela. In order to safeguard this ecological infrastructure against loss or destruction it is necessary to include elements in the to-be-developed plan. This, in turn, should be accompanied by local awareness creation and involvement of both traditional and municipal planning officials in effective management of these resources. This will require the definition of what may be termed “green edges” and “green corridors” to be included in any scheme as the basis for the introduction of effective management of these resources. Annexure 3 provides guidelines on how to define, in map form, an “Urban Edge” beyond which no construction may be undertaken because, on the one hand, the municipality will not service such land and, on the other, because the area beyond that line often has environmental or agricultural attributes/ values and so needs protection.

5.6. Proposed Spatial Framework – Application of Planning Concepts








5.6.1. Structuring Space

Following a non-programmatic approach to spatial planning (i.e. menu-driven) adopted in this project, the aim is to ensure that accessibility is improved for all residents to public services. As a result, use has been made of the accessibility framework referred to in the VLAP (Isik 2016). Owing to the major part of Ward 39 historically forming part of the NDZ Municipality, and to the ward’s distance from the Pietermaritzburg city centre, emphasis has been placed on its sub-regional linkages in the application of the accessibility framework i.e. residents gain access to services from surrounding centres. This is

a variation on the VLAP where the emphasis in services provision was on Taylor's Halt as the main centre for Vulindlela followed by the Msunduzi central area.

The hierarchy of centres followed in the VLAP has been applied in formulating the Ward 39 LAP however, with some amendments to accommodate variations not necessarily applicable in Vulindlela. In addition reference was made to more recent work on hierarchies in KwaZulu-Natal (Data World Africa and Kahn M (2015) and PGDS (2016), LM SDFs (2016), DRDLR Typology (2015) and Isik, Louw P and Dewar D (2017)) in order to update that applied in Ward 39. The outcome of this analysis is contained in Table 18 below with detail provided in Annexure 1. The result of application of the accessibility framework and the above revised hierarchy to Ward 39 is contained in Diagrams 7 and 8 below.

Table 18. Hierarchy of Centres

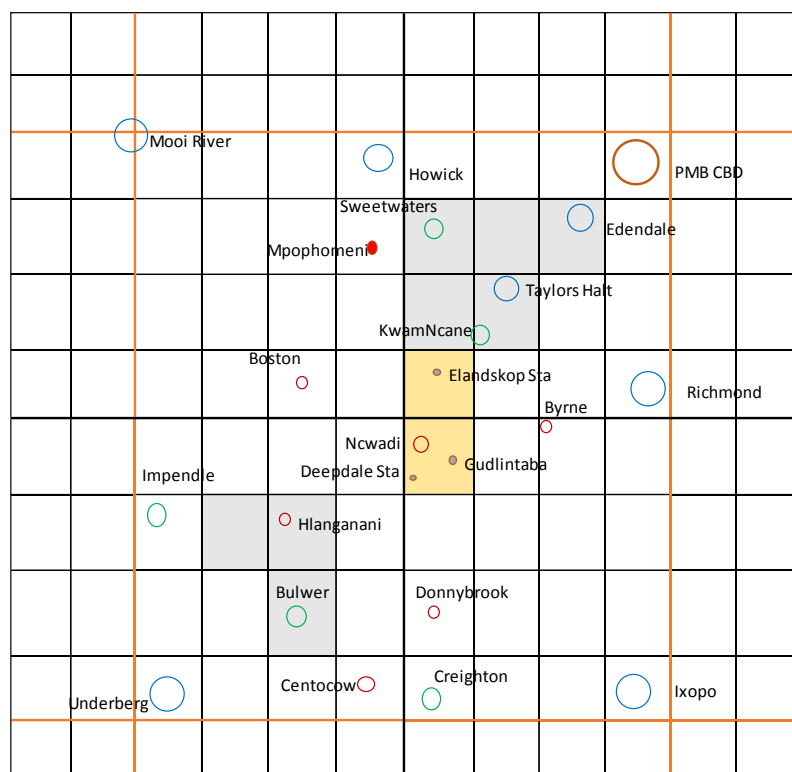
Location and Order of Centres (actual):	
	Traditional settlement (scattered, concentrated, dense)
	Townships and peri-urban settlement
	Fourth order centres
	Third order centres
	Second order centre
	First order centre
	Regional centre
	Ward 39 project area

The proposed hierarchy of centres for Ward 39, is indicated in Diagram 7 in a sub-regional context. This diagram demonstrates the application of the principle of "breaking down space" in a logical structured manner in order to enhance accessibility. Pietermaritzburg is the established regional centre in an area of up to 160kms in extent. This is followed by sub-regional centres (1st order) located approximately 40-80kms distant from one another at Underberg, Ixopo, Richmond and Mooi River. Second order centres are located 20-40kms apart at Impendle, Creighton, Bulwer, KwaMncane and Sweetwaters. In the proposed hierarchy Ncwadi is submitted as a third order centre (approximately 10-20kms apart) along with Centocow, Donnybrook, Hlanganani and Boston. The lowest order centres (4th order) are located 5-10kms apart at Elandskop station, Deepdale station and Gudlintaba. These 4th order centres perform a satellite function for the higher order centres in the Ward.

The type and level of services to be provided in each of the centres in this hierarchy is detailed in Annexure 2 of this report. In order to accommodate the densification and provide services to settlement in the northeast of the Ward, Taylor's Halt was identified in the VLAP as the major (first order) centre for this area followed by KwaMncane as a second order centre. This raised a question over the future of the residents of the Qadi area in Ward 39 owing to the accessibility and services

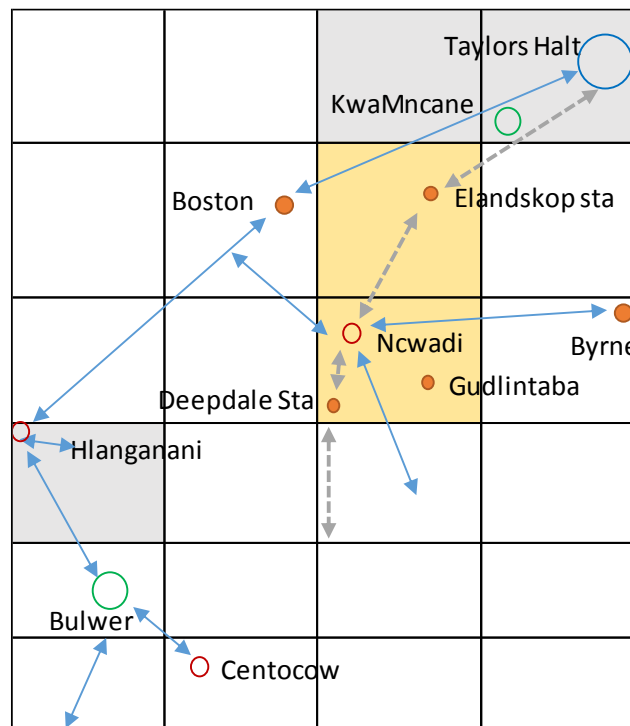
gaps experienced in this part of Ward 39. As noted the residents of this area historically gained access to services in surrounding centres including: Boston, Impendle, Hambanathi, Centocow etc. However, these higher order services are in the order of 20-40kms distant from residents and hence in terms of the principle of “breaking down space” this justifies the establishment of a 3rd order centre at Ncwadi to provide for the services of current and future populations in this proposed centre. The concept is for the establishment of a centre that provides social and utility services as its prime function (eg. Hlanganani). It is argued that the notion of a vibrant commercial centre is unlikely to develop in this area (see outcome of SWOT analysis) owing to its location in the sub-region and to the lack of economic opportunities in the area. As noted, detail on the type and level of services to be provided at Ncwadi is provided in Annexure 2.

Diagram 7. Proposed hierarchy of centres at macro level



The proposed location of the hierarchy of centres at a more detailed level is provided in Diagram 8 below. This indicates the areas of influence of Ncwadi as a third order centre and KwaMncane as a second order centre in the northeastern and southwestern parts of Ward 39. The proposed 4th order centres or mobile satellites are located at Elandskop station, Gudlintaba and Deepdale stations. As noted above, if the passenger service on the rail is reinstated then the two stations will double up as satellite services centres and stations for passengers changing mode of transport at these centres.

Diagram 8. Proposed hierarchy of centres at micro-level



5.6.2. Spatial Framework

The structuring elements of space (built environment) as contained in Diagrams 7 and 8 above will now be aligned to the natural elements in order to establish a comprehensive spatial framework for ward 39 which aligns with that of Vulindlela.

The spatial framework for the Ward 39 LAP provides an indication of future land uses in the Ward. Adopting and implementing this land use plan is a prerequisite to meeting the vision and objectives and the associated planning policies contained in the Msunduzi SDF and national and provincial development plans. The Ward 39 LAP spatial framework is structured in order to inform the preparation of a “wall to wall” scheme for this area as a requirement of SPLUMA.

The key components of the proposed land use plan for Ward 39, as depicted in Figure 29, include:

- Intervention areas which in turn include:
 - Residential.
 - Commercial.
 - Industrial/manufacturing.
 - Amenity areas.
 - Intensive agriculture.
- Residential rural (medium density).
- Small holder agriculture (medium and low density).
- Agriculture (arable, forestry and grazing).
- Open space (terrestrial and aquatic).

Further detail on the intervention areas is provided in section 6 of this document.

6. INTERVENTION AREAS

6.1. Introduction

The purpose of this section of the document is to provide planning guidelines for the future development of the intervention areas (precincts) identified as centres in Ward 39 and in the VLAP. As noted in Section 1.3.3 above, the intention of the Ward 39 LAP is *not to provide detailed planning, design and layout*, but rather to provide a spatial structure that can be used to inform the detailed planning as a subsequent phase of the project at precinct and detailed project planning levels (see Diagram 1). In order to provide a useful spatial structure for these centres it is necessary to “drill down” from ward level to a more localised level. Thus the policies, concepts and suggested levels of service identified in sections 2-5 of this plan will be applied and further detailed at this more localised level of planning.

Each of the proposed intervention areas or centres is considered separately in this section of the Ward 39. The information provided on each of the centres includes an indication of location in the ward, linkages with Vulindlela (where relevant) and further detail on the layout guidelines suggested for these areas.

6.2. Location of Intervention Areas

In this guideline, intervention areas are identified as the future developmental centres (nodes) in Ward 39. Each of the intervention areas is located on the hierarchy of centres and transportation routes envisaged for Vulindlela in the Msunduzi and also in the Inkosazana Dlamini Zuma SDFs. The location of these proposed centres on the sub-regional hierarchy is detailed in section 5 above.

In the VLAP the criteria used in selecting the location of these intervention areas was based on the notion of the “generative power” (ability) of these areas to sustain development and growth. Whilst this notion has validity for centres immediately adjoining Ward 39 in the northeastern area (KwaMncane)- owing to location, this is not necessarily the case for those identified in the Qadi traditional area located in the southwest. Rather the emphasis in centres in the southwest is for the provision of public services to people resident in a relatively isolated part of Vulindlela who otherwise would not have access to social and utility services.

The following intervention areas are identified in Ward 39 as an extension of those located in Vulindlela (see Figure 28 for location):

Vulindlela:

- Taylor’s Halt as the main centre of Vulindlela.
- Sweetwaters as a secondary centre.
- KwaMncane- Elandskop as a secondary centre.
- Mafakathini as a third order centre.
- Ngubeni as a fourth order centre.

Ward 39:

- Ncwadi as a third order centre.
- Elandskop, Gudlintaba, Deepdale and Maqadeni as fourth order centres or satellites.

In the Ward 39 planning process KwaMncane was confirmed as a centre for the population in the northeastern area. However, in the planning process it was necessary to review the spatial framework envisaged for this centre in the VLAP. This was due to the fact that it needed to be re-structured to better accommodate growth and development deriving from Ward 39 in addition to that provided for in the Vulindlela area.

At this juncture it is appropriate to contextualize the “intervention areas”. Within VLAP, the fact that the areas were being planned and conceived of for particular uses was itself a level of intervention. At a closer level, the geographically-specific intervention areas (be they, for example, for commercial or high density residential use) conceived of them being actively developed by one or other agency to specifically achieve that land use outcome in the fairly short term. Those actions would constitute the practical intervention. Within Ward 39 planning terms, it has been necessary to draw a finer distinction between types of residential areas where intervention is conceived. For example in the VLAP’s conception of KwaMncane, a large area, already resided upon at a fairly high density, was considered for intensive densification. The level of intensification/ densification would have implied a very high level of intervention even to the point, in certain areas, of land acquisition and group housing construction.

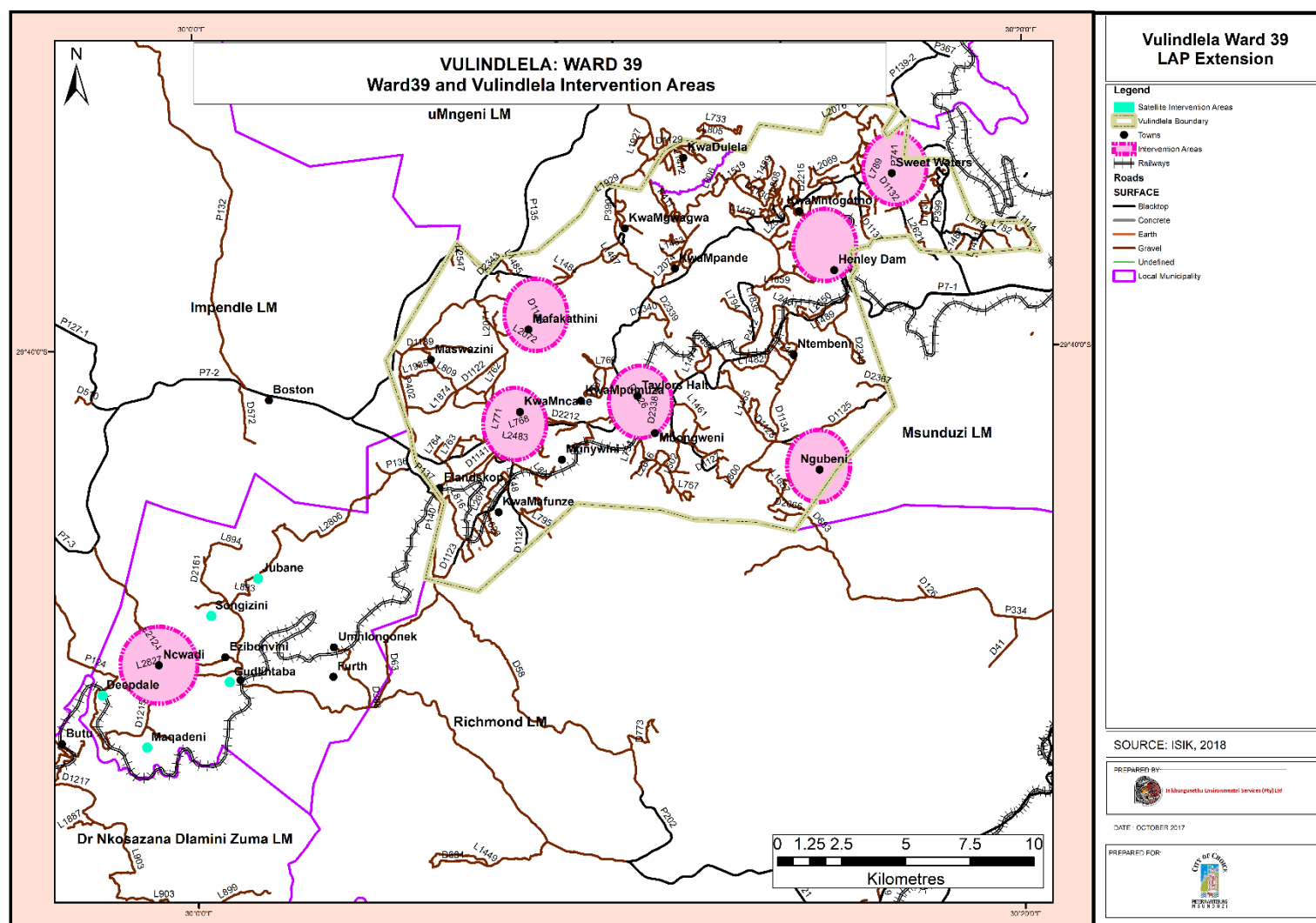
Within Ward 39’s planning exercise, and in it marrying with the western portion of the VLAP, it has had to be recognized that an accelerated approach to residential densification will have to be followed. To that end, whereas the planning scheme to come will provide for controls and incentives to achieve increased density within the VLAP’s previously-demarcated residential intervention area, this Ward 39 plan proposes a few “greenfields” sites, in particular, to the north of the VLAP’s intervention area for KwaMncane, and which sites are intended for placing on the Kzn Department of Human Settlements’ programme for funding and subsequent construction in the short-term ⁷. Thus there are two categories of residential intervention area: that which will be developed by state construction of residential stock, and that which will be developed by increment ⁸ over an extended time horizon.

The planning policies, concepts and guidelines identified in sections 2-5 of this document are used to inform the concepts which underpin the proposed layout and land use identified in the intervention areas which in turn address the developmental challenges identified in the *status quo* report.

⁷ further details relating to which are provided later within this report

⁸ and which will require significant funding in terms of at least adequate roads and matching stormwater drainage and the creation of servitudes for services.

Figure 28. Intervention Areas, Ward 39 and Vulindlela



6.3. Intervention Areas

6.3.1. Background

As identified in the analysis of the material gathered for this plan, Ward 39 poses a different set of challenges to those encountered in Vulindlela. In essence the Qadi traditional area is spatially and functionally separated from the greater Msunduzi municipal area in terms of history, allegiance, topography, accessibility, services (or lack thereof) and the state land buffer to mention but a few of the factors. In contrast, the settlements located in the Funze and Mpumuza traditional areas form an integral part of Vulindlela although remote and consequently marginalised from accessing Msunduzi/Edendale central areas and services. Despite this relatively remote location, the VLAP noted a population growth dynamic in the northeastern area of what is now Ward 39. In contrast it appears that whilst there has been population growth in Qadi since the early 2000s, this cannot be compared with that in Funze and Mpumuza. Owing to unresolved land claims⁹ on state land there is limited settlement and population growth in this area at the present time.

In the light of this background, the central challenge for this spatial framework is to identify ways in which integration and alignment of Ward 39 into Vulindlela can be meaningfully achieved. Selection of scenario 2 in section 4 and the conceptual framework in section 5 provide an important point of departure in the planning process to guide more detailed planning at a localised level. The factors which have been used in this plan to integrate Ward 39 and Vulindlela include: continuum of hierarchy of centres, transportation networks, accommodating urbanisation pressures and sub-regional linkages. Additional factors not included in the diagram, but dealt with in this section, involve services infrastructure, economic opportunities and various forms of land use.

Based on the concepts dealt with in earlier sections, the focus in this section of the plan is to “drill down” to precinct level in both KwaMncane and Ncwadi as identified intervention areas (section 5) and to work out some of the detail necessary to achieve integration into the wider Vulindlela area.

In essence, the inclusion of Ward 39 into Vulindlela has provided an opportunity to resolve some of the key challenges encountered in planning the KwaMncane precinct. These challenges were highlighted in the VLAP and included “...topography to the south (two incised valley systems), relatively dense traditional residential development all around the intersection, possible areas of open land for expansion to the northwest (on agricultural land) and very limited vacant land for small and large scale commercial, social services and industrial development”. Furthermore, in this review process concerns have been raised over the feasibility, in the short term, of successful residential area densification in the traditional settlement areas.

In the planning process it was recognised that to achieve integration of Ward 39 into Vulindlela and alignment of the two spatial frameworks (VLAP and Ward 39 LAP) the KwaMncane precinct needed to be revised and extended into Ward 39 to include Elandskop and surrounding areas.

⁹ There are currently two claims in respect of the area designated as “state land”. The one claim is by the Dlaminis and the other by the Qadi people. This matter is still under investigation by the Land Claims Commissioner.

6.3.2. KwaMncane-Elandskop

The original area of KwaMncane, identified in the VLAP, borders, on the northeastern boundary of Ward 39. In order to integrate these two areas and overcome the challenges associated with topography of the area, potential population growth on state land, the need for additional land for manufacturing/processing and residential densification in traditional areas of KwaMncane the following revisions are noted and outlined in Figure 32 (revised KwaMncane layout):

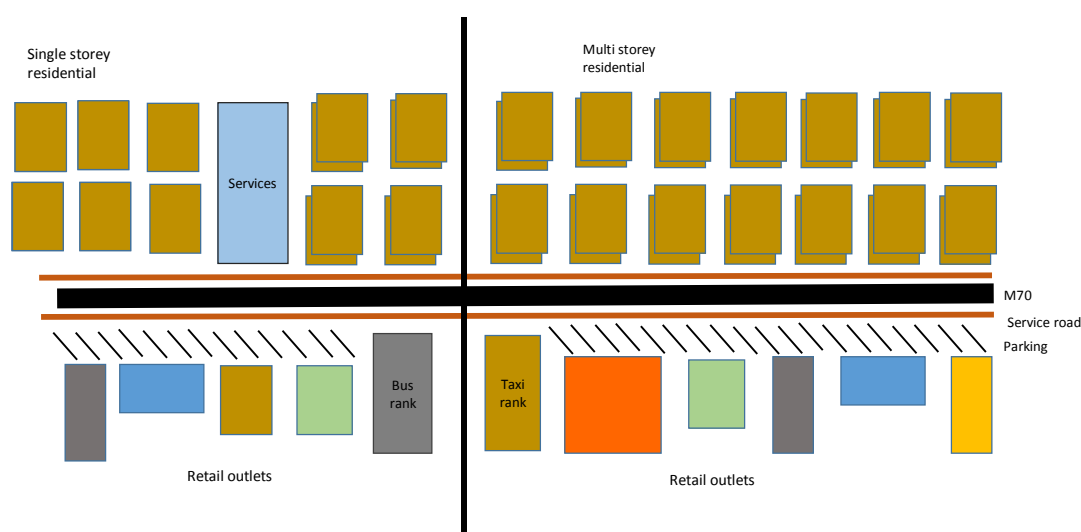
- Additional land identified for high density residential development identified to the north of KwaMncane on the inside curve of the L762 to accommodate future population growth.
- The area to the south of KwaMncane (VLAP) identified for industrial use has been converted into an additional area of high density residential development.
- A further block of high density residential land has been identified in Ward 39 located to the southwest of Elandskop station, on state owned land, to accommodate growth deriving from Ward 39.
- A small area of residential land has been identified to the west of Elandskop station adjoining the existing residential development to the west of the access road.
- Two other areas of residential land have been identified to the northwest of KwaMncane adjoining the M70 and the proposed area of industrial land.
- Elandskop station itself has been identified as a small mixed use area.
- Two potential cemetery sites have been identified. The first is a portion of land close to the M70 north of Elandskop station and the second is a triangular piece of land adjoining the proposed high density residential development southwest of Elandskop.

This review of the KwaMncane portion of the VLAP has resulted in additional land areas being included into what will become the developable area which is inclusive of land both in Ward 39 and the original Vulindlela area. This applies particularly to land for high density housing. As noted above, these additional areas are set apart from the traditional areas. The idea is to implement the type of high density housing erected at Foxhill by Msunduzi Municipality and to consider other forms of densification that may be appropriate for instruments contained in the Human Settlements subsidy programme. It is envisaged that the additional areas of land (Table 21) earmarked for residential development will accommodate the population increase anticipated in the VLAP in addition to that moving into Ward 39 over the next 20 years. Furthermore, based on trends in other *peri-urban* areas of KwaZulu-Natal, densities in traditional settlements tend to increase over time and this in turn necessitates formalisation and *in-situ* upgrades in order to accommodate improved services provision. However, it is noted that autonomous traditional area densification is unlikely to reach similar density levels to those conceived for the new greenfields areas included in KwaMncane in this plan.

6.3.2.1. Structuring Elements

The design of the proposed node at KwaMncane will be discussed under the different land use categories. The spatial concepts proposed for the central area of KwaMncane are included in Figure 29 and are based on those used in the VLAP. The spatial concept for the KwaMncane node is detailed in Figure 32 below.

Figure 29. KwaMncane: proposed land use (Diagram 9 in VLAP)



Residential Land

Table 19. KwaMncane residential projections (ex-VLAP Table 25)

Residential	Units	
2013	3188	structures
2033	15175	structures
Area for residential land use by 2033	264	Ha
Recommended units per hectare	58	structures
Potential surplus in hectares (existing & new structures)	0	Ha

Note: this table is to be read in conjunction with VLAP's Annex 4

Two important points from the VLAP's Annex 4 need be highlighted here:

- In reviewing the computations undertaken to generate the figures in the above table, the VLAP, in planning for a residential density of 67 units/ha, stated that this would equate to 100m² plots with double- and triple-storey units on them. This density was a calculated figure taking into consideration anticipated population growth by 2033 and available land area (i.e. that under settlement) following NDP principles of limiting further urban extension onto agricultural areas. The practicability of achieving this type of densification on settled land in traditional areas was noted, but the principle remains: a mechanism must be secured to achieve densification to accommodate future growth or else further agricultural land areas need to be released (and thus sacrificed) for this purpose, and increase in the efficient functioning of the urban form will not be achieved.
- Retaining a rural residential lifestyle and retention of land for grazing of animals will require leaders and communities, together with the municipality as the service provider, to think differently regarding land use, housing densities and housing typologies. It is not possible to

continue to allocate land in the current generous fashion. Land parcels will need to shrink significantly and double and 3-storey buildings will need to become part of the settlement fabric in order to retain the peri-urban lifestyle. Higher densities will not only require a mind-shift by the communities and their leaders, but will require municipalities as the service providers to provide effective open spaces, which will need to be maintained, good public transport and effective sewage disposal. The current ventilated pit latrines is not sustainable and cannot operate at the densities required.

- The abovementioned need for change is echoed in and mandated by a current review of engineering operations in South African municipalities. Deputy Minister, Andries Nel, speaking at the Vision 2030 Conference in Johannesburg on 20 June 2018 explained that engineering solutions in South Africa have to change. Five major requirements are: “... *strong measures to prevent further development of housing in marginal places; increased urban densities to support public transport; more reliable and affordable public transport and better coordination between the various modes of transport; incentives and programmes to shift investment towards dense townships; and focused partnerships with the private sector to bridge the rising gap housing market.*”
- Whilst it is acknowledged that the increase in densities is a gradual process, land allocation and human settlement design need to change now to accommodate the anticipated outcome.
- Since completion of the VLAP there is now evidence of what could be conceived of for high residential density at KwaMncane in terms of the VLAP. This is a form of development which was undertaken at the base of Foxhill ¹⁰ and as depicted in the two photographs (below) of the Aloe Ridge development. This development comprises 952 units in 35 clusters of three-storey walk-ups on an approx. 14ha property representing a *site* nett residential density of 64 units/ha.

Figure 30. Aloe Park Development at Foxhill : Google Earth image



¹⁰ at the intersection of the Richmond Road (R56) and Archie Gumede Drive in Pietermaritzburg.

Note: Annex 3 to this Ward 39 LAP refers to the need for a land owner/ developer to pay for all on-site improvements such as water- and sewerage-reticulation, internal roads, open space, storm water management and on-site parking. These elements comprised part of this development's costing structure.

Figure 31. Aloe Park development at Foxhill



- The KwaMncane high population and high density node is so conceived so as to, in effect, be the place where the natural population increase of large surrounding areas is to be catered for in a service-rich, highly-accessible, person-friendly, vibrant and safe urban environment.
- Let us now turn to the second reason hinted at above. If the Aloe Park development achieves only a little higher density ¹¹, on its *nett* site area, than the *gross* density ¹² designed for all 264ha shown in Table 19 above, then the *nett site density* of the developments which need to be constructed at this VLAP-conceived node might have to be even a little higher even than those at Foxhill. Significant amounts of the residential land so earmarked will have to be surrendered to public road reserves, pedestrian linkages, public open space ¹³, and a limited amount of retail/ shopping within those residential areas. Indeed there are already a number of substantial non-residential uses in the area and it is unlikely that these will be displaced by new residential use. Meeting that gross density target has major capital implications for

¹¹ 64 units/ha

¹² 58 units/ha

¹³ passive open space along the amenity reserves which will include stream edges where ecological resources are to be found and where ecological services are presently being performed, but perhaps active open space as well

service provision, inclusive of the road layout if this node, in the form of a town¹⁴, is designed to be efficient.

The notion of this type and level of densification in traditional areas of Vulindlela and Ward 39 is as yet untested and **IF** this level of densification were to be embarked upon, it would require absolute local buy-in due to the numerous consequences, as indicated below, of embarking on this type of development:

- very few of the existing homesteads (and their urban agriculture practices) are likely to remain within the “intervention area”;
- such a mode of development and extent of construction will demand massive amounts of investment; and
- Where burial sites are affected by new high density housing development, all must be done to work around such burial sites. Only in exceptional cases it may be necessary to exhumate and re-inter such person elsewhere. Depending upon the level of such local burials, the resultant residential density might fall far short of its intended goal and thus outcome.

Importantly, that residential intention **in the VLAP** was to be an “intervention”, implying that one or other authority would undertake that massive project, in effect, urban renewal in nature. As can be appreciated, such a large project would result in extensive upheaval if that goal of residential density were to be achieved. A number of complications might well compromise such a project, amongst which could/ would be the vexing matter of land acquisition. For example, would the municipality or the KZN Dept of Human Settlements acquire¹⁵ the land from the land owner (the Ingonyama, or that trust, or the occupier who paid over monies¹⁶ to the *inkosi/ induna* for such occupation) and would it then have to additionally compensate the building occupiers for the loss of their structures? There is no known example of such acquisition within KwaZulu-Natal. As a consequence of these considerations it is believed expedient to include alternatives (i.e. greenfield sites) to that model. Within conventional planning schemes and those land markets, such higher density rights accorded through a planning scheme¹⁷ would ordinarily be taken up by developers purchasing such land and buildings from the owners, and re-developing those properties and then selling on their constructions. Those conditions do not obtain here and, in any event, given the scale of this area, this would truly require intervention.

Although significant provision for high-density residential living is necessary to accommodate the population growth from a large area, it is felt necessary to provide a relief valve of sorts¹⁸, and just leave the large swathes of intended high density residential areas to still be accorded a goal of densification, but without it being a direct intervention in the short to medium term. However, in the longer term as densification takes place in these traditional areas, accompanying development of the node (as the case of Sweetwaters, Henley dam etc), then provision will have to be made for formalised

¹⁴ 15175 structures at an assumed household size of 4 = ±60 000 people

¹⁵ by purchase or expropriation

¹⁶ and/ or other assets

¹⁷ which will follow the VLAP and this local area plan

¹⁸ while the environment relating to land itself settles somewhat

interventions to resolve health, safety and infrastructure requirements. The concept applied in the VLAP was based on homeowners seeking to establish 2-3 storey walk ups (i.e. vertical expansion as opposed to horizontal) to accommodate growing families in traditional settlement areas. This can be achieved by utilising the different state subsidies available in the Human Settlements Programme with support from municipalities and the private sector.

In the Human Settlements and Subsidies Programme (www/human-settlements-programmes-and-subsidies.pdf) provision is made for a variety of tenure upgrade, township planning, infrastructure provision, land acquisition and housing upgrade and construction interventions¹⁹. Opportunities for a variety of financial and technical support is provided to municipalities and individual homeowners by the state to fulfil housing needs in urban and rural areas on private, traditional and state owned land. The programme is flexible, innovative and responsive to human needs and provides opportunities for densification in traditional areas.

Whereas the VLAP could not, in its proposals, take into account the ex-Ingwe land, the inclusion of this land into the Msunduzi municipal fold enables a revised approach. One benefit of this is that it provides the opportunity to plan not-yet settled land and to consider the KwaMncane/ Elandskop relationship.

It is believed necessary to provide a physical intervention in the form of the construction of at least one government-funded housing project to act as a catalyst/ a model to kick-start that wider conversion. A few areas shown in Figure 32 are here identified to that end. One, the largest, is in an elevated position to the north of and overlooking the KwaMncane node, another comprises the “tongue” of land near Elandskop Station, bounded by rail line, while three others lie generally to the west of Elandskop Station, namely in the ex-Ingwe portion of the ward. Collectively, these and other proposals would serve as unifying agents across the ex-Ingwe/ Msunduzi administrative boundary. These are proposed to be constructed at a density similar to the afore-mentioned Aloe Ridge development near Foxhill in Pietermaritzburg. Whereas the VLAP high-density residential land provision need for 2033 within the KwaMncane portion of the VLAP was to provide for the 2013-2033 population growth within a wide area which included the Funze and Mpumuza traditional areas within what is now Ward 39, these additional residential areas²⁰ will provide also for the population growth within the rest of Ward 39.

Provision for additional high-density residential land in both Vulindlela and Ward39 LAP is made to accommodate the anticipated 2013-2033 population growth. The land areas²¹ identified for densification in KwaMncane-Elandskop provides for the population growth within the rest of Ward 39.

¹⁹ Human Settlements Subsidies institutions includes: (i) Public Sector Hostels re-development programme; (ii) National Housing Finance Corp; (iii) National Reconstruction and Housing Agency; (iv) Rural Housing Loan Fund; (vi) Housing Development Agency. Programmes include: (a) Integrated residential programme; (b) Individual subsidy programme; (c) Enhanced people’s housing process; (d) Consolidation subsidy; (e) Rural subsidy: communal land rights; (f) Finance linked individual subsidy; (g) People’s housing process.

²⁰ importantly, “greenfield” sites

²¹ importantly, “greenfield” sites

If this conversion to high density ²² in what was the VLAP's intervention area in KwaMncane is to succeed, mechanisms within the future planning scheme ²³ will need to be developed to both encourage appropriate high density development and actively discourage densification which falls below a certain threshold.

In the VLAP provision was made ²⁴ for extensive community representation and participation in dealing with the notion of densification in the intervention areas. Provision was also made for establishment of a joint structure (municipal-traditional) to initiate implementation of land use management in the area.

Commercial Land

The VLAP designed this to lie to the south of the M70 and west and east of D1124's intersection with it. There are some commercial establishments in each of these two components: the eastern ones are laid out in strip-development fashion but are set back from the M70 and its section of Armco protective railing. Such arrangement will, as discussed in the VLAP, permit a short service road to be constructed where a gravel track presently exists. If a service road is to be constructed over the full length of the intended commercial area, and which it should, approximately 15 buildings will need to be demolished. South of those commercial establishments lie many homesteads which will have to make way, over time, for commercial uses if the "zone's" the full extent of 38ha is to be realised, and with that will be needed a proper road network of at least two blocks' depth.

However, in looking at the KwaMncane/ Elandskop relationship, other opportunities for Commercial/ Mixed Use suggest themselves. As was highlighted in the *Status Quo* report, Elandskop was a commercial hub of some magnitude in the early part of the 20th century. Two sites seem primarily to have catered for retail and other needs: they lie to the east of the P137 and are separated by the D1141 in close association to Elandskop Station. The well-located and formerly developed portion of the northern site was a narrow strip of platformed land on which a petrol filling station, a motor garage and a general dealer shop stood. These land, plus additional land to its north towards the river can again fulfil that function. The second site, close to the station, presently with commercial/ industrial buildings should again fulfil that function. These are shown on Figure 32.

Industrial Land

The VLAP provided for a 40ha tongue of industrial/ manufacturing land, largely circumscribed by the railway line, which would have to be provided road access *via* the P137 and P140 near Elandskop Station. It is believed that this land rather presents an opportunity for high density residential development (discussed above) and so a replacement parcel of suitable land should be provided in its stead. It is proposed that this be located on ex-plantation land just to the west of the P137/ M70 intersection. It could still, as proposed in the VLAP, possibly be of an agri-park nature ²⁵ and include

²² or at least significantly higher

²³ or at least linked to it

²⁴ at Section 8

²⁵ and of a light industrial nature

a range of related service industries. Naturally, such use will naturally be subject to planning, and environmental and agricultural approvals and the full support of the local traditional structure.

Social Services

The VLAP provided for 22ha^{26 27} for this use on then largely unsettled, but agriculturally productive, land set between residential areas and the stream, in the northwest of the node. The decision to sacrifice that valuable land was difficult. Not all of that 22ha will be able to be used for this use because of the natural drainage channels which drain to the stream to the north. It is mentioned that Ward 39's boundary now covers part of the Social Services area in the extent of 6ha.

Following the NDP principle, the aim here would be to relocate the scattered social services facilities located in surrounding rural areas and in the process to improve the quality of services provided particularly in health, education, security and welfare services by placing them here, at KwaMncane. If this is to occur with least disruption to the existing residents in this area, a stop will have be placed on the continued residential settlement and construction in this area.

Table 20 below provides an indication of the types and levels of services appropriate to KwaMncane as a level 2 centre (Figure 28). However, owing to limitations on land available in the KwaMncane footprint, the aim should be to build fewer, but bigger and more comprehensive, facilities to serve the population of this area. The number and scale of the facilities required will have to be determined at the detailed design stage. Once the type and level of services for KwaMncane have been finalised, it may be that the land area allocated for social services facilities will have to be increased to accommodate the facilities required.

Table 20. Types and levels of service for KwaMncane (with reference to VLAP's Table 26)

Order of kit	Sector	Facility
Secondary kit (inside urban edge)	Education	Primary school
		Secondary school
		Mobile library (if insufficient for library)
		Library/Resource centre
	Public space	Public space
	Health	Mobile clinic (if insufficient for clinic)
		Clinic
		Community health centre
	Judicial	Traditional court
	Police	Satellite police station
	Postal	Post office

Source: Demonstration Project on Capital Investment (Isikhungusethu, 2012)

²⁶ The figure of 8ha was erroneously used in VLAP

²⁷ An area just smaller than Pietermaritzburg's block bounded by Chief Albert Luthuli, Langalibalele, Boshoff and Burger Streets

Intensive Agriculture

This use is provided for on the northwestern and northeastern edges of, and abutting, the node, in the extent of 53ha.

Sport and Recreation

Active open space in the form of a sports stadium with a limited number of facilities needs to be established in KwaMncane as there is no such facility in the area at the present time. This is proposed on 0.6ha in the northwest adjacent to the Social Services area. This would not be a full stadium, as envisaged for Taylor's Halt, but rather a lower order facility for a range of sport codes for residents of this node and its immediate environs.

Passive open space is provided for in the form of 91ha of two environmentally important riverine areas plus another 7ha of stream-edge amenity area.

In addition to the KwaMncane considerations above, a parcel of land Public Open Space (Passive) ²⁸ is designed for immediately adjacent to the existing community hall at Elandskop and in close association with the afore-mentioned Commercial/ Mixed Use area.

Cemetery

The practice in this area is for family members to be buried ²⁹ within the confines of the *imizi*, with the bodies of in-migrants from beyond this area having to be buried/ disposed of elsewhere. The entire matter of the provision of this service within the district has been the subject of a number of investigations and reports over many years and yet provision falls far short of need by a very large margin. 3.3ha of cemetery **was** provided for to the east of the KwaMncane intersection but it is a fairly steep site. Two larger, flatter, site has been identified between Elandskop station and the M70. Either of these is proposed in the alternate, one location perhaps being preferred to the other. The more northern one, being on ITB land might be more easily acquired for this purpose. Naturally, the necessary environmental approvals will first have to be sought and secured.

Urban Edge Definition

The matter of the Urban Edge was referred to in this project's Vision Report ³⁰, and dealt with in depth within the V LAP's 7-page Annex 4. Over and above this Ward 39 project, it is vital that the municipality adopt a definition of an Urban Edge, and to implement it by defining such throughout its area of jurisdiction and by planning the provision of its services accordingly.

²⁸ As suggested by Table CC, but also in satisfaction of the "kit of parts" construction discussed in Section 5 above.

²⁹ Some families wishing to, some having to.

³⁰ *The uniform provision of high-level services at no cost to the end user [or below a cost-recovery threshold] has become unsustainable for municipalities in general, and Msunduzi in particular. Consequently, an appropriate policy needs to be formulated and adopted by council which allows for the differential provision of services in rural and urban areas. This should provide for the highest order services in defined centres and only the most basic services in rural settlements located outside of the ambit of defined centres. Such could be spelled out within the context of "urban edges" or a "municipal services edge".*

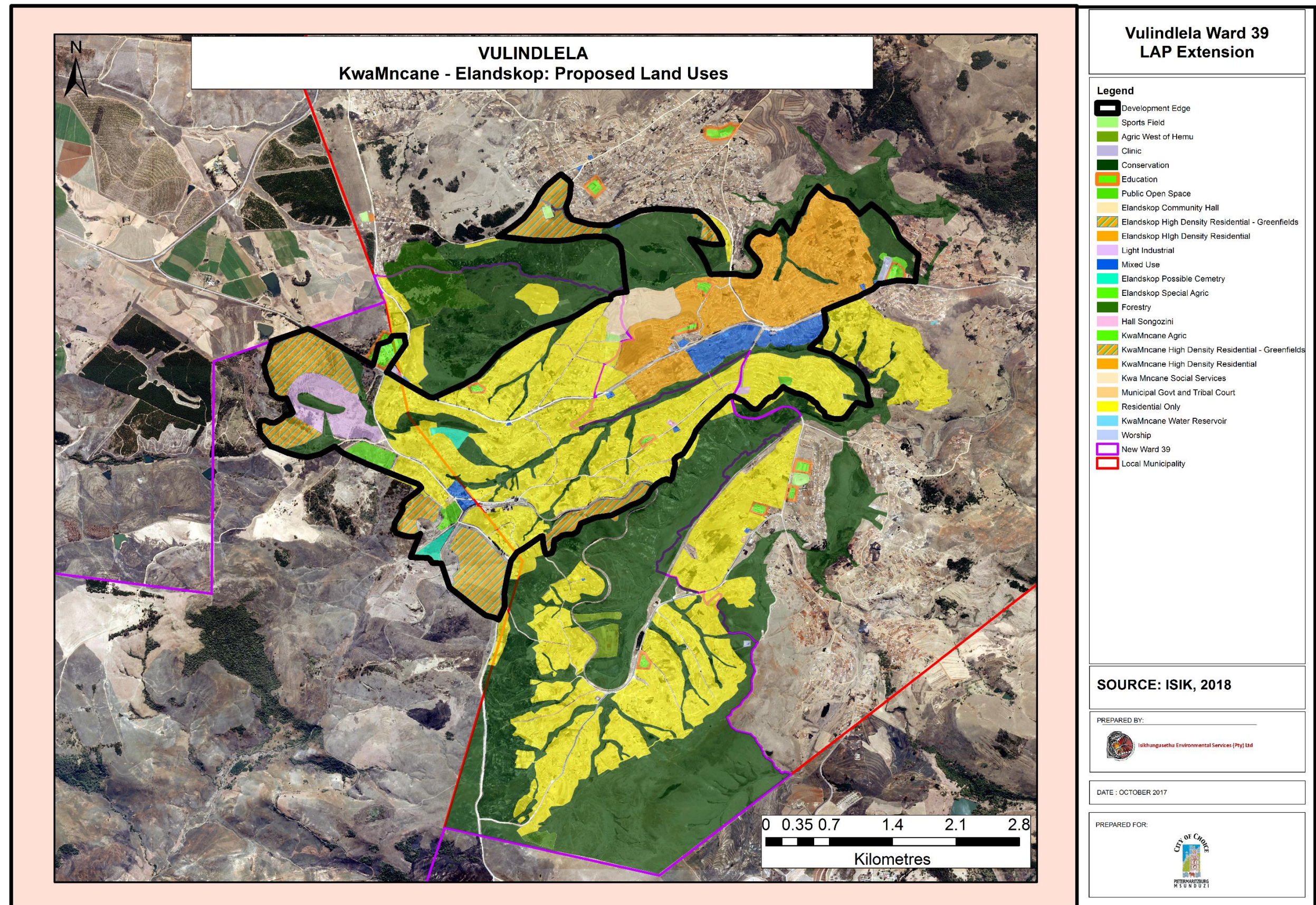
Summary

As will have been appreciated, the adjustments made to the various and necessary modifications made to the VLAP land use provisions discussed above require the generation of a replacement map to depict these recommended changes, and also a replacement table of areas for those different land uses. These are shown in Table 21 and Figure 32 below.

Table 21. KwaMncane-cum-Elandskop land development uses and areas for the Intervention Area

Land use	Hectares 2033
High density residential above KwaMncane	58.5
High density residential at Elandskop	123
Commercial/ Mixed Use at KwaMncane	27
Commercial/ Mixed Use at Elandskop	4
Industrial at Elandskop	37
Social services at KwaMncane	22
Intensive Agriculture at eastern KwaMncane	53
Active Open Space/ Sport at KwaMncane	0.6
Active Open Space/ Sport at Elandskop	8
Passive Open Space/ Conservation in KwaMncane plan	97
Passive Open Space at Elandskop	3
Cemetery (alternate sites)	8.4 & 5.1
Total land area	447

Figure 32. KwaMncane-cum-Elandskop Intervention Areas



Utility Services

A review of types and levels of services for intervention areas is provided in section 6.4.3 below.

6.3.3. Ncwadi

6.3.3.1. Location

Ncwadi node, largely stellar in shape, is to be found where D1215 meets P2124. It lies between steep land to its west and south and the river on its east. It lies largely about P2124 on its W-E and S-N axes.

6.3.3.2. Linkages to Surrounding Areas

The main linkages to and from Ncwadi are *via* the above-mentioned roads, and which must be added the more recent D2827. P2124, through Ncwadi, links the R617 (to Bulwer, Boston, and Howick) with Richmond, whilst access to Deepdale may be gained directly *via* D2827 or *via* Mdutshini along the D1215 to the south. The last-named also links to Buto³¹, *via* the completed-in-2017 bridge over the Mkhomazi River. All are surfaced gravel roads with an active maintenance programme.

Table 22. Ncwadi: Shortest road distances (km) to nearby/ significant nodes

Ncwadi intersection	To										
	Boston	Pholela	Byrne	Impendle	Richmond	Taylor's Halt	Bulwer	Mphopho men	Howick CBD	Edendale CBD	Pmb CBD
	17.8	25.3	27.5	33.5	36.0	36.6	37.9	44.0	51.3	56.3	63.1

6.3.3.3. Spatial Structure

In order to make provision for existing needs, and at the same time anticipate future growth and expansion of population in this part of the ward, it is proposed that Ncwadi be established as a higher order³² services centre³³. This should include a range of social and utility services³⁴ and opportunities for the densification of residential development in appropriate areas. Such development should accommodate a range of types of housing to meet the needs of different income groups. It is necessary to develop a notion of centrality for the CBD component to create a local identity and sense of place. Some agriculture is undertaken within the node and it is important to retain this activity while at the same time not allowing more low density sprawl to consume that productive resource. Some processing of local agricultural products, and sale to the resident population, is to be

³¹ in the Dr Nkosazana Dlamini-Zuma municipal area

³² third order centre

³³ not just services related to government itself, e.g. social services, but also those related to the serving the needs of the proximate agricultural area.

³⁴ recognizing that there will be substantial and higher-order provision for such at KwaMncane

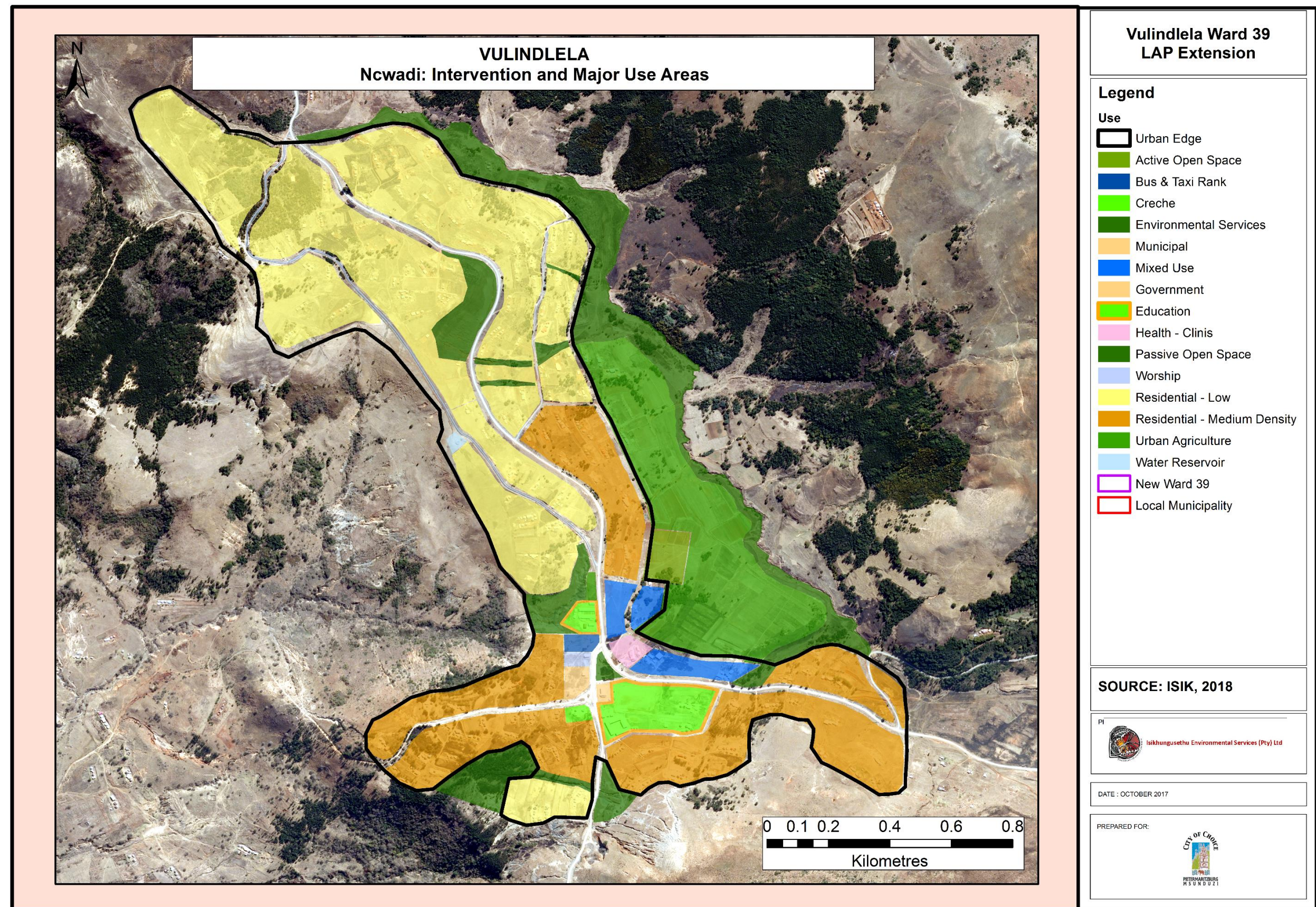
encouraged and provided for but noting that an industrial area is recommended to be located a little distance west of Elandskop Station, and near the M70

Owing to the proximity of Smithfield Dam, the node could be a gateway for tourism and water sport on the dam ³⁵ but also linked to hiking and birding opportunities in the area and also in the neighbouring Impendle Nature Reserve.

The suggested basic land use allocations set out in Figure 33 require some explanation and that will be provided below on a *per-land* use basis.

³⁵ subject, of course, to whatever will be permitted in terms of the dam's Resource Management Plan the completion of which lies in the future.

Figure 33. Ncwadi Spatial Structure



Before the land use specific provisions are discussed, the overall construct of the map deserves a little explanation. An important aspect of its framing lies in the need to institute an Urban Edge and as more fully discussed in Annex 3³⁶ to the VLAP. In addition, the 2017 (October 2017) SDF³⁷ dealt with this subject in some detail. On these bases the Urban Edge which circumscribes Ncwadi node has the following features:

- In the south the line followed accords with the environmental determinants map and south of which environmentally-sensitive land lies;
- in the west, the edge is conveniently set by steep topography;
- in the north, environmental determinants again come into play; and
- in the east this edge is set by the urban/ environment and urban/ agriculture interfaces towards the river/ stream.

Although the Urban Edge is primarily to protect against yet further encroachment on to environmental or agricultural lands, one of the ways in which that is achieved is through the employment, as is done within areas under the Ethekwini municipal area, of an “urban services edge” and beyond which urban services shall not be provided³⁸. Those who wish to settle within an area and who wish to enjoy the benefit of urban services³⁹ would need to settle within that edge. Of course, when a planning scheme is adopted for such an area, and becomes of force and effect, stronger provisions would normally be implemented to ensure that there is no transgression/ violation of that edge save for buildings directly related to the *bona fide* agricultural or environment-related activities⁴⁰ being conducted on that beyond-the-Urban-Edge land of the owner/ occupier.

The areas set aside for the various land uses conceived for Ncwadi in the year 2033 and which appear in Figure 33 are given in Table 23.

Table 23. Ncwadi proposed land development and uses (2033)

Land use	Hectares 2033
Residential: medium density	24
Residential: lower density	93
Commercial/ Mixed use	4
Industrial	NA
Education	6
Creche	.35
Worship	.34
Cemetery	NA

³⁶ importantly, adopted by Msunduzi Council as part and parcel of the VLAP

³⁷ at P81 *et seq*

³⁸ Of course that limitation could be lifted, in due time, if and when Council decides that any one area should comprise the next area for phased urban expansion

³⁹ but not necessarily a full suite of them

⁴⁰ for example accommodation, and information/ interpretation centres within the Impendle Nature Reserve

Government & Municipal: Hall	.22
Government & Municipal: Tsusong	.67
Health & Welfare: Clinic	.75
Bus/ Taxi Rank	.53
Water Reservoir	.22
Urban Agriculture	26
Passive Open Space	.37
Active Open Space: Football	2
Environmental Services	29
Total land area	186

6.3.3.4. Structuring Elements

Residential

As can be seen from the above table, the majority of the residential land ⁴¹ identified is for lower density development ⁴² and within which areas there is yet much capacity for densification. If one is to accept the Eskom point data as a proxy for a household, the average household density in 2013 was less than 2 households *per* hectare for this delineation of Ncwadi. While there has been some increase in construction since 2013, this has been slight and that density is judged to presently not exceed the 2 value.

Higher density residential accommodation is favoured in the immediate environs of the village's centre in closer proximity to the other land uses preferred there. It is believed that, within the context of Ncwadi, the planning scheme to come should provide for a residential density approaching 15 dwellings *per* hectare and which would respect that topography.

It is believed that these densities are realistic in the medium term even in the face of the attraction which Ncwadi might represent when enhanced services are provided.

Commercial / Mixed Use

A centrally-located 4ha area is suggested and which, because it is located on an horizontal bend in the P124, should, for safety and other reasons, be served by a service road to hold those intended uses from gaining direct access onto that provincial road. This arguably fairly modest provision is believed responsible at this juncture, on the information available and in the light of the opportunity cost of its extension onto productive, valuable and worked agricultural land to the east, which lies beyond the Urban Fence.

This land is already home to two shops one of which occupies only half of a small and less than well-maintained building to the east of the clinic. Items on sale, by number and range, reflect the low buying power of the area. This area is intended to provide for a range of uses other than purely retail,

⁴¹ 117ha

⁴² less than 10 dwellings per hectare

namely workshops ⁴³, offices, restaurants and first-floor ⁴⁴ residential development. Because this is a provincial road, the prior approval of the Kzn Dept of Transport is required for such development.

The construction of the service road potentially impact upon the existing access gate construction the ingress/ egress arrangements. This proposed service road a short distance from the P124 will not, on its own, be adequate to serve this area: other roads will need to be constructed, by the land owner/ developer, deeper into the site so as to access the remainder of the land so identified.

Social Services

The types and levels of services recommended for an emerging town are given in Table 24. The separate land uses conceived for Ncwadi will be dealt with individually.

Table 24. Types and levels of services for an emerging town

Order of kit	Sector	Facility
Primary kit (Emerging town - inside urban edge)	Education	Primary school
		Mobile library
	Public space	Public space
	Health	Mobile clinic (if insufficient for clinic)
		Clinic

Source: Demonstration Project on Capital Investment (Isikhungusethu, 2012)

Education

Ncwadi is blessed to have both a primary ⁴⁵ ⁴⁶ and a senior school ⁴⁷ ⁴⁸ and in proximity to each other. The primary school is very site-constrained, its building occupying 0.8ha. The high school and its sportsfield cover an area of 2.3ha. The area provided either for an expanded senior school, or else additionally to accommodate a translocated primary school, amounts to a respectable 4.7ha. If the latter were to occur, the non-historic buildings on the primary school site could be repurposed to one or more other uses and the historic buildings could accommodate other, perhaps cultural history related or tourism related, uses. A library would be a fitting replacement use for the historic buildings. By way of comparison, the combined site area of functional grounds of the St John Paul II senior and Langsyde primary schools ⁴⁹ amounts to 3.6ha.

⁴³ which could include small-scale manufacturing, and to partly serve the agricultural area

⁴⁴ or above.

⁴⁵ the first two buildings of which were built on behalf of benefactor James Langalibalele Dube early in the 20th century.

⁴⁶ 212 pupils in 17 classrooms.

⁴⁷ Ndabende

⁴⁸ 380 pupils in 8 classrooms.

⁴⁹ north of the intersection of the M70 and P402

Community Hall

The existing Community hall, immediately north of the senior school, is recognized in this LAP, and without site enlargement.

Health

At present the Ncwadi Clinic occupies a site .35ha in extent. The intended provision is 0.75ha enabling a sizeable enlargement thereof as the need arises. If the health authorities decide, in the fullness of time, that this additional area shall not be put to this particular use, another socially-related compatible use could take up the excess site area.

Tsusong Centre

To the north of the crèche, and across D2827, a site is set aside for a Tsusong Centre. This will cater not for only the needs of the Qadi and state land residents but also those living at Buto and certain other settlements ⁵⁰ who will find this closest and more accessible and even convenient on their purchasing journeys to Richmond.

Worship

Immediately north of the site provided for a Tsusong centre lies an existing Worship site on which is located a small church of some vintage. The LAP acknowledges it and provides a larger, more functional, area which would allow for on-site parking.

Taxi Rank/Bus

Ncwadi has an existing taxi rank, presently under-used on account of a relatively low service afforded this area. This LAP expands its footprint to a useful half hectare.

Public Open Space

A single sports field (Active Open Space) is proposed on flatter, unfortunately presently agricultural, land a short distance from the L2124. The provincial standard for the provision of Public Open Space, namely 2.8ha ⁵¹ per 1000 people, was designed to apply in the context of fully developed urban suburbs. That context does not apply to Ncwadi and might not even into the long-term, particularly given its rural context. The question is to what degree this village should provide formal sporting opportunities for the surrounding areas. That decision can be made at the detailed planning stage.

Passive open space is provided, in this plan, in the context of conservation/ amenity areas primarily along water courses. These are two-fold in nature. Part of the Environmental Services area is both for the general conservation purpose and where persons may enjoy those amenity qualities through passive recreation, but other areas, largely along steeper stream courses, have been identified for the

⁵⁰ within the Dr Nkosazana Dlamini-Zuma municipal area

⁵¹ 1.4ha for active open space, 1.0ha for passive open space, and 0.4ha for playlots

express purpose of restoration by much-needed intervention treatment to arrest erosion and restoration. The total area so provided is 29ha.

Finally, and in addition, an opportunity to provide an area of passive open space in the very centre has been seized. This triangle is located between the senior school and the P124/ D2124.

Cemetery

This plan makes no provision for a cemetery, it being noted that two alternative sites are planned for the Elandskop area. Cemetery provision is a district municipality function.

6.3.4. Satellites

Previous sections of this report have referred to a number of smaller settlements in areas such as Songozini, Gudlindaba, Deepdale, Jubane, and Magelekedla. Those areas with schools can be said to have a point of focus and are dealt with below. Some settlements have higher profiles than others.

6.3.4.1. Songozini

This agricultural area, on a hill and accessed *via* the D892 cul-de-sac leading up from the D2161 within the northeastern Qadi area, comprises fairly dispersed settlement ⁵² and within which, and below which ⁵³, are numerous small cultivated fields. Together, there are approximately 190 non-commercial structures ⁵⁴. Songozini has a small shop, a primary school ⁵⁵ and a crèche which collectively can be said to be its *foci* along the upper reaches of D892. No intervention or planning is proposed for this cluster.

6.3.4.2. Jubane

Within the *isigodi* of this name lies two small groupings ⁵⁶ of structures (approx. 64), in what one could call 14 homesteads, near the terminus of the D2161 and its prologation as the D892. The primary school is small ⁵⁷, and no other significant construction attends this place. Judging by the cultivated fields in close proximity to these homes, agriculture would seem to be its *raison d'être*. No intervention or planning is proposed for this cluster.

6.3.4.3. Gudlindaba

This is a linear ⁵⁸ and relatively narrow area comprising dispersed residential settlement ⁵⁹ which extends eastwards, from the Ncwadi node, for 2.4km along the D2124 to this road's intersection with the D2161 and where the Qadi Traditional Council holds court in a modest building. The primary

⁵² over 68ha

⁵³ and extending down to the D2161 below it

⁵⁴ not all residential

⁵⁵ 72 pupils in 4 classrooms

⁵⁶ the northern group is 940m from the school to its southwest

⁵⁷ 24 pupils in 5 classrooms

⁵⁸ 2,4km along the road

⁵⁹ approx. 207 structures

school ⁶⁰ of this name is set towards its eastern end. No other significant construction attends this place. No intervention or planning is proposed for this cluster.

6.3.4.4. Maqadeni

Isisekelo Primary School ⁶¹ is the anchor feature for this settlement ⁶² dispersed on part of the flatter section of an agriculturally-worked short plateau overlooked by some steeper and settled land close to the D1215, and also along the L894 which leads eastwards off it. No other significant construction attends this place. No intervention or planning is proposed for this cluster.

A little further down the D1215 as it descends towards the Mkhomazi River is another cluster of settlement ⁶³ within the Ndlotsheni *isigodi* the pupils from which surely attend Isisekelo Primary School 2.5km, by road, away.

6.3.4.5. Deepdale/Mthuthu

This is less a place, than an area set in an erosion ridden valley southwest of Ncwadi and which can be accessed most directly by travelling, with some caution, along the relatively recent and very steep D2827 up to its intersection with the D1215 just near the senior school. From this valley, the P124 gives access to the R617, 9km away, near the bottom of Lundy's Hill. The Mdutshini Primary school ⁶⁴ is set against the ward's southwestern boundary. No geographically specific intervention is recommended for this area ⁶⁵, but it is in dire need of an extensive and urgent conservation/soil retention/ restoration strategy. That having been said, depending upon whether the future Smithfield Dam is permitted for recreation and water-sports, it might be this place which provides a level of accommodation for accommodation or related recreation opportunities. These will need to be dealt with at the time of the compilation of the planning scheme.

6.3.4.6. Spatial Framework

The spatial framework for Qadi comprises the culmination of the above descriptions of centres and satellites together with the depiction of agricultural potential and environmental constraints, as shown in Figure 34.

⁶⁰ 134 pupils in 5 classrooms

⁶¹ 64 pupils in 6 classrooms

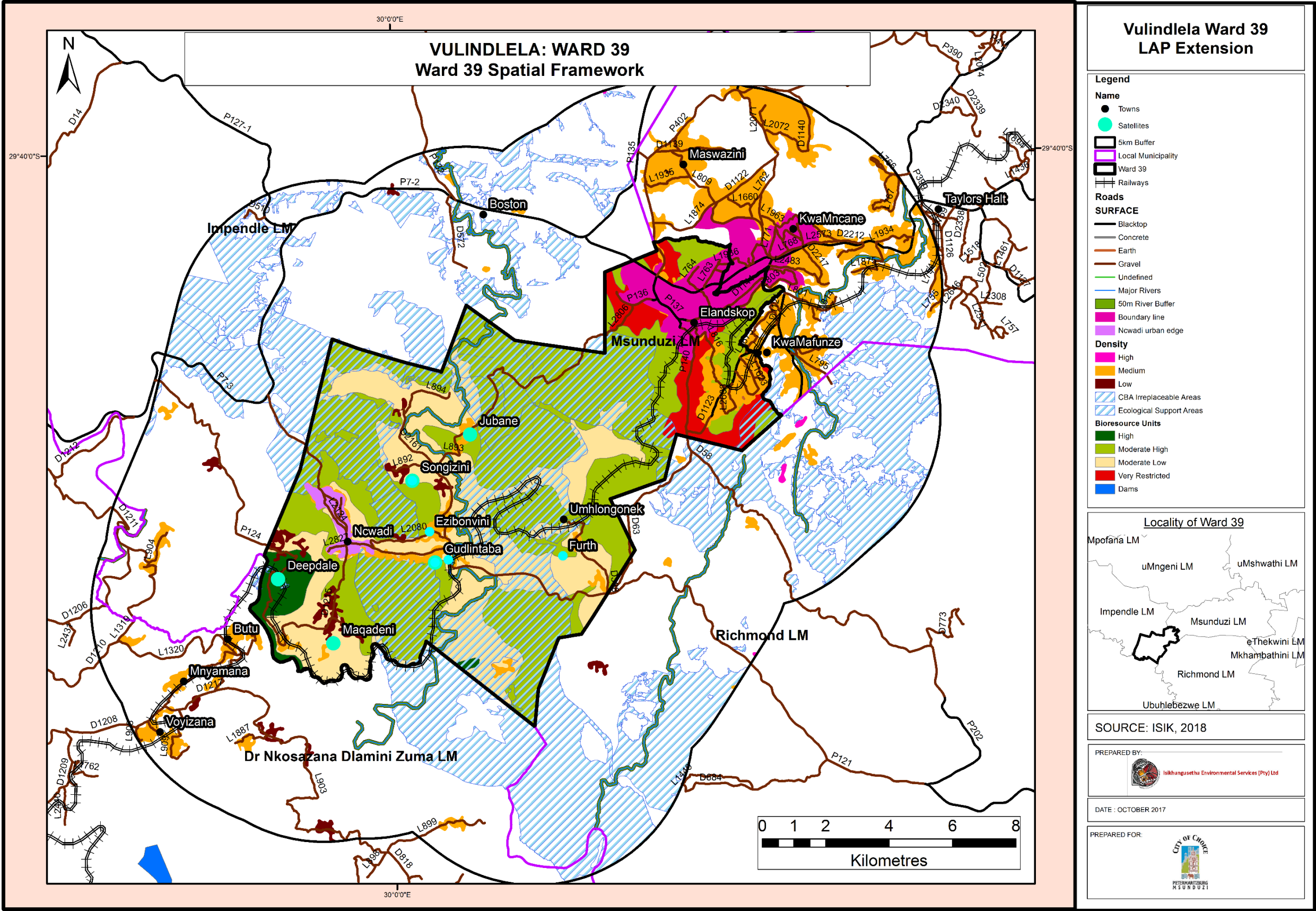
⁶² 416 structures

⁶³ 156 structures

⁶⁴ 142 pupils in 9 classrooms

⁶⁵ identified in the agricultural potential map of the ward to have the poorest soils.

Figure 34. Ward 39 Spatial Framework



6.4. Guidelines for Schemes in Intervention Areas

6.4.1. Scheme Objectives

The following objectives should be noted in the preparation of schemes in the proposed intervention areas of Vulindlela. It should be noted that the scheme conditions should be sensitive to the level of intervention area proposed in the hierarchy of centres in relation to Vulindlela.

Objective 1: The key objective in relation to the establishment of an hierarchy of centres and movement routes is to achieve improved efficiency and accessibility in the urban form.

Objective 2: Promote densification and compaction of residential development in the identified centres in the hierarchy in order to effectively limit further urban sprawl.

Objective 3: Unlock the social and economic development potential through establishment of these intervention areas to create local economic opportunities, markets and to narrow the services and income gap for the people of this area.

6.4.2. Scheme Guidelines

Table 25 and 26 give expression to the above objectives.

Table 25. High density residential component (intervention areas)

Layout	Built form
<ol style="list-style-type: none">1. Residential areas should be structured around formal road and service networks.2. Environmental protected areas and corridors must be recognized and honoured.3. Existing vegetation, particularly indigenous species, should, where possible and where it will contribute to the quality of the neighbourhood, be retained.4. Higher density development should be linked to nodal intersections and main collector routes.5. The ward is characterised by a number of streams and ecological corridors which must be incorporated in the planning for and development of any area. Any development along corridors needs to be soft to mitigate the transition.6. No further access points from properties onto provincial, district or local roads must be permitted gained and, where practical in higher density commercial or	<ol style="list-style-type: none">1. Streets, squares and public amenity areas should be designed to enhance connectivity and to allow the flow of people, traffic and fauna and flora.2. Building density must conform to the adopted building and density controls for the particular precinct.3. Height and coverage controls, as approved by the Msunduzi Municipality, shall be adhered to until the planning scheme becomes of force and effect.4. Road widths and surfacing shall conform with CSIR and municipal standards and requirements.5. Building frontages, should contribute to, and enhance, the public streetscape.6. The quality and type of road surfaces must reflect, and be a function of the volume of traffic to be accommodated. High traffic volume roads must have all-weather surfacing. Lower order roads may be gravel surface.7. Promote the provision of public spaces in these identified areas including “squares”,

Layout	Built form
residential situations, the construction of service roads must be investigated.	<p>open spaces, parks, walkways, all linked to open space.</p> <p>8. Make provision for a range of housing types as envisaged in the NDP at scales which promote integration of urban areas and provide for a range of income groups.</p> <p>9. High density residential layouts should be designed in a grid layout with short street frontages and longer depths so as to economise on utility costs whilst at the same time providing adequate lot sizes to favour three storey walk ups.</p>

Figure 35 below, based on the well-known Cornubia development within the eThekweni municipal area, provides an example of how higher density controls, parks and open spaces and formal structured road networks can comprise one integrated whole.

Figure 35. Image from Cornubia



Source: Internet, 25 January 2016.

Table 26. Commercial, manufacturing and mixed use nodes (intervention areas)

Layout	Built form
<ol style="list-style-type: none"> 1. Non-residential development must generally be in the intervention areas as indicated. Traditional leadership may support, and the municipality may approve, low-impact small-scale applications outside of the intervention areas pending the adoption of the planning scheme. 2. Vehicular access to commercial, industrial or mixed use may not be taken unless approved by the municipality, or the provincial Department of Transport as is appropriate in each circumstance. 3. Existing vegetation, particularly indigenous species, should, where possible and where it will contribute to amenity, be retained. 4. The ward is characterised by a number of streams and ecological corridors which must be incorporated in the planning for and development of any area. Any development along corridors needs to be soft to mitigate the transition. 	<ol style="list-style-type: none"> 1. Height and coverage controls, as approved by the Msunduzi Municipality, shall be adhered to until the planning scheme becomes of force and effect. 2. Building lines and side-spaced must be adhered to. 3. Sufficient on-site safe parking must be provided. 4. Building design and material must accord with municipal planning and building bylaws and regulations. 5. Service areas should be masked from viewsheds. 6. Property boundaries and interfaces with open spaces must be landscaped and maintained. 7. Access to pedestrian and public transport must be a considered in any building design. 8. In the planning scheme, provision must be made for both small scale outlets as well as large scale complexes (where appropriate) to meet current and future retail demands accompanying densification. 9. In intervention areas provision must be made for manufacturing parks (small scale) as well as larger scale individual factory sites. The types of manufacturing in the different intervention areas must not cause nuisance, by virtue of smell, sound, dust, pollutants, or smoke, to persons in the environs of those premises.

6.4.3. Services Level Guidelines

A further factor which should be taken into account in the preparation of a scheme, and the detailed planning and design of implementation areas, is the levels of services that are appropriate and affordable in these areas. The suggested levels of service are listed in Table 27 below and will need to be reviewed at the detailed planning and design stage in terms of provincial norms and standards and municipal policy.

Table 27. Suggested levels of service in Ward 39

Intervention areas	Density/size	Suggested level of service
High and medium density residential	Up to 70 units per hectare.	<p>Two to three story walk ups.</p> <p>Fully serviced in terms of: internal paved roads, water, sewerage, stormwater, electricity, refuse disposal and cemetery facilities.</p> <p>The proposed intervention areas need to have quality and direct road access to local, provincial and national transportation routes, urban centres, markets and the sub-regional economy.</p> <p>Access to the full range of social service facilities characteristic of a formal urban area including: pre-school, school-going and tertiary education facilities; clinic, community health centre and hospital health services; SAPS; postal services, municipal offices; government offices; information hubs (including libraries and IT centres) and sport and recreational facilities.</p> <p>The provision of adequate Public Open Space (Active, Passive and Playlots) which satisfy provincial and municipal norms and standards.</p> <p>Access to a full range of commercial services and local employment opportunities.</p>
Commercial	Opportunities for the establishment of both large (at least 1000m ² metres) and small scale commercial sites (not less than 300m ²).	<p>Fully serviced sites must have: internal paved roads, water supply, stormwater management, sewerage system, electricity supply and refuse disposal facilities.</p> <p>Alternative energy, waste disposal and water recycling systems must be promoted in commercial areas.</p> <p>Adequate provision for access to, and egress from, roads, for heavy and articulated vehicles.</p> <p>Transportation linkages (road and rail) to local, national and provincial transportation networks.</p>

Intervention areas	Density/size	Suggested level of service
Manufacturing	Opportunities for the establishment of manufacturing parks containing mini-factory sites. The proposed parks should be “tailor made” to suit local conditions in terms of site sizes, site location, types of manufacturing anticipated and also accessibility.	<p>Fully serviced sites must have: internal paved roads, water supply, stormwater management, sewerage system, electricity supply and refuse disposal facilities.</p> <p>Alternative energy, waste disposal and water recycling systems must be promoted in manufacturing areas.</p> <p>Adequate provision for access to, and egress from, roads, for heavy and articulated vehicles.</p> <p>Transportation linkages (road and rail) to local, national and provincial transportation networks.</p>
Intensive agriculture	Land set aside within the urban design framework which is suited to intensive agricultural production (one hectare blocks) aimed at supplying homesteads and local markets with fresh produce.	<p>Internal division of these blocks down to 10-15m² sites for leasing from the municipality for intensive production.</p> <p>No livestock permitted in these areas.</p> <p>Alternative energy-, water- and nutrient-efficient systems of production promoted in these intensive production areas.</p>

6.5. Summary

The factors which have been used to integrate Ward 39 into Vulindlela include:

- Linking proposed development with existing transportation networks (M70, R617, rail linkage and district road network);
- Confining future urban development to the hierarchy of centres identified in the VLAP and extended into Ward 39 (Diagram 1);
- Extension of higher order types and levels of services envisaged in the defined centres in the VLAP into those included in Ward 39 and lower order services in rural settlements;
- Protecting and utilising agricultural resources for food production and commercial farming operations; and
- Conserving, protecting and rehabilitating green open space (biodiversity) for the benefit of the people of the area.

An overview of plans for intervention areas in Ward 39 includes:

The revision of the KwaMncane precinct plan to include additional areas of land, in both old Vulindlela and new Ward 39 (Figure 32, cross boundary) for a number of different land uses, has served to integrate the northeastern area of Ward 39 into the new Vulindlela boundary (i.e. which now includes Ward 39). The concept is for this re-defined centre to accommodate and direct future growth, in the Funze and Mpumusa traditional areas and the state land area, into defined locations in this centre (areas for densification). Provision is made for the provision of social, utility and commercial services and employment opportunities (manufacturing/processing) in this precinct plan.

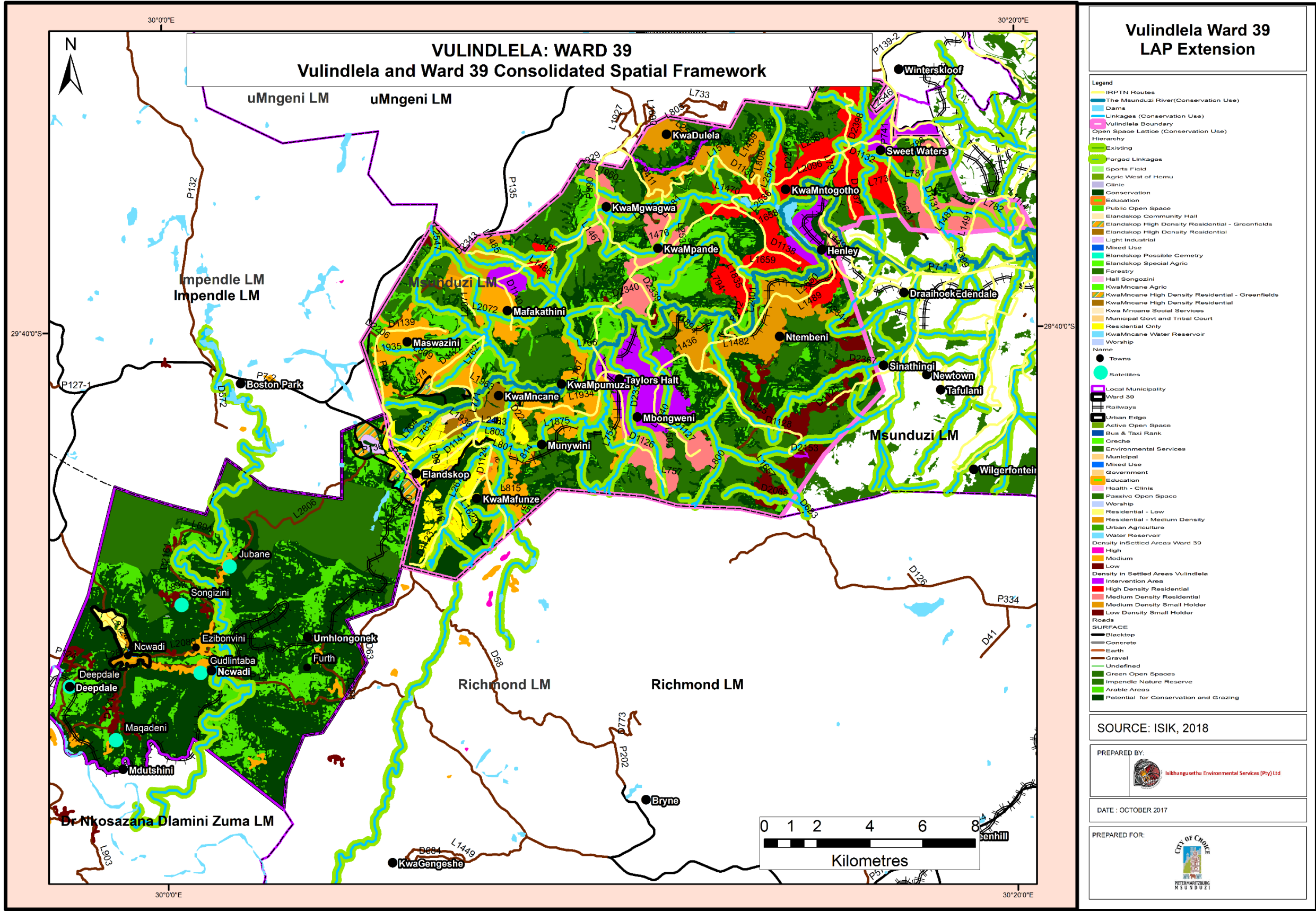
Integration of state land areas into the plan has proven to be a challenge due to the lack of finality over the future development of these areas. Despite this limitation it has been assumed that the area will predominantly be developed for small holder agriculture under the restitution land reform programme. Accordingly, any form of new settlement development, agricultural processing, marketing etc. *relating* to state land (but not on it) will be accommodated in either the KwaMncane/Elandskop or the Ncwadi intervention areas.

The integration of the Qadi traditional area and associated settlement into Vulindlela (Figure 33) has involved identifying an appropriate centre as the basis for the provision of much needed services to the people of this area. The concept is for the centre to be located at Ncwadi. The emphasis of this centre will be on public social and utility services provision with provision for private sector investment in retail and tourism developments relating to meeting local needs and to the completion of the Smithfield dam.

6.6. Consolidated Spatial Framework

Figure 36 below represents a consolidation of the Ward 39 and Vulindlela Local Area Plans (LAPs), integrating the findings of the Vulindlela LAP and that of Ward 39. In terms of integration this map demonstrates linkages of open spaces, road networks and centres such as KwaMncane and Elandskop.

Figure 36. Vulindlela and Ward 39 consolidated spatial framework



7. RURAL AREA GUIDELINES

7.1. Introduction

This section of the Ward 39 LAP is intended to provide planning guidelines for those areas located outside of the identified centres which include: (i) rural settlement, (ii) agricultural areas, and (iii) open space systems.

7.2. Rural Settlement Guidelines

7.2.1. Background

As noted in the *Status Quo* Report, the people who occupy informal settlements in Ward 39 include: long term residents in traditional areas; natural increase; people relocated in the 1960s and 70s; and those moving into the greater Msunduzi area in search of opportunities. A review of historical household dynamics in the status quo findings suggests higher levels of growth in settlements in the northeastern areas and lower levels in the southwest. The argument in this plan is that this trend is likely to continue subject to similar social, economic and accessibility conditions prevailing in the future. This assumption focusses attention on natural resources, public investment and remittance income as the economic basis for the future development of Ward 39 and hence the inclusion of this section in the LAP.

Investigations during the *status quo* phase of the project revealed that settlement is largely located on traditional land in Ward 39 and to a limited extent on state owned land. Traditional areas tend to attract informal settlement development particularly in those areas surrounding metropolitan complexes in KwaZulu-Natal (Isik 2010). It is noted that in the traditional land administration system there is recognition of differentials in land use. However, there is no formal zonation and associated conditions for land use management. Thus the “edges” of the different land uses have tended to be “soft” in the sense when placed under pressure, land uses are changed as the need arises.

This is evidenced in urban sprawl which has “spilled over” onto agricultural land and areas rich in biodiversity. The variable nature of land allocation in traditional areas makes application of a formalised land use management system difficult to administer. The provision of services, access to land and income-generating opportunities can be effectively used as the driver to shape future land use in these areas. As noted in the VLAP (Isik 2016) “...Following this understanding it is recognised that land cannot easily be set aside in traditional areas for future planned development. Rather the emphasis should be to follow settlement dynamics in order to identify areas where there is pressure for growth and change. Planning in traditional areas needs to identify ways in which this energy can be effectively utilised and in the process achieve positive change in the future landscape of Vulindlela”. This will be taken into consideration in planning for the future of rural areas of Ward 39.

7.2.2. Types and Location of Settlement

The hierarchy of centres identified in Section 5 of this plan (included in the table below) is inclusive of settlement in traditional areas as part of the urban-rural continuum.

Table 28. Hierarchy of centres for Ward 39

Location and Order of Centres (actual):	
	Traditional settlement (scattered, concentrated, dense)
●	Townships and peri-urban settlement
●	Fourth order centres
○	Third order centres
○	Second order centre
○	First order centre
○	Regional centre
	Ward 39 project area

As a consequence of Ward 39 being an extension of Vulindlela and due to the fact that the majority of settlement is located on traditional land the factors used to establish types of rural settlement in the VLAP were applied in this planning exercise.

In this section it is assumed that areas subject to burgeoning settlement and population growth provide an indication of the following dynamics at play: demand and supply (meeting local needs), change (social, cultural and economic), accessibility (opportunities and services) and density (numbers of houses per unit area). This has led to a mix of cultures, types of housing, services, survival strategies and needs in these settlements. Consequently, these indicators provide a useful point of departure in the formulation of planning guidelines for the different types of settlement areas in Ward 39.

In the VLAP the following was noted, “...Housing densities in rural areas of Vulindlela vary considerably and the indications are that densities are highest in those areas adjoining greater Edendale. Similarly, densities are high in and around Sweetwaters where it adjoins Blackridge and Winterskloof. Densities tend to be low in the central areas of Vulindlela where accessibility to economic and services opportunities remains a challenge. The areas around Elandskop to the west of Vulindlela are also experiencing high density levels”.

This would apply to the settlements around KwaMncane and Elandskop where, in the VLAP they are identified as predominantly high and medium density. In contrast the settlements in Qadi and on state owned land are all low density.

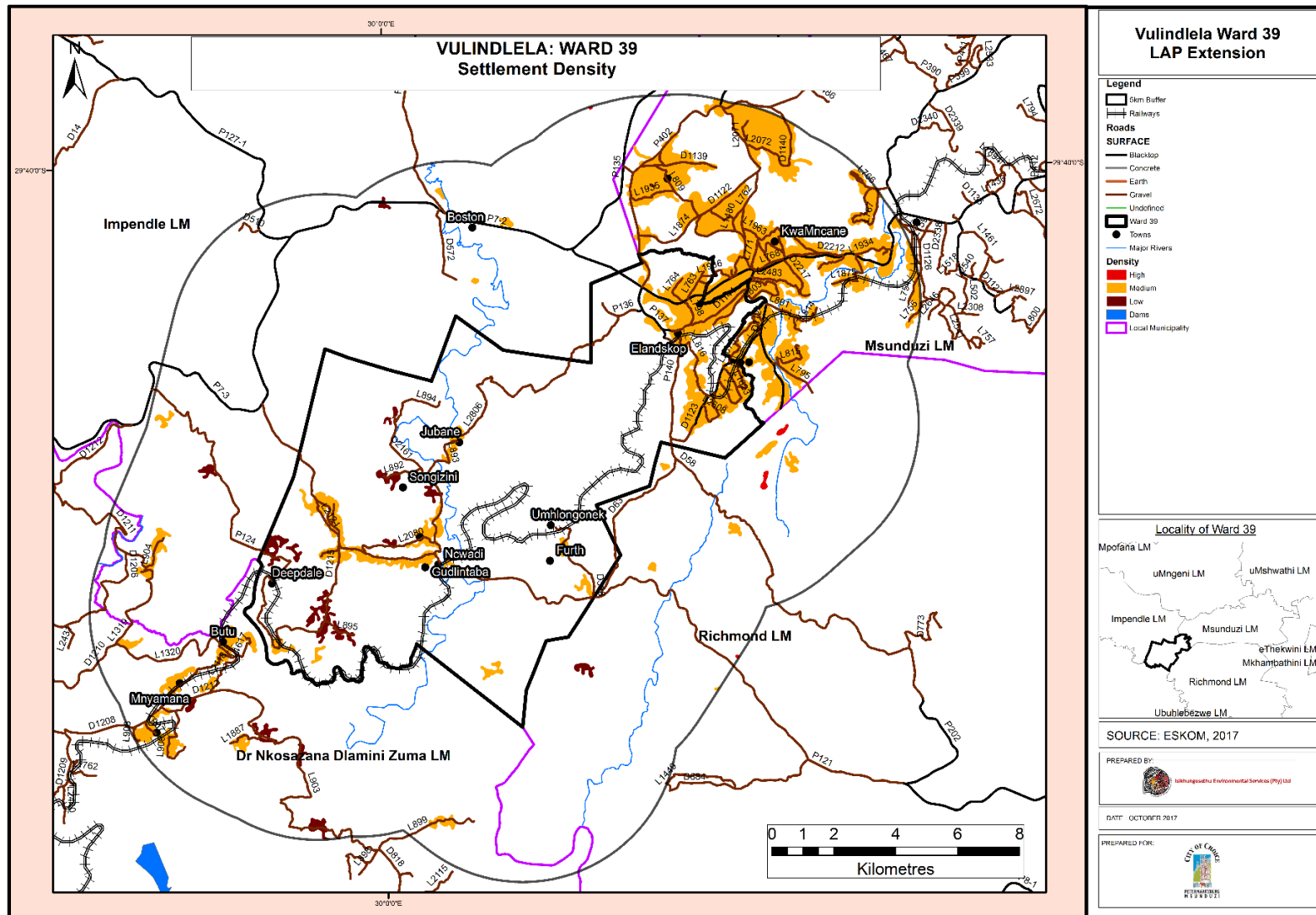
Owing to the fact that residential densities, particularly in the Qadi area fall within the 0 – 7 range per hectare.

Table 29. Density Ranges

Density category	Density (units per ha)
Low - low	0-1
Low- medium	2-3
Low high	4-7

The above categories will be used as the basis for formulating the following strategy on interventions in rural areas of Ward 39. As population numbers and densities increase in the high and medium density areas this poses a number of risks particularly in relation to health, fire, flood and increasing costs of infrastructure.

Figure 37. Current settlement density



7.2.3. High Density Settlement

7.2.3.1. Location of Expansion Areas

The high density settlements identified in Ward 39 are mainly located as follows:

- Around Taylor's Halt, KwaMncane and Elandskop.

In contrast the lower density settlements are located in the southern areas of Vulindlela and in Qadi. Within these low density areas the settlement at Ncwadi is at the higher level (i.e. 4-7 units *per* ha) whilst that in the surrounding settlements (Gudlintaba, Songizini and Maqadeni) is predominantly in the lower density levels (i.e. 0-3 units *per* hectare).

As may be noted in the VLAP one of the main objectives of the Ward 39 LAP is ensure that further urbanisation pressures are absorbed into the identified centres or this ward. In order to ensure continuity of the VLAP with the Ward 39 LAP, reference is made to both Taylor's Halt and KwaMncane as centres with a direct influence on the residents of Ward 39.

Taylor's Halt intervention area

Owing to the fact that Taylor's Halt is located centrally in Vulindlela, it has not been subjected to the same population growth pressures experienced at KwaMncane and Sweetwaters. As a consequence there is land to the south and north that could be used to accommodate future expansion of the intervention area. Once again the urban edges as detailed in Figure 34 will have to be further investigated at detailed planning and design stage where issues identified in Annexure 3 should be considered.

KwaMncane intervention area

In the VLAP, KwaMncane is identified as a second order centre providing a range of goods and services to surrounding communities which now extends into ward 39. The establishment of this as a centre linking Vulindlela with Ward 39 provides opportunities for future growth and expansion through densification. Urban edges should be taken into account in the detailed planning and design stages of the development of this intervention area.

Ncwadi intervention area:

As noted in sub-section 5.6.1, Ncwadi is identified as a third order centre providing a limited range of public services to residents in the surrounding settlements at Gundlintaba, Songizini, Furth and Maqadeni. This centre is intended to accommodate future population growth in the Qadi traditional area and in the process to avoid continued urban sprawl from surrounding settlements into agricultural and biodiversity areas. Hence land should be set aside within the centre for settlement densification and growth. As in the higher order centres, urban edges should be defined during the detailed planning process.

Gundlintaba, Songizini and Maqadeni services points:

The main intersections in these settlements have been identified as “single stop” services points for mobile services emanating from the higher order centres in the sub-region. In rural traditional areas, typically, these points are characterised by a primary school and general dealer or spaza store. Open areas around the intersection need to be set aside for mobile services (pension pay points, clinics, libraries, banks, police services, home affairs etc.) and for periodic markets associated with service days. Planned co-ordination of services days by the authorities makes trips for residents more cost effective and promotes local economic activity in the form of periodic markets.

7.2.3.2. Scheme Guidelines in High Density Settlements

The following scheme guidelines are noted for application in high density settlements located outside of the intervention areas:

Table 30: Rural residential component (high density rural)

Layout	Built form
<ol style="list-style-type: none">1. Residential areas should be structured around formal road and service networks. Deviation from networks must be discouraged, as this leads to access difficulties.2. High density residential development3. Any new site allocation and development must ensure proper access to allow vehicular access to sites for sewage management and access to fire hazard control.4. Layout plans, although informed by the existing brown fields, must in respect of any new development, provide for adequate vehicular access (at least 3 meter roads).5. New residential development and additions /extensions to existing homesteads must recognise and enforce environmental protected areas and corridors.6. Existing vegetation, should where possible, and where it will advance the quality of the neighbourhood, be retained.7. Higher density development should be linked to nodal intersections and main collector routes.8. Vulindlela is characterised by a number of streams and ecological corridors which must be the basis of planning for the area. Any development along corridors need be soft to mitigate the transition.	<ol style="list-style-type: none">1. Streets, squares and public amenity areas should be should be designed to enhance connectivity and to allow the flow of people, traffic and fauna and flora.2. Building density must conform to the accepted density controls for the particular precinct.3. Height and coverage controls as approved by the Msunduzi Municipality to be used until incorporated in the Town Planning Scheme.4. Road widths and surfacing must allow adequate vehicular access to allow for servicing of sites in respect of sewage management and fire control.5. Ad hoc site allocation must be avoided and site allocation along service lines must be applied and encouraged.6. Existing settlement edges must be observed. Only new areas, as provided in the intervention areas, may be used for the allocation of sites outside the exiting settlement patterns.7. Existing high density settled areas may be used to increase densities as overspill from intervention areas. Densification must be aligned to nodal points, intersections and main collector routes.8. Clearly defining urban edges around these high density settlements at detailed planning and design stage following the

9. Access to residential sites off provincial, district and local roads must not be permitted, other than the existing pre LAP access points.
10. Densification in high density settlements must follow an upgrade route in preference to “greenfield” development.

principles contained in Annexure 3 on urban edges.

7.2.3.3. Service Levels in High Density Settlements

In the *short term*, *additional interventions* to those already anticipated by the municipality in high density settlements *are not recommended*. Rather the priority should be on planning and implementing the identified intervention areas in Ward 39. The conditions identified in the VLAP for high density settlements adjoining identified centres (i.e. KwaMncane) in Ward 39 should be applied by the municipality – these are outlined below from the VLAP. There is no high density settlement area surrounding Ncwadi at the present time and hence these conditions are not applicable.

Once the identified centres are established and operational then attention should be devoted by the municipality to high density settlements in rural areas immediately adjoining the intervention areas as indicated in Figure 34. It is recommended that an interim upgrade of services takes place in these settlements in anticipation of major densification and development prior to 2033 once the intervention areas are fully populated and additional areas are needed for expansion. The nature and extent of formal urban expansion into these high density areas in future will be dependent upon urbanisation trends over the next 20 years. These will need to be accommodated in the planning of the high density areas in the future with indicators of levels of service being provided in the table below.

Table 31: Services levels in high density areas

Land use	Density/size	Suggested level of service
Rural residential high density	Residential sites up to 300 square meters	<p>Land serviced in terms of reticulated water and sewerage, on-grid electricity, internal gravel roads, waste disposal and access to cemetery facilities in intervention areas.</p> <p>Higher order utility services anticipated for high density areas will need to be paid for by the residents of these areas.</p> <p>Primary educational and health facilities within 2-5kms of homesteads.</p> <p>Higher order social services to be provided in the identified intervention areas.</p> <p>Commercial services and employment opportunities relating to manufacturing to be located in identified intervention areas.</p>

7.2.4. Medium Density Settlement

The remaining areas in Ward 39 include limited medium density settlements (Figure 37). As may be noted in Figure 37, these medium density settlements are located at Gudlintaba, Maqadeni, and Songozini. As a consequence of their being at medium density these settlements do not pose major risks to health, fire etc. However, there is less urgency for immediate intervention than in the high density areas.

Based on observation of the medium density settlement certain of it is aligned with small holder agriculture while other areas are more of a mixed residential use in process of transition from agriculture to higher density development. Consequently it is noted that medium and low density settlement areas in Vulindlela, particularly where related to intervention areas, are likely to respond to pressures for densification in future. This applies most particularly to the following areas:

- Settlement located to the south and west of Ncwadi.
- Settlement located to the northeast at Songozini.
- Settlements located to the south at Maqadeni.

The interventions identified in the VLAP for medium density areas will be applied in Ward 39 and include:

- *“Defining an intermediary level of service associated with these areas where costs in excess of the most basic level of services must be paid for by the householder.*
- *Clearly define geographical edges (hard edges) to these settlements and defining conditions associated with these areas for inclusion in the proposed land use scheme for Vulindlela.*
- *Identifying factors to be considered in the preparation of a scheme for these areas of Vulindlela.*
- *The scheme and services level requirements for medium and low density settlements will be dealt with jointly since it is not always possible to distinguish between these two types of settlement”.*

7.2.5. Low Density Settlement

Low density settlements range from 0-7 units per hectare. Each of the households with a residential land allocation, traditionally would also have been allocated an arable site and access to grazing lands and natural resources in traditional commonage areas.

Under current conditions low density settlements in Ward 39 could be regarded as small holdings based on a review of land use from satellite imagery. As a consequence of the scattered nature of settlement, costs of services, poor accessibility and limited population it is argued (in terms of nation policy perspectives) that these settlements only qualify for the most basic levels of services.

In order to ensure continuity with the VLAP, those interventions recommended for low density areas will be applied to Ward 39 and include:

- *“Defining a basic level of service following the principles contained in the 1994 government’s RDP policy which form part of the free basic services package provided by the municipality.*
- *Identifying and mapping low density areas at ground level working with residents of the affected areas.*
- *Clearly defining geographical edges (Annexure 3) to these low density areas and identifying conditions associated with these areas for inclusion in the proposed land use scheme for Ward 39/Vulindlela.*

Conduct detailed designs and costs associated with the provision of basic services, where required, and submit to the appropriate state agency to assist the municipality in funding such upgrades as a priority to minimise risks”.

7.2.6. Housing Upgrades

It appears that the majority of state subsidised housing developments in Vulindlela are *in situ* upgrades. The difficulty with this type of subsidised housing is that it only serves to increase densities in existing settlements which undermines the notion of densification and growth of identified centres. Further densifying rural settlements also re-enforces the scattered provision of services facilities to rural residents which in turn is not sustainable by municipalities. Hence further densification of low density rural settlements through *in-situ* housing upgrades is **not** supported in this plan. Rather increase in population in low density areas should be provided for in the identified centres where they will have access to subsidised housing, the full range of utility and social services facilities.

7.2.7. Scheme Guidelines for Medium and Low Density Settlements

Table 32. Rural residential component (medium and low density settlement)

Layout	Built form
<ol style="list-style-type: none"> 1. Residential development must be discouraged in these areas in recognition of the costs of servicing medium/low density development and the loss of agricultural potential and food security. 2. Recognition and protection of environmental protected areas and corridors are to be observed. 3. Existing vegetation, should where possible, and where it will advance the quality of the neighbourhood, be retained. 4. These areas are characterised by a number of streams and ecological corridors which must be the basis of planning for the area. Any development along corridors need be soft to mitigate the transition. 5. Access to residential erven off provincial, district and local roads must not be 	<ol style="list-style-type: none"> 1. Only a basic level of service should be considered for medium and low density settlements. 2. Internal residential layouts in these settlements should be formalised to enable effective land use control. 3. Building density must conform to the accepted density controls for the medium and low density areas. 4. Height and coverage controls as approved by the Msunduzi Municipality to be used until incorporated in the town planning scheme for these areas. 5. <i>Arable lands</i> located outside of small holder settlements where land size depends upon historic land allocation by traditional councils. These areas should be set aside in terms of the “wall to wall” scheme for

permitted, other than the existing pre LAP access points.

arable production. Provision needs to be made for lease agreements to enable local farmers to gain access to larger areas of productive land in Ward 39. See Figure 40 for location of lands best suited to arable production.

6. Land areas suited to *plantation and livestock* grazing should be set aside in terms of the “wall to wall” scheme for these types of land use. The steeper lands should be set aside as commonage for livestock and woodlots. Management conditions, particularly for indigenous grasslands, should be defined in the scheme conditions and implemented by livestock associations working closely with extension officers from the Department of Agriculture. Figure 39 for lands best suited to plantation and livestock production.

7.2.8. Service Levels

The following types and levels of services are suggested for medium and low density settlements in Ward 39.

Table 33: Service levels

Land use	Density/size	Suggested level of service
Rural medium and low density	Residential sites up to 1500 square meters.	<p>Provision of a basic level of services to households in these settlements including access to: reticulated water (communal standpipes), VIP toilets, on and off-grid electricity, gravel road access and telecommunications.</p> <p>Primary educational and health facilities within 5 kilometres of homesteads.</p> <p>All higher order social services provided in the identified Intervention areas.</p> <p>Provision should be made in rural agricultural areas for infrastructure such as impoundment for irrigation and road infrastructure for access to production areas.</p>

7.3. Agricultural Guidelines

7.3.1. Policy Context

The conditions noted in the VLAP are applicable to Ward 39 as follows, “...*The NDP recognises the importance of integrating the rural economy into the wider economy, and the importance of agriculture in playing this role. Since 1994, the main challenge for rural development has been the need to combat marginalisation of the poor.*” One of the points is to “*develop strategies that give new entrants access to product value-chains and support from better resourced players*” (NDP p 200).

The NDP identifies the potential for the agricultural sector to provide jobs, with the following needing to be in place: land, finance, markets, and agro-processing which includes emerging farmers and training support and mentorship.

A further provision in the NDP includes investing substantially in providing innovative market linkages for small-scale farmers in communal and land reform areas, with provisions to link these farmers to markets in South Africa. This involves improving infrastructure, including “*communications infrastructure that gets the products from the farm gate through the different stages of the value chain. Information on buying and selling prices and supply and demand trends need to be provided to farmers, traders, processors and consumers*”. This could be achieved by improving and extending skills development and encouraging research and development into alternative technology solutions. The importance of extension services was also stressed, including looking at innovative means for agricultural extension and training by the state in partnership with industries and commercial farmers.

It is against this background that these agricultural guidelines are presented for Ward 39. It should be noted that these are only guidelines which should be followed by the preparation of a detailed agricultural development plan for Ward 39. This should include the identification of individual land parcels and business plans for each of the enterprises identified in that plan for funding and implementation.

7.3.2. Agricultural Potential in Vulindlela

The information contained in this section of the Ward 39 Local Area Plan is only intended to provide an indication of the agricultural potential in different areas of Ward 39. This requires detailed feasibility studies at local “farm gate” level prior to project planning, budgeting and implementation being feasible.

As noted in the *Status Quo* Report, agricultural potential in Ward 39 ranges from moderate to restricted. However, there are different types of agriculture that operate under different production conditions. Thus, for example it is not feasible to successfully cultivate vegetable crops on slopes subject to major climate changes. However, these areas may be well suited to timber, fruit or sugar production. In cases where plantation crops are not suitable on these slopes, natural pastures may be ideal for beef or game production. In other areas with differing slopes there will also be overlaps between the different types of agriculture that could be established.

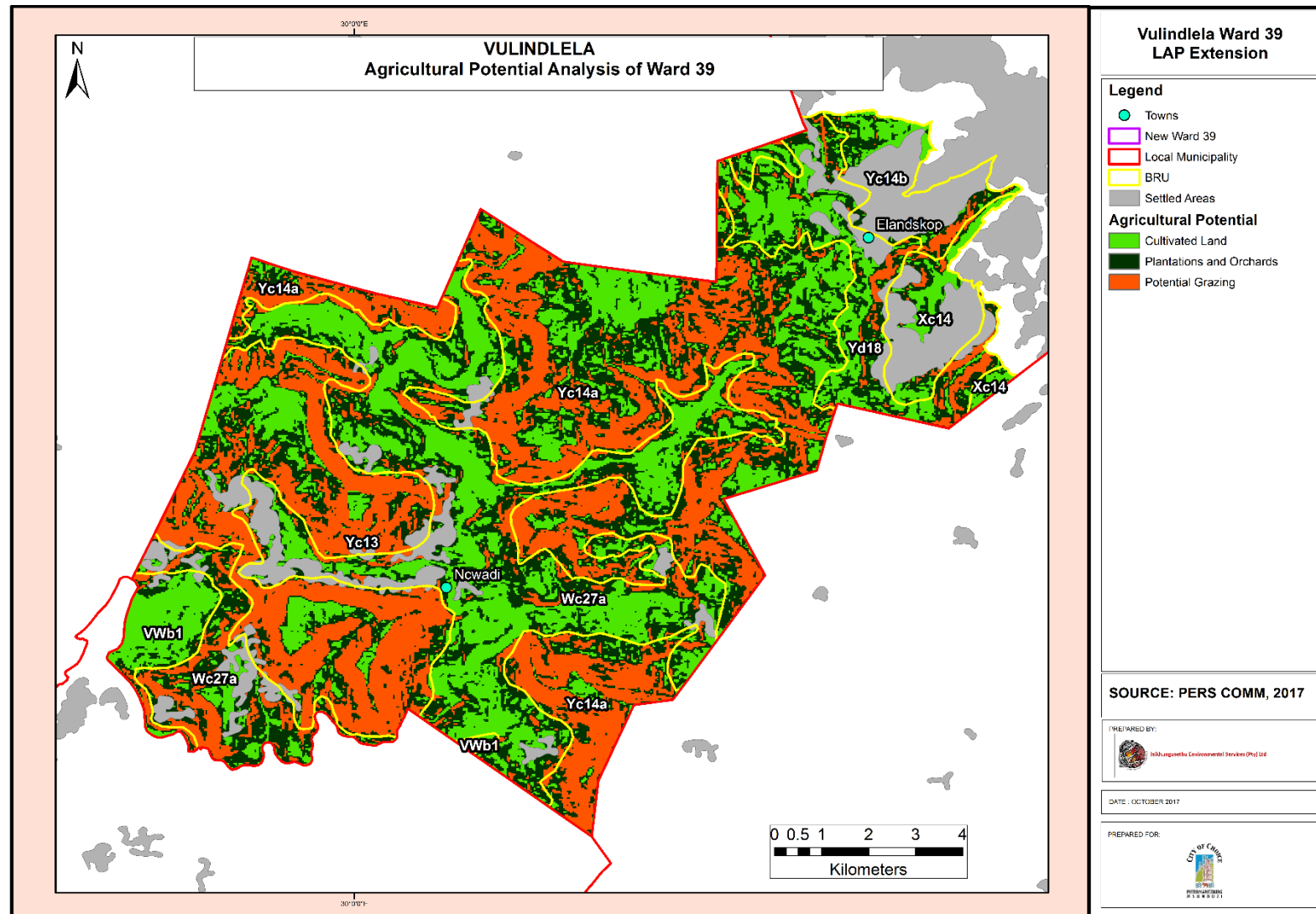
Table 34 provides an estimate of the areas of land available (including settlement) for different types of production, depending upon slope and the BRUs in which these areas are located in Ward 39.

Table 34. Areas with Agricultural Potential

AGRICULTURAL LAND AREA (Previous Calcs)					
Slope	Description	Ha	%	Ha per LU	Number of LUs
% Slope	Type of Potential	Hectares	%	Livestock	
<12%	Arable	4652	33	1861	744
12-24%	Orchards and plantations	5013	36	2005	802
>25%	Grazing	4425	31	1770	708
	Total area ward	14089	100	5636	2254

It is against this background that Figure 38 provides an indication of the areas suitable for different types of agriculture. As may be noted in the Figure 38, land up to 12% slope is best suited to cultivation of vegetable and grain crops and these will differ according to soils, slope, climate and rainfall requiring detailed investigation at local level before establishment. The land on slopes 13%-24% are best suited to plantation crops and orchids while land above 25% slope is best suited to livestock and conservation. The types of crops, grains, pastures and timber that can be produced in the different BRUs in Ward 39 are indicated in Table 35 and Diagram 9.

Figure 38. Vulindlela's agricultural potential



In order to establish information on crops, data was extracted from the Cedara Bioresource Unit Program, Camp (2016). An average yield was calculated for each of the crops, grains, pastures and timber included in the respective BRUs (Table 35). As a consequence, this is not accurate in terms of crop type, but illustrative in terms of what crops can be produced and the average yield that may be expected under 75% management. If further detailed information is required on crop types and yields, then this can be made available from the BRU reports at Cedara.

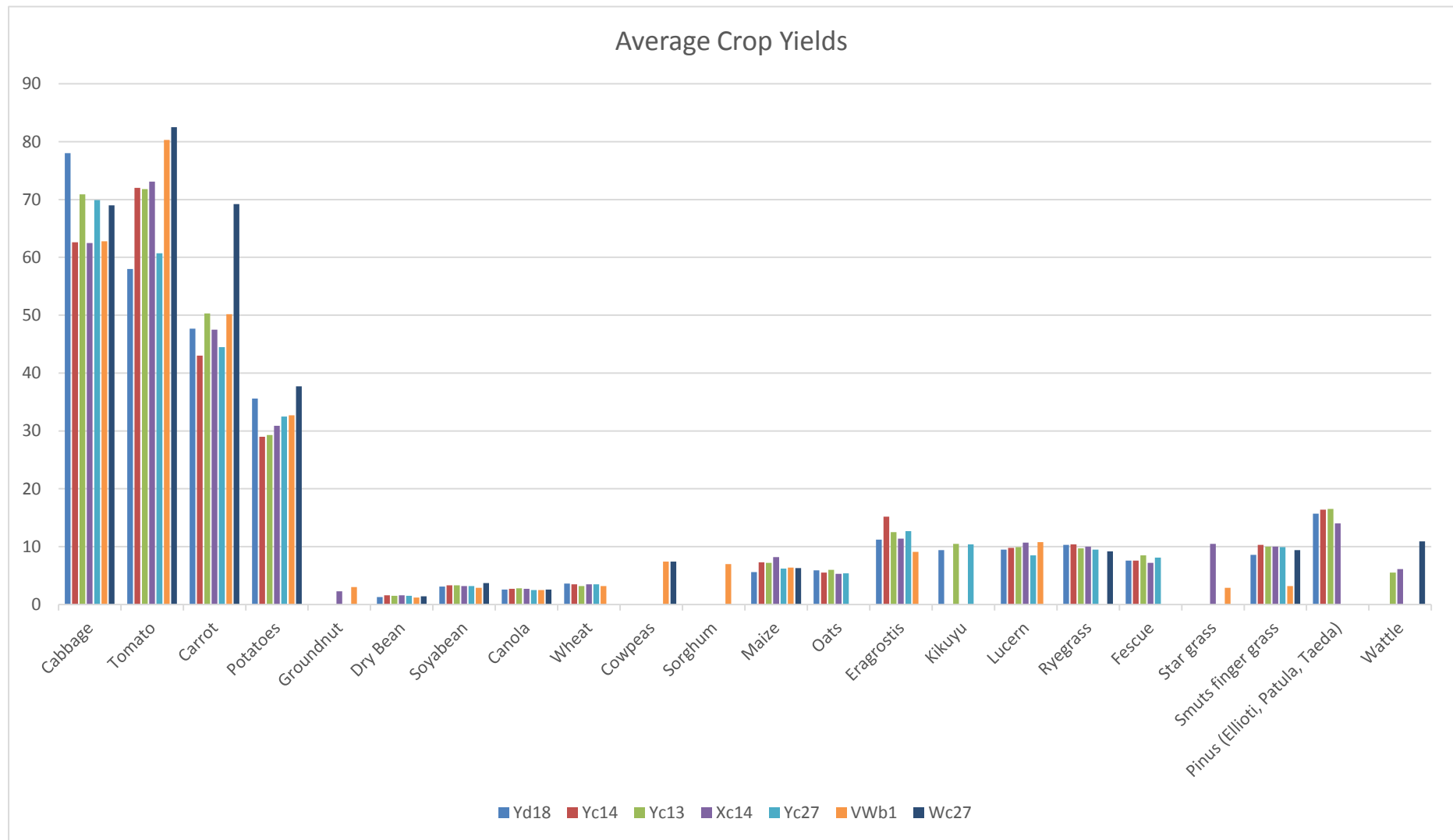
Table 35. BRUs and Average Crop Yields

Category		Bioresource Unit: Average Yield per ha						
	Crop	Yd18	Yc14	Yc13	Xc14	Yc27	VWb1	Wc27
Vegetables	Cabbage	78	62,6	70,9	62,5	69,9	62,8	69
	Tomato	58	72	71,8	73,1	60,7	80,3	82,5
	Carrot	47,7	43	50,3	47,5	44,5	50,2	69,2
	Potatoes	35,6	29	29,3	30,9	32,5	32,7	37,7
	Groundnut	0	0	0	2,3	0	3	0
Grains and nuts	Dry Bean	1,3	1,6	1,5	1,6	1,5	1,2	1,4
	Soyabean	3,1	3,3	3,3	3,2	3,2	2,9	3,7
	Canola	2,6	2,7	2,8	2,7	2,5	2,5	2,6
	Wheat	3,6	3,5	3,2	3,5	3,5	3,2	0
	Cowpeas	0	0	0	0	0	7,4	7,4
	Sorghum	0	0	0	0	0	7	0
	Maize	5,6	7,3	7,2	8,2	6,2	6,4	6,3
	Oats	5,9	5,5	6	5,3	5,4	0	0
	Eragrostis	11,2	15,2	12,5	11,4	12,7	9,1	0
	Kikuyu	9,4	0	10,5	0	10,4	0	0
Pastures	Lucern	9,5	9,8	9,9	10,7	8,5	10,8	0
	Ryegrass	10,3	10,4	9,7	10	9,5	0	9,2
	Fescue	7,6	7,6	8,5	7,2	8,1	0	0
	Star grass	0	0	0	10,5	0	2,9	0
	Smuts finger grass	8,6	10,3	10	10	9,9	3,2	9,4

Timber	Pinus (Ellioti, Patula, Taeda)	15,7	16,4	16,5	14	0	0	0
	Wattle	0	0	5,5	6,1	0	0	10,9
Total yield		313,7	300,2	329,4	320,7	289	285,6	309,3
Average total yield		14,3	13,6	15,0	14,6	13,1	13,0	14,1

The average yield (irrigated and dryland) of each crop, grain, pasture and timber is included in Diagram 9 for each of the Bioresource Units identified in Ward 39. It should be noted that comparison of yields between crops in Diagram 9 should *not* be made. It is only average yields of the same crop between BRUs that is meaningful as contained in Table 35.

Diagram 9. Average crop yields



The indications from Diagram 9, Table 35 and Figure 38 (BRUs/slope) are that vegetable crops will grow in all BRUs with varying yields depending upon crop, climate, soils and aspect. In the case of cabbage and potatoes, yields are highest in the high lying wetter areas and lowest in the drier valleys. In contrast tomatoes and carrots produce better in the dryer areas, but under irrigation. Grains, with the exclusion of cowpeas and sorghum, grow well in all BRUs but again yield depends on type of grain and location of BRU. Sorghum is best suited to the drier valley conditions particularly along the Umkomaas river, but not in any other of the BRUs. Similarly pastures, with the exclusion of Star grass, will grow in most BRUs, but under irrigation, particularly in the drier areas of Ward 39. Finally, different species of timber (pine and wattle) will grow in the upland (wetter) areas of Ward 39, but species varies according to BRU.

The average yields across all crops included in Table 35 for each of the BRUs indicates that the highest yield is from BRU Yc13. This is located on a raised plateau in the southwest above Ncwadi. This is followed by BRUs Yd18 and Xc14 which are located in the northwest in the highlands of the Ward (higher colder and wetter areas). The lower yielding BRUs (Yc14 (a-b), Yc27 and VWb1) are located in the central and southern areas of Ward 39 which tend to include drier river valleys and transitional areas from scarp to valley.

Land that has been settled has largely been lost to agriculture particularly as settlement densifies. As a consequence all remaining areas of cultivable land located outside of settlements, need to be protected from poor land use and settlement expansion in order to protect the food and timber/fibre production potential of this area for local economic development.

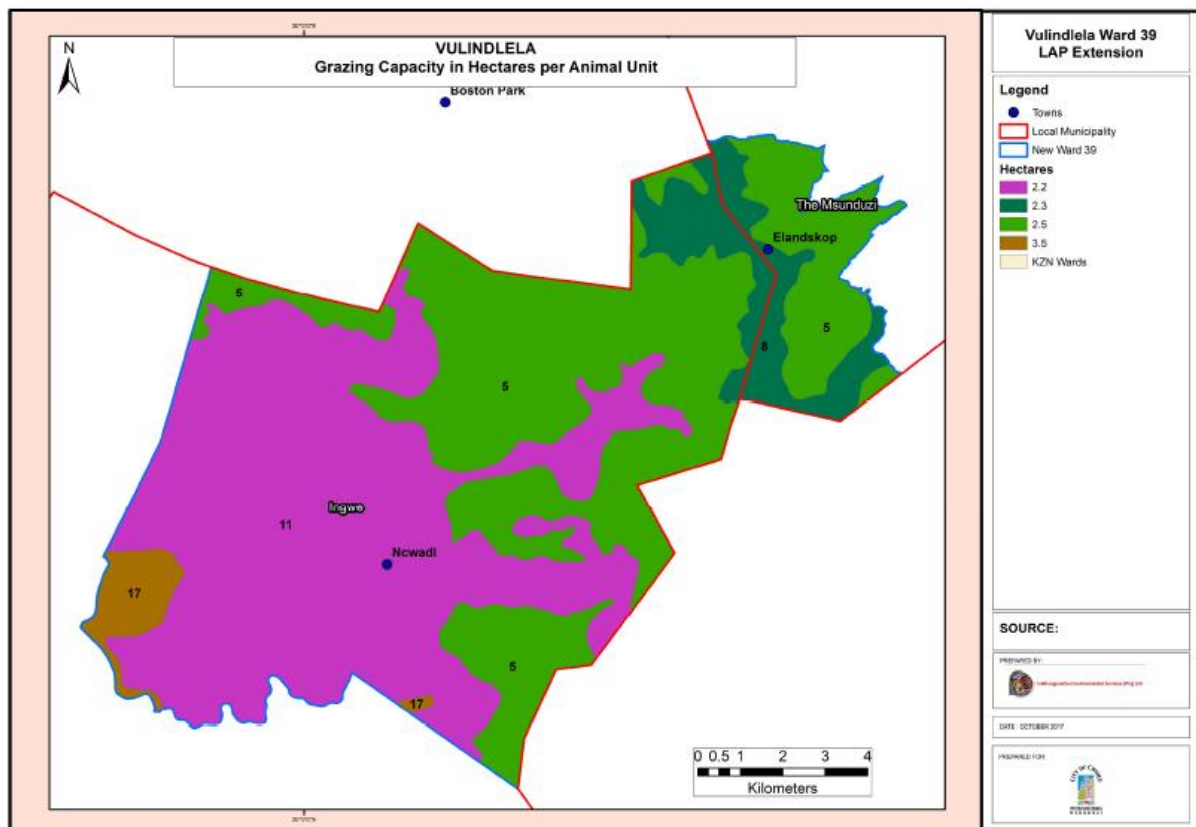
Livestock:

Based on findings in the status quo report, livestock appears to be the main form of agricultural production taking place in Ward 39 at the present time. Actual numbers of animal units could not be established, but an indication of the types of livestock produced was obtained from Census data. This indicated predominantly cattle under subsistence management aimed at capital accrual with spin offs including: meat, milk, hides and sales where cash for domestic use is required. There was also evidence of goats, sheep, donkeys, horses and chickens being produced in ward 39 also under subsistence management regimes.

The number of livestock units that could potentially be carried on this land is also provided in Table 34. In the absence of actual livestock numbers an estimate is provided in the Table 34 of the number of units (2254 LUs) that potentially could be carried on the veld in its current condition at an average stocking rate of 2,5ha per livestock unit (i.e. all agricultural areas included in Table 34). If however, agreement is reached between farmers and stockowners that areas under 12% and from 13-24% are reserved for arable and plantation crops then the number of livestock units will have to be reduced accordingly (i.e. 708 LUs). A decrease in numbers of livestock does not necessarily have negative financial implications for the farmer. Under different management conditions (i.e. commercial as compared to subsistence) a decrease in numbers and an improvement in quality of the livestock herd will result in an increase in the marketable value of each livestock unit. The reduction in livestock numbers and introduction of pasture management into Ward 39 will improve the quality of pastures and enhance the biodiversity of the area and its water production capacity.

There is potential for sheepⁱ and dairy production in the higher lying cooler areas of the ward (Figure 39: central and northeastern areas- green and dark green in Figure 39) with the southern and western lower lying areas favouring cattle and goats. Horses and donkeys would also do better in the dryer areas of the ward (Figure 39: purple and brown on the map).

Figure 39. Areas with livestock production potential



7.3.3. Potential Agricultural Project Areas in Ward 39

Following a request from planning staff, agricultural officers and the community (meeting 13 June 2018) an attempt has been made in this section of the report to identify possible areas for agricultural project identification. As noted above, the information contained in this report does not permit detailed identification of sites at local level for implementation. Further detailed feasibility is required of local conditions at “farm gate” level in order to establish feasibility, cost, likely yields etc.

This identification of possible project areas is based on a review of the BRUs (land capability rating,

Table 36), historical and current land use practises (Figure 11) and an investigation of relevant satellite imagery (Google earth 2018).

Table 36. Land capability

BRU	Land capability	Description
Yd18	L6	Very restricted
Yc14 (a,b)	L4	Moderate – restricted
Yc13	L4	Moderate – restricted
Xc14	L4	Moderate – restricted
Wc 27a	L5	Moderate – restricted

Source: Bioresource Units (2012)

Figure 40 indicates that at least 10 areas in Ward 39 were and are currently used for crop and plantation production and coincide with BRUs with moderate potential and include:

Eastern area

1. Northeastern area on land adjoining settlement at Songozima: land contoured for forestry development, plantation development of this area dependent upon forestry permitting.
2. Southeastern area on land adjoining the Mafunze, Mbumbane settlement areas and Sevfontein prison extending into Vulindlela historically contoured and probably used for vegetable and grain production (maize).

Central area

3. Central area adjoining settlement at Mkheshakeni and following river valley in a westerly direction until intersection of valley from Songizini-Jubane. Historical and limited current cultivation on flatter southeastern bank of river.

Southern area

4. Furth valley including Waterfall used historically and currently for cultivation of veges and crops (most probably maize).
5. Southwestern area in valley from Ncwadi and Ezimbomvini to intersection of river valley from Songozini-Jubane and then following the ridge line *via* Gudlintaba back to Ncwadi. South banks of valley used for crop and vege cultivation now and in the past.
6. Valley system directly south of Gundlintaba draining south to the Umkomaas. East bank of valley historically used for cultivation of crops and now largely fallowed.

7. West facing valley sides of Umkomaas at Maqadeni historically and currently used for crop production albeit on a limited scale due to settlement encroachment and probably limited rainfall.
8. Evidence of cultivation in the past along the floodplain of the Umkomaas west of Deepdale station. No evidence of the area currently being in use for crop cultivation.

Northern area:

9. Area adjoining the northern boundary of Ward 39 which comprises two minor valley systems which combine to drain south *via* Magadini and Gunlintaba to the Umkomaas in the south. This valley was also used historically for cultivation of crops and is now sparsely settled with limited cultivation taking place.
10. A relatively small area north of Ncwadi where there is evidence of historical cultivation (contour banks) for crop production which is currently fallowed.

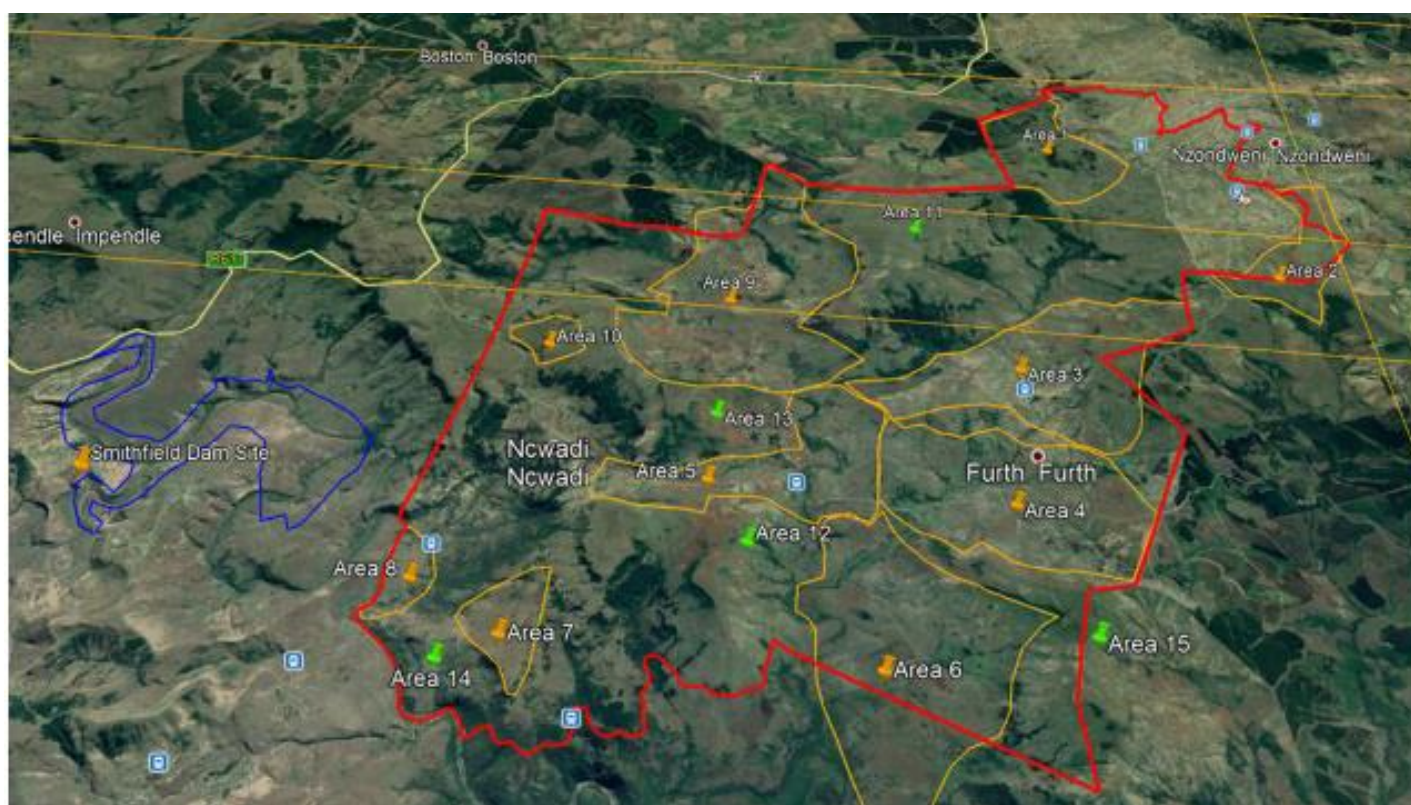
It is important to note in Figure 40 that virtually all areas historically used for crop production were located in valley “basins” and all plantation and livestock production areas were located on hill slopes and ridge lines. Further investigation is required to confirm this observation, but it may be linked with wind and temperature conditions.

As may be noted in Figure 40 a further 4 areas were and are currently being used for livestock production purposes in Ward 39 as evidenced in overgrazed grasslands, onset of gully erosion and livestock tracks. These grazing areas are located as follows:

11. High lying northern area of ward 39.
12. High lying ridge line running west and south of Ncwadi.
13. High lands immediately to the north and east of Ncwadi.
14. Lowlands along the Umkomaas river valley.
15. High ridge lines east of Ward 39.

In the absence of actual data on livestock production in Ward 39 it is assumed (based on extensive work in Impendle of KZN and Ubuhlebezwe (Isik 2010, Isik 2012) that livestock is moved to the highlands in crop production periods (October – January) and then, after harvest, they are permitted to move into the fields in the valleys to graze off what remains of the crop for autumn and winter providing limited fertilization from manuring of the soil.

Figure 40. Potential agricultural project areas in Ward 39



7.3.4. Limitations on Smallholder Production

It was established, from field work, that the majority of households in medium- and low-density rural settlements (mainly Qadi traditional area) are involved in cultivation for household use (food security) and trade in small surpluses. It was further established that a limited number of small holder farmers are operational in the more rural areas of Ward 39. It appears that the limited number of commercial producers in an area with moderate potential and relatively large areas available for production is related to constraints to production on traditional lands. This was indicated by the Extension staff for this area. These limitations include:

Table 37. Limitations on small holder production

No.	Challenge
1	Limitations on access to agricultural land at scale in traditional and state owned areas owing to land allocation system and unresolved land claims.
2	Lack of access to loan capital and production finances due to lack of security on traditional agricultural lands.
3	Lack of up to date farm gate planning to confirm location of high value agricultural lands and associated production potential.
4	Lack of in-field infrastructure for production purposes.
5	Limited access to traction equipment for land preparation, crop maintenance and harvesting.
6	Ongoing security issues relating to livestock and crops.
7	Lack of market information on produce quality, demands and prices.

No.	Challenge
8	Lack of training opportunities on commercial production and business management.
9	Lack of storage capacity for inputs, crop harvest and equipment.
10	Challenges to transportation for production, inputs, and haulage for processing and marketing.

Source: Mr Magwaza – senior extension officer Ward 39.

7.3.5. Types of Producer Suited to Vulindlela

It is against this background that the focus of future investment in this sector in Vulindlela needs to include promotion of the following types of production:

- Homestead food production amongst households throughout Ward 39 as the basis of food security in the face of increasing levels of unemployment and local economic hardship which is likely to challenge South Africans for some years to come.
- The establishment of intensive market garden production in areas adjacent to the proposed intervention areas around identified centres at KwaMncane and Ncwadi and mobile centres at Elandskop, Gudlintaba, Maqadeni and Deepdale. The aim here is to ensure food production is taking place close to assured markets, as noted above, to limit costs and create local economic opportunities.
- The establishment of viable small holder producers on remaining areas of good agricultural lands set aside broadly in those areas 10 areas identified in Figure 40. The aim is for small holders to produce sufficient produce for processing at the processing and manufacturing centres identified in the intervention areas and then either sold in local outlets or further afield in other parts of the sub-region.
- Refinement and upgrading of the livestock in Ward 39 through the introduction of: selective breeding programmes, disease control, reduction in numbers and improvement in herd quality, rotational grazing of natural pastures, regular livestock sales at defined sales yards (eg. Elandskop) and abattoir facilities at intervention areas such that residents can “buy local” and benefit from competitive prices.
- The improvement in quality and reduction in numbers of horses and donkeys needs to be investigated in terms of sales value to probable buyers in Lesotho (to be confirmed).
- Further investigations into the feasibility of converting the small area of commercial forestry in the northeastern corner of Ward 39 into a viable community based initiative. This could form part of the Msunduzi review of forestry.

In summary, there are opportunities available for the establishment of small scale commercial production in Ward 39 in the 10 areas identified. As noted above, the focus in production needs to be on food security, market gardening and promoting a small holder farmer expansion programme. There are opportunities for commercialisation of the livestock herd in ward 39 which need further investigation and “buy in” from livestock owners. In order to achieve this there are a number of components that need to be set in place as a pre-condition to establishment. These are considered in more detail below.

7.3.6. Smallholder Agricultural Value Chain

Overview of Components

Establishment of an effective smallholder agricultural production and marketing chain requires integration and alignment of a number of components including a hierarchy of centres located on a defined system of transport routes which provide access to collection points in rural villages for a variety of crops and produce transported by farmers where these points provide basic facilities which allow for “bulking up” ready for collection and bulk transport to processing hubs in established intervention areas. The processing hubs are included into processing-manufacturing parks established in centres where a range of associated processing activities take place including: processing and packaging, re-cycling of waste and production of agricultural inputs for farmers etc. Bulk transport to and from collectors involves pay loads in both directions – taking inputs to farmers and removing produce in bulk for processing and marketing.

The entire value chain is dependent upon volume and quality of produce supplied by farmers. As noted above, volumes of fresh produce are limited in Ward 39. There is evidence of large numbers of livestock in the northern, central and southern areas of Ward 39. However, actual figures could not be obtained from the authorities responsible for this area.

There is no evidence of a functional commercial forestry operation in Ward 39. Although there is evidence of a site prepared for this purpose and lands currently being used for community woodlots. Thus there is no evidence of major commercialisation by crop, fresh produce, livestock and timber producers in Ward 39. The majority of production appears to be undertaken on a subsistence basis. In other words a major investment will be required in order to establish the physical and economic infrastructure necessary to commercialise this sector in Ward 39. Furthermore, production at scale as compared to subsistence, requires high levels of training and skills amongst farmers. However, there is no evidence that these skills in planning, production, processing, marketing and finances required for commercial production are in place among producers at Ward 39. In other words a major investment would be required in farmer selection, training and mentoring if the concept of commercialisation of crop, livestock and plantation production is embraced and accepted by the authorities, traditional councils and local people in Ward 39.

7.3.7. Agricultural Intervention Strategies

The following strategies are noted for establishment of a viable agricultural sector in Vulindlela:

- Detailed feasibility studies are conducted on land in Ward 39 to establish localities of land with different potential.
- Consideration can be given by the Msunduzi Municipality to facilitate the establishment of a stakeholder group interested in investing in the different aspects of agricultural production in both the traditional and state land areas of ward 39.
- The stakeholder group contributes to the establishment of the agri-hubs in Ward 39 based on mobile technology and information sharing.

- Further funding be sought to expand the existing farmer support provided in Vulindlela. This should be linked to a farm mapping programme to enable the monitoring and support of production by farmers and associated budgeting for and management of inputs.
- Funding for the implementation of expansion of lands be sought in terms of the following:
 - Capital costs of new lands development requiring grant funding.
 - Operational costs to be partially grant funded, but moving towards funding from returns on production by farmers.
- An investor needs to be located for the establishment of pack houses in the intervention areas which can be used for the washing processing and packaging of fresh produce. This would be a pre-cursor to the further investment in other forms of processing and the possible establishment of a processing parks in these centres.
- A collective marketing process needs to be initiated amongst local small holder producers to empower them to enter the market place and in the process expand opportunities for production. The aim is to involve groups of local farmers in all aspects of the marketing process and to ensure that they have marketing “intelligence” from agri-hubs. This will enable them to work more closely with the networking unit and stakeholders for market information, inputs, transport, sales and forecasts into the next production season.
- Introduction to farmers (small scale) of the notion of diversification of the types of production: inclusion of alternative high value cropping enterprises into the current household food security regime aimed ultimately at local future up-market consumption and import substitution.
- Locating prime agricultural areas in the 10 selected locations and identifying existing small scale farmers in these areas to work co-operatively in production, transportation and marketing.
- Ensuring that small holders have access to the full range of support services. This will be achieved by gradually building up the marketing, processing and support infrastructure at all levels working with government and the private sector. Thus investment will be required in institutional development, infrastructure (road upgrades, collector facilities, processing facilities etc.), improved extension support, training, collective marketing, information communications technology, transportation and mechanisation.
- Avoiding the establishment of co-operatives for production. Rather rely on the individual farmer as the producer working co-operatively with other producers to secure inputs into transport, marketing etc.
- Promote the establishment of co-operatives for the sharing of inputs, transport and marketing amongst small holder producers.
- Introduce the concept of commercialisation of livestock herds, rotated veld management practises and reduction in herd size accompanied by increase in value of stock through selected breeding programmes.

8. INSTITUTIONS TO IMPLEMENT THE WARD 39 LAP

8.1. Introduction

As noted previously in this report, Ward 39 and therefore Vulindlela, comprises land owned and administered by the municipality, Ingonyama Trust Board, Traditional councils and the state (DRDLR). Effective co-ordination and management of state entities is required in order to achieve effective implementation of plans and projects. Policy and legal frameworks for this type of inter-jurisdictional co-ordination and co-operation have been developed, but in differing fields and applications, but have relevance in this context and will be considered in this section of the report.

The NDP recommends that municipalities and traditional structures establish entities that can be used to effectively plan and develop areas under traditional management. No functioning example of such an entity could be located in the literature. Since Vulindlela involves a wider range of state entities it is argued that a more comprehensive inter-jurisdictional entity type of structure may be required to plan, implement and operate the Vulindlela area on behalf of its different jurisdictional entities. Examples of these types of structures exist in the water sector. They have been established for bulk water services provision (uThukela Water) and for bulk water infrastructure construction (Trans-Caledon Tunnel Authority - TCTA). Despite their establishment in the water sector, they have relevance in this context owing to the inter-jurisdictional nature of bulk works and due to the limitations of municipalities and line function departments performing the planning, implementation and successful operation and maintenance of multi-disciplinary projects.

A joint management structure involving the above state entities was envisaged in the VLAP to co-ordinate and manage implementation of the plan. However, despite attempts by Msunduzi to establish this structure little progress has been made with implementation of the plan and associate projects. This delay has led to disillusionment amongst local leadership, communities and municipal staff. Failure to deliver on the plan serves to compound the challenges facing the development of Vulindlela and its people i.e. urban sprawl, loss of agricultural land, provision of lower order services etc.

This serves to demonstrate the inability of organs of state to voluntarily co-ordinate their activities without a legally defined structure that requires delegation of specified powers and functions and resources. The TCTA (2017) provides an excellent example of an inter-jurisdictional entity designed to deliver bulk water infrastructure. Owing to the TCTA's success in overcoming inter-jurisdictional challenges and, in the process, achieving successful delivery at project level, it was subsequently transformed into a generic Special Purpose Vehicle (SPV) for project delivery and used on a number of major bulk water projects throughout RSA for this purpose.

It is argued, in the face on the non- constitution of the joint management entity envisaged in the VLAP, that the entities responsible for land administration and ownership in Vulindlela agree to the establishment of a Special Purpose Vehicle (SPV) for implementation of the Spatial frameworks and associated projects. The structuring of the SPV should draw on the experience (good and bad) gained in RSA on creating such entities. In essence what is required is a vehicle that has delegated authority to identify and prioritise the implementation and ongoing operation and maintenance of projects in

accordance with plans approved by the authorities. One of the key success factors of the TCTA was that it had the ability to raise and account for all finances. Furthermore it developed internal financial and technical capacity necessary to deal with the following functions:

- Raising of capital to deal with capital investment;
- Managing and accounting for the expenditure of such project funding;
- Separating capital and operational accounting systems;
- Accounting for funding and delivery at project level to funders;
- Ensuring high level expertise in the SPV to deal with financial, technical, administrative and communications issues.

Whilst the context and requirements of Vulindlela differ from those of the TCTA, nonetheless certain of these functions have common cause and therefore need to be built into the functions defined for the SPV. This is necessary in order to overcome challenges faced by each of the authorities responsible for different functions in the Vulindlela area. The challenges faced by the authorities which have served to undermine establishment of the joint management structure include, but are not limited to, the following:

- Political challenges at local, municipal and provincial levels;
- No dedicated budget commitment and allocation to the development of Vulindlela, but rather fragmented budgets allocated to municipal water, roads etc;
- Lack of specialist technical, financial and administrative resources dedicated to the delivery and management functions in Vulindlela;
- Inability of the different authorities to make provision for logistical support in the form of offices, vehicles, telecommunications etc. necessary for the success of this initiative;
- Inability of the authorities to legally define the basis for the co-ordination of their different functions and inputs into the development process leading to confusion and duplication;
- Reluctance by the authorities to create an effective land management system in traditional areas combining the indigenous knowledge of Traditional Councils with the administrative expertise of municipal officials.

It is contended that in order to succeed with planning and implementation of land development and infrastructure, a dedicated cross-sectoral SPV structure is required to ensure initiation, implementation and on-going management of such cross-sectoral strategic plans.

8.2. Components of the Special Purpose Vehicle (SPV)

In order to be effective and sustainable, the proposed SPV the structure needs to include the following key components:

- A capacitated technical, financial and administrative entity appointed by the authorities to deliver projects and services to the inhabitants of Vulindlela;
- As its operational basis, a legal operational framework approved and supported by each of the listed authorities responsible for this area.
- Delegated powers to perform the following functions on behalf of the signatories to the agreement:

- Raise funding (both off and on budget) for project implementation.
- Establish financial and technical accounting systems which operate at project and institutional level for both grant funding and that generated from services provision.
- Establish financial and administrative arrangements for income generation from services provision;
- Utilise funding to provide for operational expenses associated with services provision;
- Set up core logistical arrangements necessary for project implementation, project hand over and operation and services provision.
- Establish effective communications mechanisms to work with local people and community structures.

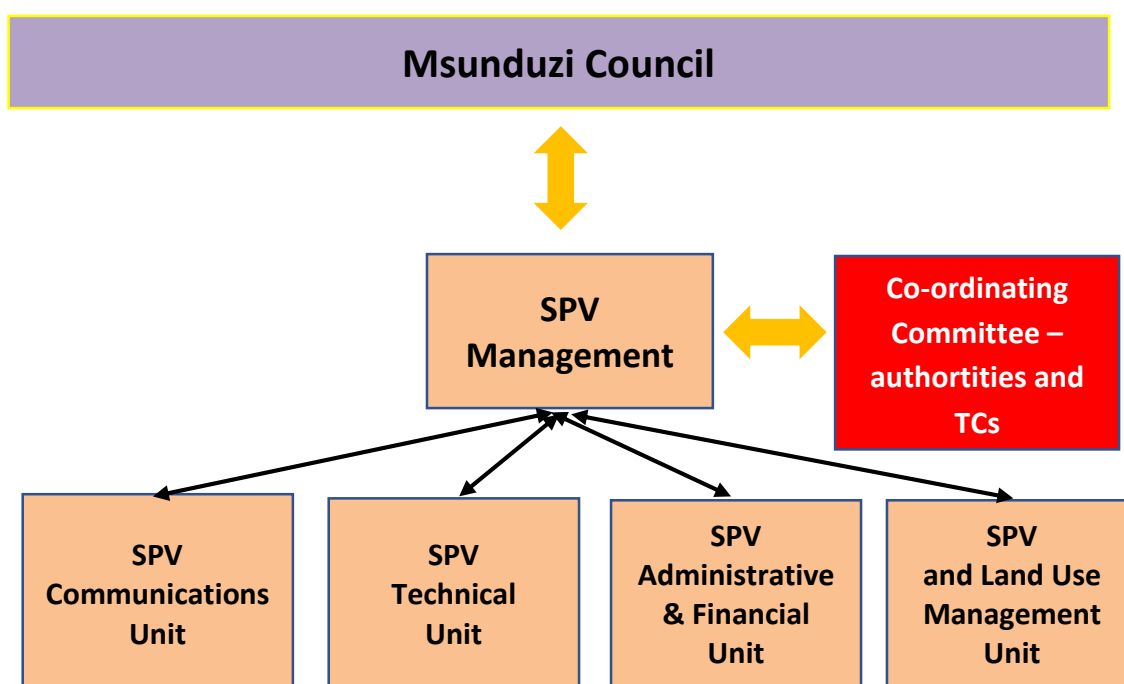
The structure of the SPV should include the following:

- Overall manager with delegated authority to direct the SPV staff and account to the residents of Ward 39 and Vulindlela and to member entities for services provided, monies raised and expended and types and levels of development achieved in terms of defined targets and milestones.
- A communications section dealing with awareness creation among the people under its jurisdiction.
- A technical section dealing with detailed design, raising of project funding (government and donor grants) and “hard” project implementation (construction of infrastructure, township layout) and operation and maintenance.
- Land management and administration involving representation from traditional structures, the municipality and the ITB.
- Delegated authority from the municipality to receive and conduct initial processing of development applications prior to directing them to either the Authorised Officer or the Joint Municipal Planning Tribunal for final decision making.
- Revenue generation related to billings and payment for services.

This structure requires delegations to proceed with implementation of funded mandates from its parent bodies. This should not function simply as a works depot of the municipality, but rather operate as a dedicated functional entity with dedicated responsibility for “turning the Greater Vulindlela and Ward 39 around”.

An illustration of the components of the SPV is provided in Figure 41 below.

Figure 41. Suggested structure and reporting lines for the Special Purpose Vehicle



8.3. Functions of the SPV

The primary responsibility of this entity is providing defined services to the people within its jurisdiction. The following functions of the SPV are noted, once established, and would need to be more fully investigated as part of the feasibility study necessary for its establishment and preparation of a Business Plan:

Establishment of fully functional management, communications, technical and administrative components of the JMU involving:

- An effective administrative centre of GEVDI and a satellite centre at Taylor's Halt.
- Appointment of a small group of qualified, trained and experienced staff to assume responsibility for implementation of the relevant LAPs and the provision of services following the principles of "Developmental Governance" as contained in the Interim Local Government Transitional Act (Act 26 of 1995) which preceded the Municipal Systems Act (Act 32 of 2000) and the Municipal Structures Act (Act 117 of 1998). This involved outsourcing to local entrepreneurs and holding them accountable for delivery thereby creating local skills and employment.
- Assuming responsibility for ongoing utility services provision from existing line function municipal and governmental agencies involved in the Greater Edendale area (water, sanitation, transportation, energy, billings for services and collection of revenues such as services, rates and taxes).
- Negotiating with local structures and proceeding with detailed design and the implementation of urban centres (intervention areas) as identified in relevant Local Area Plans. This would need to include negotiations with traditional councils and ward structures over the location, nature and extent of the proposed centres, the excision of land from the ITB and the introduction of a land market, densification of residential development and the establishment

of commercial and manufacturing precincts within these proposed centres or intervention areas.

- Communicating the need in terms of the SPLUMA and the associated Msunduzi Municipality Planning Spatial By-Laws to establish a “wall to wall” land use management scheme in Greater Edendale and to progressively introduce an appropriate form of land administration:
 - In the proposed centres or intervention areas.
 - In the traditional settlements, agricultural and open space areas.
- Working with the Department of Agriculture and local farmers in the preparation and implementation of an agricultural development plan for Ward 39 and Vulindlela.

Table 38: Programme for institutional establishment

ACTIONS	2018-19 Fin Year								2019-2020 Fin year													
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb			
Convene a meeting of municipal EXCO to discuss and adopt the notion of establishment of an SPV to implement and operate the greater Vulindlela LAP																						
Convene meeting of key stakeholders to resolve on establishment of an SPV and to reach in principle agreement on delegation of budget and powers to such vehicle																						
Convene meeting of Ward Councillors, Traditional Leaders and Officials to confirm establishment of SPV.																						
Appoint legal/institutional specialist to formulate detail and costs associated with establishment and operation of SPV - i.e. business and implementation plans																						
Present findings of business and implementation plans to key stakeholders for approval and adoption (i.e. Municipal council, ITB, DRDLR, Traditional Councils & COGTA)																						
Submit business plan & implementation programme to municipality and other governmental agencies for funding																						
establishment of SPV: offices in Vulindlela, appointment of key																						
Proceed with implementation of SPV involving:																						
Government budget allocation																						
Establishment of land adminstraion offices centrally located in Vulindlela including: admin, finance, technical, land admin, communications																						
Joint staff selection, apointment & training																						
Staff to confirm prioritised projects for implementation (as in LAP) with key stakeholders																						
Prepare detailed development plans, projects and costs for intervention areas																						
Proceed with implementation of projects through locally based contracting as funding is made available each financial year from funding agencies																						
SPV to assume responsibility for operation and maintenance of existing infrastructure in Vulindlela																						
Establishment of appropriate land administration procedures for Vulindlela based on SPLUMA																						
Training of staff in land administration procedures																						
Proceed with implementation of land admin system in Vulindldlea																						
Set up an ongoing communications programme for people of Vulindlela structures																						
Annual review of performance of SPV including audit & accounting to authorities and revieing programme for next financial year																						

9. PROJECT PROGRAMME AND BUDGETS

9.1. Introduction

Owing to the history of Ward 39 it has not, in the past, received the level of strategic capital investment required to promote sustained development. As previously mentioned, the Ncwadi portion of Ward 39 in the southwest has been relatively neglected in terms of the provision of utility services which have been restricted to limited water supply, electricity and gravel roads. In contrast, the Elandskop area and surrounds on the western boundary of Vulindlela have been furnished with water from two reservoirs, a mixture of tarred and gravel roads, VIP sanitary systems and low income housing.

Understanding that there are many competing demands on government's funding, it is recommended that a phased implementation plan is followed. Three implementation timeframes are suggested for the Ward 39 project programme:

- Short term (1 to 3 years).
- Medium term (4 to 7 years).
- Longer terms projects (8 and more years).

In the attached budget it should be noted that the emphasis is on short and medium term projects owing to the fact feasibilities are required in order to establish full project budgets, particularly for the intervention areas. Once these feasibilities have been completed then budgets for the medium and longer term can be completed.

9.1.1. Strategic Investment Areas

Strategic investment areas considered in preparing the implementation plan for the VLAP follow.

9.1.1.1. Institutional Establishment

Land in the ward is predominantly owned by the state (59%) and by the Ingonyama Trust Board (39%). ITB land in the east is administered by two traditional councils (TCs), i.e., Funze TC and Mpumuze TC (portions of ward 7 and 8 Vulindlela). Similarly, in the west of the ward land is administered by the Qadi traditional council. The land between these traditional areas is administered by the state and is largely un-occupied.

Land use management and land use allocation are administered by two authorities in Ward 39. Msunduzi Municipality and its councillors are charged with the responsibility to manage land use, whilst traditional leaders, together with the Ingonyama Trust Board are responsible for land allocation procedures, which includes long term commercial leases. This separation of the land use management and land allocation responsibilities necessitates the establishment of an institution to ensure the joint management of land use and strategic development. This institution was initiated as part as the Vulindlela LAP. Whilst the Vulindlela Joint Management Committee institution has had a sluggish start, it is nonetheless recommended that the Joint Management Committee remains in place

and be further amplified. It is believed that this is a critical pillar for the implementation of the both LAPs.

9.1.1.2. Urgent Demand

Immediate interventions in Ward 39, identified in the *status quo*, which will serve to alleviate hardship for local communities include:

- The provision of an uninterrupted water supply to the entire Ncwadi area as defined within its Urban Edge;
- Gravel road upgrade and continual maintenance: Ncwadi centre and surrounding settlements;
- Investigate the viability/ need for the establishment of a Tsusong Centre at Ncwadi;
- Have the land owner develop and platform and service (including the two service roads) the Mixed Use area within Ncwadi, and then market same within buildings it constructs, or on that developed land to be made available for construction by others;
- Substantially upgrade the taxi rank at Ncwadi by refurbishment (paving, illumination, refuse receptical provision, toilet construction, etc.);
- Re-establishment of the cattle sales yard and handling pens at Elandskop station and road upgrade from Elandskop to the M70 to enable the transport of livestock.
- Resolve the feasibility of re-establishing a passenger rail service from Pietermaritzburg station through to Bulwer and Underberg with the re-furbishment of key stations *en route* to improve accessibility to the residents of Vulindlela and Ward 39.
- As was identified for Vulindlela, the need for ICT and internet connectivity has become an essential ingredient for business development, social interaction, services provision and education. These services do not exist in Ward 39, particularly in Qadi, and therefore require urgent attention through implementation of networks into the identified intervention areas.
- As was identified for Vulindlela, the need for ICT and internet connectivity has become an essential ingredient for business development, social interaction, services provision and education. These services do not exist in Ward 39, particularly in Qadi, and therefore require urgent attention through implementation of networks into the identified intervention areas.

9.1.1.3. Conditions Conducive for Investment

One of the main outcomes of the analysis of material gathered in the *status quo* analysis was the need to identify intervention areas in Ward 39. Based on national and provincial planning and development guidelines, these areas are intended as focal points for the introduction of land use planning, land rights and land markets to accommodate future growth and development in this area of Msunduzi. Government's primary role is to create an enabling environment for development through provision of infrastructure and social services. It is argued that this will create conditions favourable for private sector investment, job creation and revenue generation for government to meet operational costs. The planning and refinement of the two identified intervention areas forms the crux of the Ward 39 Local Area Plan and its economic development initiatives. The planning phase must be implemented as soon as possible, followed by the catalytic infrastructure development programme. This section of the LAP provides a suite of projects, programmes and illustrative budgets for funding and implementation.

9.1.1.4. Programmed state and municipal infrastructure investment

The Msunduzi Municipality's 2017-22 IDP, SDF and the Medium Term Investment Framework have identified a number of infrastructure projects to address the service demands in respect of Ward 39 and more so, Vulindlela. Due to limited resources available to Msunduzi municipality and other governmental agencies, this implementation plan seeks to move away from uniform services delivery throughout Ward 39 as was envisaged in past planning initiatives. The aim in this plan is to introduce the differential identified in national and provincial planning policies. This involves investing in higher order services in the intervention areas where costs recovery is essential and provision of lower order services in surrounding rural settlement where free basic services can be provided. In addition, it is essential to identify more cost-effective methods of services delivery than those conventionally applied in urban development (e.g. energy saving, densify housing, minimise water use, reduce transport costs (locate workers close to place of work etc.).

In the provision of bulk services, the aim should be to work within a long term planning framework where each project, meeting short and medium term requirements, fits into the overall bulk infrastructure plan and works towards resolving services requirements for population growth anticipated in 20-30 years' time.

9.1.1.5. Subsistence agriculture support programmes

Growing population trends and the increasing costs associated with food supply necessitates the realisation of agricultural potential in the future development of Ward 39. This is necessary to move toward local import substitution of foodstuffs, reduce costs and achieve improved local food security and local employment creation. In the future development of Ward 39, provision needs to be made for the production of food close to markets (i.e. intervention areas). The potential for agriculture in Ward 39 is favourable, but varies depending on location in the Ward. Thus, continued food security production for householders linked to the introduction of small holder commercial production could be used to meet the food requirements of the people of this area. However, this would be subject to a major investment in establishment of the critical components of the production, processing and marketing chains as a pre-condition to promoting the growth and expansion of this as a primary sector in Ward 39 as an integral part of Vulindlela. A further pre-requisite is the preparedness of a selection of local farmers to transform to small scale commercial farming and in the process to become responsive to market opportunities such as the recently launched Nando's community farming initiative.

9.1.1.6. Ecological infrastructure

Ecological infrastructure plays an increasingly important role in maintaining the ecosystem goods and services provided in this areas, such as reducing flood peaks during the summer periods and ensuring baseflows continue during the winter periods. Furthermore, in terms of the hydrology of the area, these services include filtration of water, in the instance of wetlands and riparian areas, thus improving the overall water quality in the streams and rivers, which in the Ward 39 area is important as often these are the primary source of water. Additionally, these systems play an important socio-economic role in that often they provide building materials that are utilised in rural areas as well as providing grazing for the livestock. This is moderation should not cause significant damage as long as

careful monitoring is undertaken, otherwise these services are compromised. To a lesser extent if the integrity of the ecosystems is maintained then this may assist in mitigating the effects of climate change. With Msunduzi Municipality adopting climate change and environmental management policies in 2015, the protection of the Vulindlela open space systems is a critical asset, which cannot be allowed to be subjected to further damage. Promoting the rehabilitation and management of biodiversity in Vulindlela forms an integral part of the VLAP particularly that related to “green job” creation for local people, creating a sense of place and mitigation of climate change.

9.1.2. Project Alignment

In the preparation of this project programme an investigation was undertaken into the Msunduzi SDF, IDP and the city development strategy in order to establish existing projects and funding streams in municipal budgets. Based on the outcomes of these findings, the following large scale projects are included into this VLAP:

- IRPTN as a major focus of future investment in the transportation network to enhance accessibility. This needs to be extended to include the upgrading of the rail network;
- Include at least the core areas in the intervention areas with fibre optic broad-band infrastructure for access to the ADSL network;
- Upgrade of bulk water supply network with the re-alignment of the recently completed Vulindlela Water Master Plan (GLS Consulting 2015) to include supply to KwaMncane and Elandskop.
- Review of the policy associated with type and level of basic services with particular emphasis on reticulated sewerage in the KwaMncane and Elandskop intervention areas and lower order services in surrounding rural settlements.
- Provide state-funded high density residential development in the “intervention areas” within the Elandskop and Kwamncane areas.
- Cluster governmental services in the “Social Services” area identified at Kwamncane;
- Investigate the location of a suitable solid waste sorting facility (and possible recycling facility) linked to an associated collection service;
- Investigate alternative sewage disposal facilities for intervention areas and high density settlements;
- Undertake studies to determine the suitability of the identified cemetery sites for such use;
- Identify opportunities for economic growth and development in the intervention areas as well as in the rural component, particularly in the agricultural and nature-based tourism sectors;
- In concert with adjoining municipalities, develop a programme for managing the number of cattle on grazing areas so that the land’s carrying capacity is not further reduced;
- Develop projects for the rehabilitation of the eroded green areas so as to restore the natural assets and agricultural productivity;

9.1.3. Project implementation agents

There are essentially three implementation agents for projects contained in the Ward 39 LAP. The project implementation plan identifies the relevant agent or combination of agents responsible for project implementation.

- The first relates to projects managed and funded by the municipality which relates to service infrastructure.
- The second relates to state aided projects for example: housing which will be managed and supported by the Department of Human Settlement.
- The third component relates to private sector and community initiatives.

This will need Msunduzi to facilitate involvement through incentives and creating conditions which will lend itself to private sector and community development.

9.1.4. Implementation plan

The Vulindlela LAP had identified a number of strategic intervention projects to give effect to the Vulindlela LAP. These projects have been augmented by further projects identified in terms of Ward 39. The projects detailed in Table 39 and shown in Figures 42 and 43 below, therefore represent an holistic view of all the projects to give affect to the development of Vulindlela and Ward 39.

9.1.4.1. Area of influence of projects

Projects, based on their influence can either be applicable to the whole area, for example the IRPTN or the have a localised influence, such as reservation of an area for commercial land use. Larger scale projects will therefore have a more significant influence on encouraging development in Vulindlela and Ward39 than their smaller counterparts.

9.1.4.2. Strategic intervention projects

Strategic intervention projects in respect of Ward 39 include the following:

- Establishing a joint decision-making structure for land development.
- Gaining community, political and administrative support for the proposed developments in Ward 39, most importantly, the development of the intervention areas and implementation of land use management.
- Preparing detailed precinct plans and layouts for the two intervention areas where technical, financial and social finality is reached on areas suited to different land uses: for example location and level of densification, types and levels of services to be provided, economic opportunities to be targeted etc.
- Securing budget for detailed technical design and costing of bulk infrastructure requirements for these two centres based on the outcome of finalised precinct plans.
- The extension of identified components (e.g. passenger rail) and implementation of the IRPTN and its associated infrastructure as a precondition to improved accessibility and economic opportunity in Ward 39.
- Providing the full package of infrastructure services and a package of incentives to each intervention area to enable public-private sector investment.
- Preparation of a structured agricultural development plan for Ward 39 which distinguishes household food security from small and large scale commercial production initiatives. The plan should further detail individual areas for different types and levels of production and the costs (infrastructure, training, equipment, land preparation, transport, processing and marketing) necessary to “kickstart” this as a productive sector in Ward 39.

In terms of prioritising development projects in Ward 39, it is recommended that the strategic principle is applied in order to promote sustainable development. The projects identified in the Table 39 are included in Figures 42 and 43 for locational purposes.

Table 39. Project programme and budgets

Project reference	Project name	Project description	Responsibility	Value Estimated	In CDS	CDS Targets	Short term			Medium term				Loner term								
							Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13			
Institutional arrangements																						
IA 1	Review Joint Land Use Management Decision-making authority and extension to include Ward 39	Feasibility of establishing a joint land administrative unit (JLAU)	Msunduzi Municipality, the ITB and the House of Traditional Leaders	R 600 000																		
		Feasibility study for establishment of a JLAU																				
		Municipal financing		650 000 p/a																		
		Establishment & ongoing operation - costs still to be established in medium to longer term																				
		Appointment of a manager for the JMU to be at Taylors Halt responsible for establishing and operating the administrative centre and associated sections anticipated for the JMU at Vulindlela																				
Intervention area projects																						
PIP 1	Taylors Halt intervention area	Prepare TORs for feasibility studies, prelim design and costing for the establishment of identified development centres in the LAP:	Msunduzi Municipality together with the ITB and Traditional leaders	R 2 400 000																		
		Municipality to undertake detailed planning applications, infrastructure development plans, EIA's, and relevant studies.																				
		Proceed with implementation - costs to be established for the medium to longer term																				
PIP 2	Sweet Waters intervention area	Prepare TORs for feasibility studies, prelim design and costing for the establishment of identified development centres in the LAP:	Msunduzi Municipality together with the ITB and Traditional leaders	R 2 400 000																		
		Municipality to undertake detailed planning applications, infrastructure development plans, EIA's, and relevant studies.																				
		Proceed with implementation including new road design and construction-costs to be established for the medium to longer term																				
PIP 3	KwaMncane and Elandskop Precinct intervention plan	Prepare TORs for feasibility studies, prelim design and costing for the establishment of identified development centres in the LAP:	Msunduzi Municipality together with the ITB and Traditional leaders	R 2 400 000																		
		Municipality to undertake detailed planning applications, infrastructure development plans, EIA's, and relevant studies.																				
		Proceed with implementation-costs to be established for the medium to longer term																				
PIP 4	Mafakatini intervention area	Prepare TORs for feasibility studies, prelim design and costing for the establishment of identified development centres in the LAP:	Msunduzi Municipality together with the ITB and Traditional leaders	R 1 440 000																		
		Municipality to undertake detailed planning applications, infrastructure development plans, EIA's, and relevant studies.																				
		Proceed with implementation- costs to be established for the medium to longer term																				
PIP 5	Ngubeni intervention area	Prepare TORs for feasibility studies, prelim design and costing for the establishment of identified development centres in the LAP:	Msunduzi Municipality together with the ITB and Traditional leaders	R 960 000																		
		Municipality to undertake detailed planning applications, infrastructure development plans, EIA's, and relevant studies.																				
		Proceed with implementation-costs to be established for the medium to longer term																				
PIP 6	Henley Dam intervention area	Prepare TORs for feasibility studies, prelim design and costing for the establishment of identified development centres in the LAP:	Msunduzi Municipality together with the ITB and Traditional leaders	R 4 200 000																		
		Municipality to undertake detailed planning applications, Land Rights Enquiries, expropriation, infrastructure development plans, EIA's, and relevant studies.																				
		Proceed with implementation-costs to be established for the medium to longer term																				
PIP7	Ncwadi Intervention Area	Prepare TORs for feasibility studies, prelim design and costing for the establishment of identified development centres in the LAP:	Msunduzi Municipality together with the ITB and Traditional leaders	R 960 000																		
		Municipality to undertake detailed planning applications, infrastructure development plans, EIA's, and relevant studies.																				
		Proceed with implementation-costs to be established for the medium to longer term																				
		Establishment of a Thusong Centre and Taxi rank		R 600 000																		

Project reference	Project name	Project description	Responsibility	Value Estimated			Short term	Medium term	Loner term		
Bulk infrastructure projects											
BIP 1	Implementation of IRPTN	Implementation of rapid transport system:	Msunduzi Municipality	R 612 087 000	Capital project	6% implementation annually					
		Upgrade and widening of M70									
		Upgrade of existing rail network for passenger & goods traffic									
BIP 2	Upgrade of gravel roads	Upgrading of gravels roads in wards, 1, 2, 4, 6 - 9, Vulindlela. As per the 2017 - 2022 IDP.	Msunduzi Municipality	R 71 919 000	Table SA36 Detailed Capital budget						
BIP 3	Implementation of ADSL fibre optic high speed communications network	Investigation into implementation of ADSL fibre optic high speed communications network linking proposed centres in Vulindlela	Msunduzi Municipality	R 1 800 000							
BIP 4	Vulindlela Lighting	Additional lighting to be provided in the Vulindlela area as per the 2017 - 2022 IDP.	Msunduzi Municipality	R 24 905 000	Table SA36 Detailed Capital budget						
BIP5	Co-generation of electricity	Investigation into feasibility of co-generation of electricity options in each of the defined centres	Msunduzi Municipality	R 3 000 000							
		Implementation & operation of co-generation systems									
		Electrification of various wards as per 2017 - 2022 IDP.		R 17 000 000	Table SA36 Detailed Capital budget						
BIP 6	Bulk potable water supply to high density centres in Vulindlela	Feasibility of bulk potable water provision to proposed centres	Msunduzi Municipality	R 6 000 000	W & S 14 (Strat 3)	51 Km pipeline constructed and 1 reservoir					
		Implementation & operation of bulk potable water supply to centres									
BIP 7	Bulk potable water supply to high density centres in Ward 39	Feasibility of bulk potable water provision to proposed centres	Msunduzi Municipality	R 6 000 000	W & S 14 (Strat 3)	51 Km pipeline constructed and 1 reservoir					
		Implementation & operation of bulk potable water supply to centres									
BIP 8	Basic Water Upgrade	Basic Water upgrade for Wards 1 - 9, 39. 2017 - 2022 IDP.	Msunduzi Municipality	R 99 191 000	Table SA36 Detailed Capital budget						
BIP 9	Umgenti Water Upgrade for Vulindlela	Umgenti Water Upgrade for Vulindlela	Umgenti Water	R 72 000 000	Project 172 of Table 96						
BIP 10	Bulk sewerage provision in proposed high density centres & high density rural settlements	Feasibility of bulk sewerage provision in proposed high density centres & high density rural settlements	Msunduzi Municipality	R4 000 000	W & S 06 (Strat 3)	5 500 VIPs by 2020					
Implementation & operation of bulk sewerage system(s)											
BIP 11	Vulindlela solid waste disposal site and refuse collection system	Feasibility into establishment of a Vulindlela solid waste disposal site and refuse collection system	Msunduzi Municipality	R 4 000 000							
		Implementation & operation of solid waste disposal site & collection system									
BIP 12	Establishment of cemetary sites in main intervention areas	Feasibility into establishment of Vulindlela cemetary sites in each of the intervention areas	Msunduzi Municipality	R 3 000 000							
		Implementaion & operation of cemetary sites									
BIP 13	Provision of State sub-sidised housing	Rollout Vulindlela housing program. Provision of low income housing for Vulindlela area 2017 - 2022 IDP.	Dept of Human Settlements	R 440 674 000	Project 192 of Table 96						
Land use scheme											
LUS 1	Preparation of a town planning scheme for Vulindlela including Ward 39	Establishment of a land use management system:	Msunduzi Municipality	R 2 100 000							
		Prepare planning scheme for Vulindlela and Ward 39 - centres & rural areas									
		Ensure community & Trad Councils buy-in to scheme									
		Set-up landuse admin system in JMU to process applications and feed them to appropriate structures for decision making (MPT)									
		Operating & maintaining admin system									
Community consultation and liaison											
CC 1	Public consultation	Participation and communication	Msunduzi Municipality	R 3 000 000							
		JMU to set up communications networks using local structures									
		Ongoing communications on impementation of LAP at local level									

Project reference	Project name	Project description	Responsibility	Value Estimated			Short term	Medium term	Longer term
Agricultural development programme		PROJECTS RURAL AREAS VULINDLELA							
ADP 1	Vulindlela agricultural development project	Farmer identification and verification	Msunduzi Municipality	R 500 000					
		Assess existing farmer skills and capabilities							
		Assessment of existing: sources inputs, types & locations & methods of production & markets		R 1 000 000					
		Identify additional lands for small holder expansion with farmers & Dept Agric staff							
		Conduct detailed feasibility on said lands		R 5 000 000					
		Prepare management plans for areas with good and moderate potential including infrastructure and land preparation requirements and costs		R 2 000 000					
		Provide training and mentorship support for farmers wishing to participate in small holder expansion programme		R 3 000 000					
		Set up information network (cell phone) for farmers to enable them to access input suppliers, markets transport etc.		R 5 000 000					
		Conduct feasibility on establishment of agric produce processing hubs in identified centres in Ward 39		R 1 000 000					
		Work with livestock owners in Ward 39 to establish feasibility of herd upgrade, rotational grazing and commercialisation process		R 2 000 000					
		Proceed with fundraising and implementation of above projects		R 1 000 000					
		Total (Planning & capital investment - excluding operational costs)		R 20 500 000					
Open Space Projects		PROJECTS GREEN OPEN SPACE							
OSP 1	Prepare a management plan for rehabilitation and management of 'green areas' in Vulindlela and Ward 39	Prepare a management plan for rehabilitation and management of 'green areas' in Vulindlela:	Msunduzi Municipality	R 2 000 000					
		Establish status of 'green' areas at field level and establish type of management interventions required to rehabilitate and sustain ecological capital in Vulindlela							
		Establish interventions required in settled areas to minimise negative impacts on rivers, ground water, grasslands and forests							
		Prepare environmental management plan for Vulindlela including both sensitive areas as well as settled areas and include conditions of use in Vulindlela scheme							
		Prepare applications to Working for Water, Wetlands, Forests etc. for funding for rehabilitation							
OSP 2	Identification of offset areas in respect of Smithfield Dam	Identification and rehabilitation of areas for environmental conservation	EZKNW	R 100 000 000					
OSP 3	Roll out rehabilitation programmes for degraded areas and for removal of aliens	Roll out rehabilitation programmes for degraded areas and for removal for aliens	Msunduzi Municipality and Dept of Public Works	R 100 000 000					
OSP 4	Elandskop environmental rehabilitation	Environmental rehabilitation in Elandskop area. 2017 - 2022 IDP		R 1 522 065					
OSP 5	Implement management plan for 'green job' generation	Implement management plan for 'green job' generation in the form of establishing: trails, protecting natural forests, landscapes, cultural heritage sites and natural features.	Dept of Environmental Affairs	R 85 000 000					
OSP 6	Introduce Education for Sustainable Development in all schools	Working with WESSA, introduce Education for Sustainable Development in all schools and in all grades in Vulindlela and Ward 39	Msunduzi Municipality: Environmental component	R 10 000 000					
LED Projects		LOCAL ECONOMIC DEVELOPMENT							
LED 1	National Key Performance Indicator 3: Youth development and training	Five year programme to facilitate and create Youth owned enterprises	Msunduzi Municipality	R 5 000 000	LED 18 (Strat 1)	Youth Development and training			
LED 2	National Key Performance Indicator 3: Satellite market upgrade	Facilitate the upgrade of the Kwa Mncane satellite markets	Msunduzi Municipality	R 800 000 Budget	LED 23 (Strat 3)	Upgrade Kwa Mncane satellite market			
LED 3	National Key Performance Indicator 3: Business retention and expansion programme	Assist distressed companies	Msunduzi Municipality	R 4 000 000	LED 20 (Strat 5)	Assist various companies			
LED 4	National Key Performance Indicator 3: Tourism development support	Tourism development marketing	Msunduzi Municipality	R 1 000 000	LED 20 (Strat 6)	Tourism marketing			
LED 5	National Key Performance Indicator 3: Training workshops for SMME's and Co-ops	Training for SMME's and Co-ops	Msunduzi Municipality	R 500 000	LED 11 (Strat 7)	Tourism marketing			

Figure 42. Ward 39 and Vulindlela Project implementation plan: Infrastructure

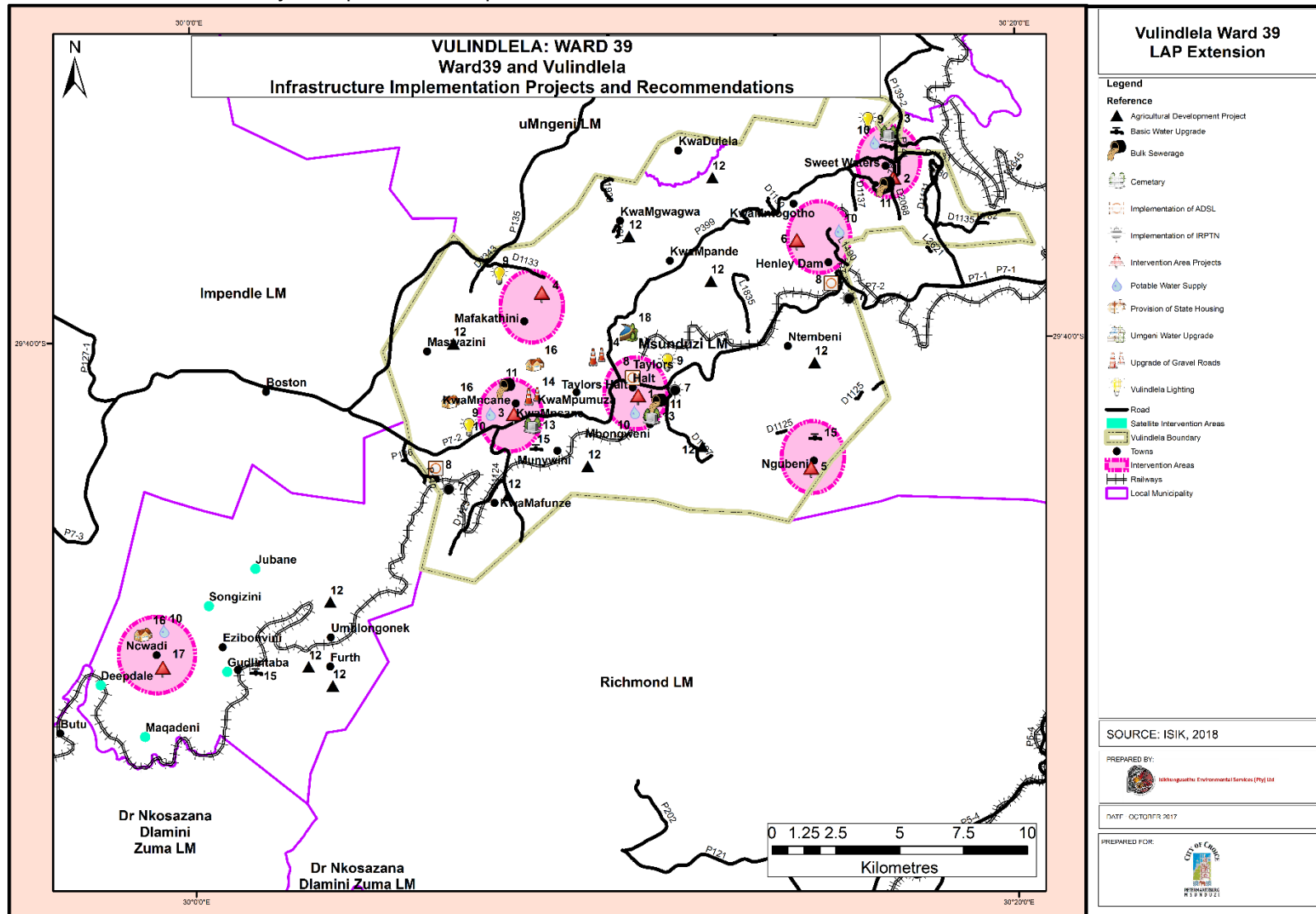


Table 40: Infrastructure Project List

ID	Project Reference	Description
1	PIP 1	Intervention Area Projects
2	PIP 2	Intervention Area Projects
3	PIP 3	Intervention Area Projects
4	PIP 4	Intervention Area Projects
5	PIP 5	Intervention Area Projects
6	PIP 6	Intervention Area Projects
7	BIP 1	Implementation of IRPTN
7	BIP 1	Implementation of IRPTN
7	BIP 1	Implementation of IRPTN
8	BIP 3	Implementation of ADSL
8	BIP 3	Implementation of ADSL
8	BIP 3	Implementation of ADSL
9	BIP 4	Vulindlela Lighting
9	BIP 4	Vulindlela Lighting
9	BIP 4	Vulindlela Lighting
9	BIP 4	Vulindlela Lighting
10	BIP 7	Potable Water Supply
10	BIP 6	Potable Water Supply
10	BIP 6	Potable Water Supply
10	BIP 6	Potable Water Supply
10	BIP 6	Potable Water Supply
11	BIP 10	Bulk Sewerage
11	BIP 10	Bulk Sewerage
11	BIP 10	Bulk Sewerage
12	ADP 1	Agricultural Development Project
12	ADP 1	Agricultural Development Project
12	ADP 1	Agricultural Development Project
12	ADP 1	Agricultural Development Project
12	ADP 1	Agricultural Development Project
12	ADP 1	Agricultural Development Project
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12	ADP 1	Agricultural Development Project
12	ADP 1	Agricultural Development Project
12	ADP 1	Agricultural Development Project
13	BIP 12	Cemetary
13	BIP 12	Cemetary
13	BIP 11	Cemetary
14	BIP 2	Upgrade of Gravel Roads
14	BIP 2	Upgrade of Gravel Roads
15	BIP 8	Basic Water Upgrade
15	BIP 8	Basic Water Upgrade
15	BIP 8	Basic Water Upgrade
16	BIP 13	Provision of State Housing
16	BIP 13	Provision of State Housing
16	BIP 13	Provision of State Housing
17	PIP 7	Intervention Area Projects
18	BIP 9	Umgeni Water Upgrade

Figure 43: Ward 39 and Vulindlela Project implementation plan: Non-Infrastructure

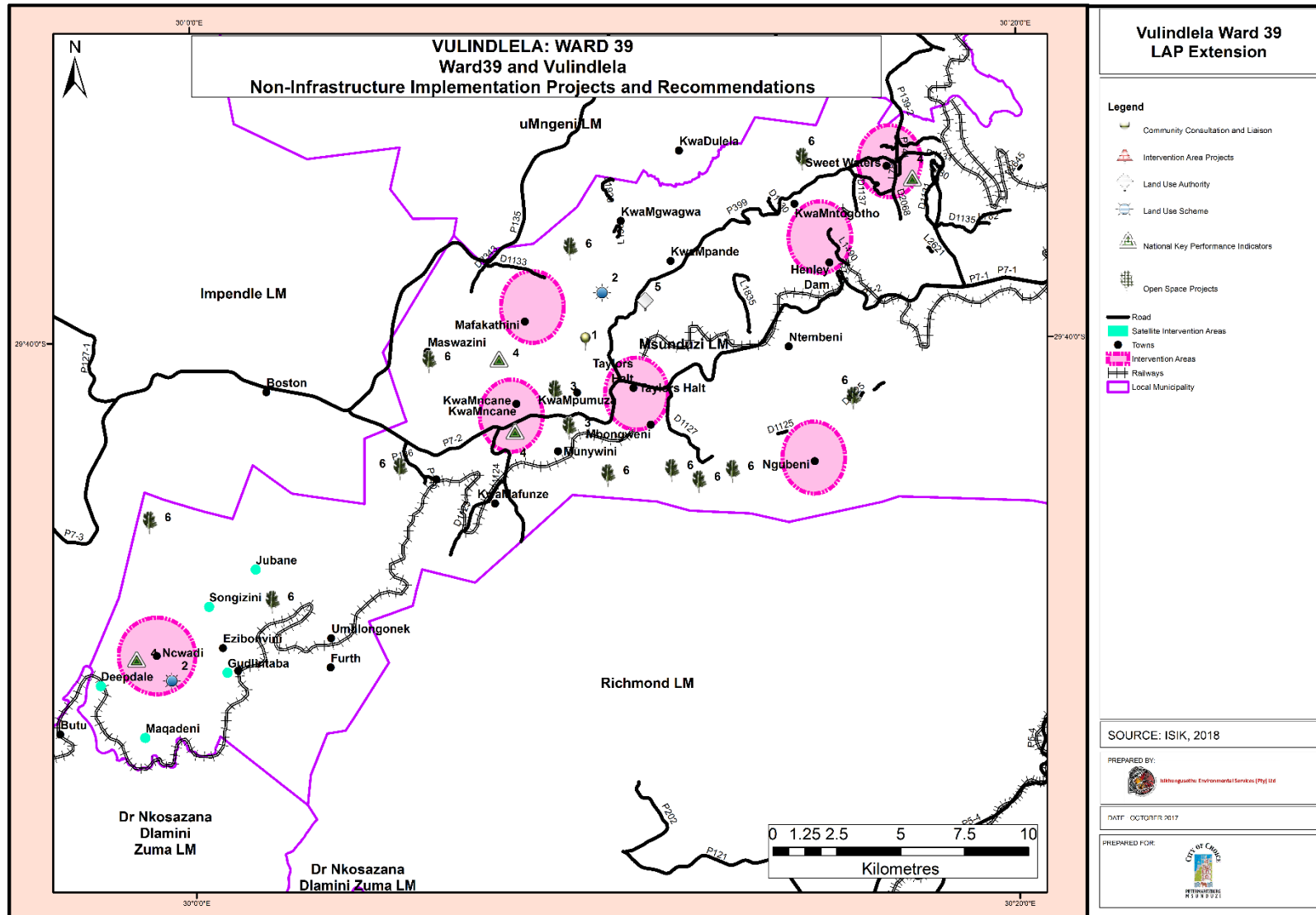


Table 41: Non-Infrastructure Project List

ID	Project Reference	Description
1	CC 1	Community Consultation and Liaison
2	LUS 1	Land use Scheme
2	LUS 1	Land Use Scheme
3	OSP 1	Open Space Projects
3	OSP 3, 5 and 6	Open Space Projects
4	LED 4	National Key Performance Indicators
4	LED2	National Key Performance Indicators
4	LED 1, 3, 4, and 5	National Key Performance Indicators
4	LED 1, 3, 4, and 5	National Key Performance Indicators
5	IA1	Land Use Authority
6	OSP 4	Open Space
6	OSP 2	Open Space
6	OSP 3, 5, 6	Open Space
6	OSP 3, 5 and 6	Open Space Projects
6	OSP 3, 5 and 6	Open Space Projects
6	OSP 3, 5 and 6	Open Space Projects
6	OSP 3, 5 and 6	Open Space Projects
6	OSP 3, 5 and 6	Open Space Projects
6	OSP 3, 5 and 6	Open Space Projects
6	OSP 3, 5 and 6	Open Space Projects
6	OSP 3, 5 and 6	Open Space Projects

10.MONITORING AND EVALUATION

10.1. Rationale for Monitoring and Evaluation

This plan, in the hierarchy of plans, provides a spatial framework, planning concepts and guidelines for the ward's development. As a pre-cursor to project implementation this LAP needs to be followed by three parallel processes:

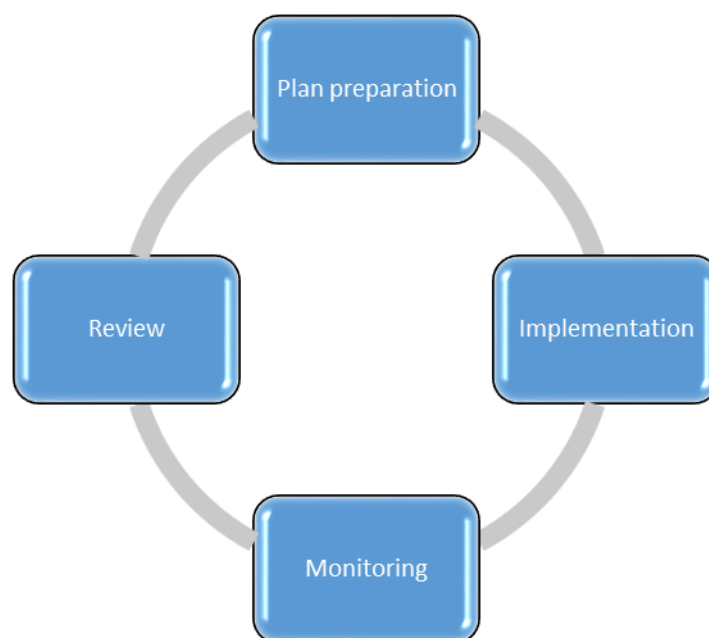
- Detailed layout and design of intervention, high density and agricultural areas to determine quantities and costs;
- Initiating the process of property survey and scheme preparation;
- Ongoing communications and facilitation among local stakeholders and interest groups to ensure their support and “buy in” to the changes inherent in this plan.

These processes need to run in parallel in order to introduce land use management at the same time as the implementation of proposed developments takes place. It is necessary, in the public interest, to institute regulation or management of development and, in the process, ensure accessibility and equity.

Owing to the logistics, costs and socio-political issues associated with the implementation of this plan, implementation is scheduled over the short-, medium- and longer-term. In order to ensure that the principles contained in this plan are followed during the implementation stages, a process of

monitoring, based on the measures and pillars previously identified in this report. Monitoring needs to be accompanied by a regular review of the implementation plan to accommodate adjustments arising from possible financial, technical, logistical and social challenges. The project monitoring and review process is diagrammatically shown below (Diagram 10).

Diagram 10. Monitoring Review Process



10.2. Plan Implementation and Monitoring

Parts of this LAP's project implementation will be allocated to different municipal line function departments. The following table the project actions to be allocated to these different departments.

Monitoring involves regular reporting to a higher authority with particular measurable and/ or tangible targets which are based on the five key measures identified in section 4 of this report and link to the seven pillars identified in the Msunduzi SDF. The implementation of identified projects is the mechanism that should be used in ascertaining progress with implementation of this plan. Therefore it is recommended that a score card be developed for the various projects based on the five measures, with annual benchmarks, for quarterly report-back to Council. The schedule below provides reference to the main outputs which must be achieved in terms of the five measures. The monitoring schedule can be further developed to include more detailed tasks to ensure accurate and effective reporting. The continual monitoring, review and updating of this scorecard could be the responsibilities of the JMU for Vulindlela located at Taylor's Halt.

However, as important as the municipal impetus and capital investment on this project is, the success or otherwise of this LAP and the implementation of the ensuing planning scheme depends also on other agencies. Their MTEF capital investments in this project need also to be recorded and monitored.

Table 42. VLAP Implementation monitoring schedule

Measures /targets	Sector	Project actions	Responsibility	Project output	Project implementation monitoring		
					Year 1	Year 2	Year 3
Creating a liveable space and structure	Planning and communications	Extend the joint development planning decision-making body's brief to include ward 39.	Planning Department	<ul style="list-style-type: none"> Joint decision-making body established. Institution operational. 	<ul style="list-style-type: none"> TOR prepared. Project initiated. 	<ul style="list-style-type: none"> Project implementation. Operational. 	<ul style="list-style-type: none"> Monitor operation.
		Community consultation and inter-municipal liaison.		<ul style="list-style-type: none"> Development of communication plan. Implementation and monitoring. 	<ul style="list-style-type: none"> Development of communication plan. Implementation and monitoring 	<ul style="list-style-type: none"> Development of communication plan. Implementation and monitoring. 	<ul style="list-style-type: none"> Development of communication plan. Implementation and monitoring.
		Preparation of plans for intervention areas, part of which is the determination of which body (municipality, land owner, Provincial Dept of Human Settlement, etc) is responsible for what).		<ul style="list-style-type: none"> Detailed implementation plans. Site preparation for resident and non-residential development. 	<ul style="list-style-type: none"> TOR prepared. Project initiated. 	<ul style="list-style-type: none"> Plan development. 	<ul style="list-style-type: none"> Plan implementation. Identified land parcels ready for implementation.
		Preparation of Agricultural development plan with particular attention being paid to mechanisms for managing the numbers of large and small animal units on the land so that its carrying capacity is not exceeded.		<ul style="list-style-type: none"> Agricultural implementation plan with identified projects. 	<ul style="list-style-type: none"> TOR prepared. Project initiated. 	<ul style="list-style-type: none"> Project completion. Project implementation. 	<ul style="list-style-type: none"> Project implementation and monitoring.
Regulating future	Land use	Preparation of a "wall to wall" land use scheme with the emphasis on	Planning Department	<ul style="list-style-type: none"> "Wall to wall" land use scheme. 	<ul style="list-style-type: none"> TOR prepared. Project initiated. 	<ul style="list-style-type: none"> Plan development. Adoption by Council. 	<ul style="list-style-type: none"> Proceed with implementation of the scheme and

Measures /targets	Sector	Project actions	Responsibility	Project output	Project implementation monitoring		
					Year 1	Year 2	Year 3
		implementation being the intervention areas.					application of land use regulation. ▪ Monitor scheme infringements/ deviations, take appropriate correcting actions, and report, on quarterly basis, possibly with remedial recommendations, to Council at least at six month intervals.
		Creation of awareness	Planning Department	▪ Communications with traditional structures, municipal officials and community groups.	▪ Preparation of job description. ▪ Preparation of materials for communication. ▪ Appointment of communications officers.	▪ Ongoing communications. ▪ Monitor impact of communications on achieving support and buy in for the LAP and associated projects, and report to Council quarterly.	
Achieving improved accessibility for	Infrastructure	IRPTN implementation.	Transport Department and Provincial DOT	▪ Functioning IRPTN.	▪ Project implementation as per City Development Strategy.	▪ Project implementation as per CDS.	▪ Project implementation as per CDS.
		Engage with Transnet to examine (a) feasibility of re-establishment of passenger	Transport Department and TRANSNET	▪ Functioning rail service	▪ Project implementation	▪ Project implementation	▪ Project implementation

Measures /targets	Sector	Project actions	Responsibility	Project output	Project implementation monitoring		
					Year 1	Year 2	Year 3
		network; (b) whether a goods service for agric produce (including cattle) might be re-introduced; and (c) in the likely event of these being uneconomic, what subsidy arrangements might be made.					
		ADSL communication network (broadband).	Municipal Manager's Office and Telkom	<ul style="list-style-type: none"> Operational ADSL network. 	<ul style="list-style-type: none"> TOR prepared. Project planning and approvals. 	<ul style="list-style-type: none"> Project implementation phase 1. 	<ul style="list-style-type: none"> Project implementation phase 2.
		Electricity supply.	Electricity Department ESKOM	<ul style="list-style-type: none"> Electrification of all intervention areas. 	<ul style="list-style-type: none"> TOR prepared. Project initiated. 	<ul style="list-style-type: none"> Plan development. Adoption by Council. 	<ul style="list-style-type: none"> Project implementation phase 1.
		Bulk water supply.	Water and Sanitation Department	<ul style="list-style-type: none"> Bulk water and reticulation in place. 	<ul style="list-style-type: none"> Water master plan in place. 	<ul style="list-style-type: none"> Implementation and roll-out of plan. 	<ul style="list-style-type: none"> Implementation and roll-out of plan.
		Waterborne sewerage design and implementation for high density residential areas.	Umgeni Water	<ul style="list-style-type: none"> Waterborne sewerage in place at high density nodes. 	<ul style="list-style-type: none"> Sewerage master plan in place. 	<ul style="list-style-type: none"> Implementation and roll-out of plan. 	<ul style="list-style-type: none"> Implementation and roll-out of plan.
		Solid waste collection, sorting and removal planning.	Works Department	<ul style="list-style-type: none"> Solid waste removal plan in place. Solid waste site identified. New solid waste site operational. 	<ul style="list-style-type: none"> Solid waste removal plan development. Site identification. 	<ul style="list-style-type: none"> Site authorisation. 	<ul style="list-style-type: none"> Site preparation. Site operationalisation.

Measures /targets	Sector	Project actions	Responsibility	Project output	Project implementation monitoring		
					Year 1	Year 2	Year 3
		Cost the construction of the sporting facility proposed northwest of Elandskop and determine the allocation of responsibility (municipal/landowner) for the funding/ construction thereof.		<ul style="list-style-type: none"> Project plan for construction 	<ul style="list-style-type: none"> Project implementation 	<ul style="list-style-type: none"> Project implementation 	<ul style="list-style-type: none"> Project implementation
		Establishment of cemetery and policy implementation.	Parks and Recreation Department in liaison with Umgungundlovu District	<ul style="list-style-type: none"> Cemetery plan. Site identification. Site preparation. Implementation. Burial policy development and communication. Exhumation from “domestic” grave sites, and re-interment in cemetery, investigation as to feasibility and costing 	<ul style="list-style-type: none"> TOR prepared. Cemetery plan preparation and site identification. Burial policy preparation. 	<ul style="list-style-type: none"> Applications for authority including EIA. Burial policy communication. 	<ul style="list-style-type: none"> Implementation of plan. Cemetery operationalised.
Enhancing a sense of place	Ecological Infrastructure	Preparation of an open space management and rehabilitation plan which includes urban areas.	Environmental Directorate and Department of Environment Affairs and Ezemvelo KZN Wildlife	<ul style="list-style-type: none"> Open space management and rehabilitation plan to integrate ward 39 proposals with those adopted for Vulindlela. 	<ul style="list-style-type: none"> TOR prepared. Project initiated. 	<ul style="list-style-type: none"> Open space plan prepared. Plan approved by all IAPs and adopted by Council. 	
		Assess features and quality of viewsheds and natural areas (including wetlands) and develop land use/		<ul style="list-style-type: none"> Implementation of rehabilitation plan. 	<ul style="list-style-type: none"> TOR prepared. Project initiated. 	<ul style="list-style-type: none"> Implementation of programme. Programme monitoring. 	<ul style="list-style-type: none"> Programme monitoring.

Measures /targets	Sector	Project actions	Responsibility	Project output	Project implementation monitoring		
					Year 1	Year 2	Year 3
		vegetation retention and rehabilitation plans					
		Examine, in concert with DWAF and DEDTEA, opportunities for tourism-related activities at the Smithfield Dam and the role which Ncwadi may play in supporting, and building on, those opportunities		<ul style="list-style-type: none"> Tourism promotion plan 	<ul style="list-style-type: none"> TOR prepared. Project initiated. 	<ul style="list-style-type: none"> Implementation of programme. Programme monitoring. 	<ul style="list-style-type: none"> Programme monitoring.
		Investigate opportunities ⁶⁶ for nature-based recreation activities, and related accommodation, within the ward, including those which could link with the Impendle Nature Reserve		<ul style="list-style-type: none"> Nature-based recreation plan 	<ul style="list-style-type: none"> TOR prepared. Project initiated. 	<ul style="list-style-type: none"> Implementation of programme. Programme monitoring. 	<ul style="list-style-type: none"> Programme monitoring.
		Green job implementation plan.		<ul style="list-style-type: none"> Green job implementation. 	<ul style="list-style-type: none"> Funding sought and secured. Implementation and management of programme. 	<ul style="list-style-type: none"> Implementation and management of programme. 	<ul style="list-style-type: none"> Implementation and management of programme.

⁶⁶ This exercise must address the “cost” to potential revenue-generating recreation activities such as the continuation of the illegal hunting of game

Measures /targets	Sector	Project actions	Responsibility	Project output	Project implementation monitoring		
					Year 1	Year 2	Year 3
		Environmental education programme.		<ul style="list-style-type: none"> Environmental educational programme. 	<ul style="list-style-type: none"> Funding sought and secured. Implementation and management of programme. 	<ul style="list-style-type: none"> Implementation and management of programme. 	<ul style="list-style-type: none"> Implementation and management of programme.
Improving livelihoods	Local economic development	Five year programme to facilitate and create youth owned enterprises.	LED Directorate DEDTEA	<ul style="list-style-type: none"> Operational youth owned enterprises. 	<ul style="list-style-type: none"> Development of programme. Implementation of programme. 	<ul style="list-style-type: none"> Implementation of programme. 	<ul style="list-style-type: none"> Implementation of programme.
		Facilitate the upgrade of the KwaMncane-Elandskop satellite markets.		<ul style="list-style-type: none"> Upgrade KwaMncane satellite markets. 	<ul style="list-style-type: none"> Upgrade KwaMncane satellite markets. 		
		Assist distressed companies.		<ul style="list-style-type: none"> Identification of companies requiring assistance. Assistance to companies. 	<ul style="list-style-type: none"> Identification and assistance of distressed companies. 	<ul style="list-style-type: none"> Identification and assistance of distressed companies. 	<ul style="list-style-type: none"> Identification and assistance of distressed companies.
		Investigate feasibility of the restoration of the cattle sale yard at Elandskop.		<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		Tourism development marketing.		<ul style="list-style-type: none"> Support tourism. 	<ul style="list-style-type: none"> Marketing of tourism. 	<ul style="list-style-type: none"> Marketing of tourism. 	<ul style="list-style-type: none"> Marketing of tourism.
		Training SMMEs and co-operatives.		<ul style="list-style-type: none"> Local economic development workshops. 	<ul style="list-style-type: none"> Training on SMMEs and co-operatives. 		

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12.ANNEXURE 1: ALIGNMENT OF HIERARCHY OF CENTRES

CENTRE TYPOLOGY ALIGNMENT						
Centre	PGDS level (2016)	LM level (SDFs 2016)	DRDLR Typology (2015)	Ward 39 level	Levels of services (see worksheet for detail)	2001-2011 Growth
Pietermaritzburg	Secondary node (PGDS)	Regional centre	City	Metropolitan area	Regional centre	5.4%
Howick	Tertiary level node (PGDS)	Primary node (Umngeni)	Medium Town	First order	First order	0.0%
Ixopo	Tertiary level node (PGDS)	Primary node (Ubhulebezwe)	Small Town	First order	First order	2.86%
Underberg-Himeville	Quarternary node (PGDS)	Primary node (DMDZ)	Village	First order	First order (excl hospital)	36.96%
Mooi River	Quarternary level node (PGDS)	Primary node (Mpofana SDF)	Small Town	First order	First order excludes hospital	3.35
Taylors Halt					First order	
Richmond	Quarternary node (PGDS)	Primary node (Richmond SDF)	Small Town	First order	First order (excl hospital)	0.0%
Bulwer		Primary node (DMDZ)	Village	Second order	Second order	5.88%
Creighton	Quarternary node (PGDS)	Secondary node (DMDZ)	Hamlet	Secondary order	Secondary order (excl hospital)	7.69%
Impendle	Quarternary node (PGDS)	Primary node (Impendle)	Hamlet	Second order	Second order	1.79%
Ncwadi		Rural Service Centre (DMDZ)	Traditional free standing node	Third order (second order possible)	Third order	
Hlanganani		Rural service centre (DMDZ)	Rudimentary service	Third order centre	Third order - includes CHC, secondary school etc	

Centocow		Secondary node (DMDZ)	Rudimentary service	Third order centre	Third order - includes hospital, secondary school etc	
Boston	Quarternary node (PGDS)	Secondary node (Impendle) - agricultural service node	Village	Fourth order centre	Fourth order centre	0.0%
Byrne		Rural service node (Richmond)	Hamlet	Fourth order centre	Fourth order rural centre	
Source: PGDS, SDFs, DRDLR						

13.ANNEXURE 2: TYPES AND LEVELS OF SERVICES

		Tertiary kit	Secondary Kit	Primary kit	Single facility
Categories of facilities	Regional Centre	1st Order Centre	2nd Order centre	3rd Order Centre	Rural Settlement
Population catchment	>16000 households <1000000 people	8000-16000 households 500000-1000000 people	4000-8000 households 100000-500000 large towns 50000-100000 medium towns 15000-50000 small towns	2000-4000 households 5000-15000 people	0-2000 households 1000-5000 people
EDUCATION					
Post school					
FET, Sub-campus	1	0	0	0	0
Schools					
Resources centres	8	4	2	0	0
Secondary schools	8	4	2	0	0
Primary schools	16	8	4	2	1
Creche	On demand	On demand	On demand	On demand	On demand
HEALTH					
Regional referral hospital	1	1	0	0	0
Community Health Centres	1	1	0	0	0
Clinics	4	2	1	0	0
Mobile Clinics	16	8	4	2	1
SAFETY AND SECURITY					
Magistrates Court	Local Municipality				
Police Station	1	0	0	0	0
Satellite Police Station	4	2	1	0	0
Fire Station	Local Municipality				
Emergency Facility	On demand				
WELFARE					
Social welfare office	Local Municipality				
Fixed pension payout point	4	2	1	0	0
Moble pension payout point	16	8	4	2	1

Aged care centres	4	2	1	0	0
Children's homes	4	2	1	0	0
SOCIAL FACILITIES					
Civic centre	4	2	1	0	0
Meeting space	16	8	4	2	1
Library	4	2	1	0	0
Mobile libraries	16	8	4	2	1
RECREATION					
Sporting complex	1	0	0	0	0
Multi-purpose sports facility	4	2	1	0	0
Sports field (linked to school)	16	8	4	2	1
ADMINISTRATION					
Regional government offices	1				
Thusong centre	4	2	1	0	0
Municipal offices	Local Municipality				
Satellite municipal office	4	2	1	0	0
Traditional court	On demand				
Post office	4	2	1	0	0
Home Affairs (fixed)	On demand				
Home Affairs (mobile)	On demand				
SOCIAL INFRASTRUCTURE					
Local cemetery	4	2	1	0	0
ECONOMIC INFRASTRUCTURE					
Central business district	4	2	1	0	0
Financial institution	2	1	0	0	0
ATM	4	2	1	0	0
Informal market	4	2	1	0	0
Taxi rank	4	2	1	0	0
Periodic market	16	8	4	2	1
HOUSING DENSIFICATION					
Upmarket housing	Y	Y	Y	Y	
Middle income housing	Y	Y	Y	Y	
Low cost housing	Y	Y	Y	Y	Y
Rental accommodation	Y	Y			
Gap housing	Y	Y			
In situ upgrade	Y	Y	Y	Y	Y

14.ANNEXURE 3: URBAN EDGES

14.1. Introduction

The main purpose of this report is to establish the key principles which need to be considered when developing policies and programmes aimed at stopping further urban sprawl in Vulindlela.

Dewar (2012) notes that the phenomenon of urban sprawl has evolved in the South African landscape out of the application of different ideologies associated with urban development and growth. The inability of planners and policy makers to properly align the succeeding generations of different ideologies has led to fragmentation, separation and inefficiency in urban forms all of which have, in turn, promoted urban sprawl. A further factor influencing the urban malady in South Africa is the fact that municipalities have lost the ability to plan to accommodate future urban growth. One of the consequences is that land speculators, land invaders and land owners use this space to, in effect, determine the direction of urban growth whilst municipalities sanction them by turning a blind eye to such activities and/ or “rubber stamping” such developments after the event. Ironically, the poorest of the poor experience the greatest hardship as a consequence of current policies which were, in fact, designed to address these challenges.

In other words, experience suggests that authorities implementing current approaches to urban edge definition and regulation are not succeeding in their endeavours. This raises questions around the efficacy of such policies and whether they are adequately dealing with all the factors associated with edge definition and management. Dewar (2012) notes that South Africa is not alone in the challenges associated with edge definition, but he goes on to note that the problem here is one of the worst in the world due to historical influences and our inability to recognise the factors that have contributed, and continue to contribute, to this phenomenon. The key factors in seeking to manage sprawl in future include: changing local values and perceptions around issues of sustainability; urban restructuring to accommodate infill and densification; enhancing and improving different forms of public transportation aimed at reaching the poorest of the poor; reduction in travel distances and costs and defining a “no go” dispensation for the development of agricultural land and sensitive environmental areas.

14.2. Background

The rural nature and extent of the project area plays an important role in attempting to explain the scale and extent of urban sprawl or displaced residential development that has taken place within at least parts of the ward over the last 100 years.

The most densely-settled land (11% of the area, 54% of the population) is owned by the Ingonyama Trust, the least settled area (61% of the area, 14% of the population) is owned by the S.A. Development Trust and is the subject of land claims which have not yet been approved/ refused, and the relatively lightly-settled area (27% of the area, 32% of the population) in the southwest is in the ownership of the Qadi Traditional Authority. The result is that, whereas the land use consideration/ approval etc is the responsibility of the municipality (now Msunduzi municipality) the allocation of land to different occupants is done, without reference to municipal planning approaches, policies or documents, by *Nkosis* within Traditional Councils. The onus is on the municipality, working closely with the ITB and

traditional houses, to ensure that land use is in accordance with the hierarchy of spatial plans prepared by the municipality in terms of the Spatial Planning Land Use Management Act (SPLUMA) and its adopted bylaws.

It is recognised that the northeastern ex-Vulindlela area was historically located under the KwaZulu-Government and subject to different legislation ⁶⁷. Against this background there is now province-wide development planning legislation to be implemented by local municipalities to achieve the five objectives of the Spatial Planning and Land Use Management Act namely:

- Spatial Justice
- Spatial Sustainability
- Efficiency
- Spatial resilience
- Good administration

The origins of settlement relate to the colonial and subsequent apartheid policies embedded in the history of the people and the settlement of the area. Owing to these policies black people were generally unable to reside in Pietermaritzburg and had to find alternative accommodation to take advantage of the economic opportunities in order to generate income to pay for hut taxes imposed on them by the colonial government. In addition, the area was subjected to different approaches to planning since the late 1800s by the different administrations. This has had an impact on the type and nature of development that has taken place over the years. For example under colonial and apartheid regimes the area was set aside for separate development resulting in minimal investment in infrastructure, economic development and land use. The result was that land allocation for people moving into the area followed the traditional norms as set out by traditional houses at that time which, due to population pressures, has led to urban sprawl, inefficiencies in services provision and the concomitant loss of biodiversity and agricultural resources.

Post 1994, Vulindlela was administered in isolation of the other three components of what now comprises the Msunduzi municipal area. In order to better integrate the different components within the municipal area, the Pietermaritzburg Transitional Local Council was established in 1993 (LGTA (Act 209 of 1993)). This was followed in 2000 by the establishment of the Msunduzi Municipality (MSA 2000) where Vulindlela and other areas to the southeast of the city were brought into the fold. This inclusion process allied to national government plans and policies (e.g. NDP, Urban Networks Strategy, Neighbourhood Development Partnership Grant) has allowed this municipality to adopt a more holistic approach to integrated planning which is inclusive of the following: (i) the desired patterns of land use which are inclusive of finding ways of limiting further costly and un-sustainable urban sprawl; (ii) the most appropriate capital investment framework for the area addressing the previously overlooked areas; (iii) providing a strategic framework to assist the municipality to unlock development in the area and to guide decision-making on land development applications; (iv)

⁶⁷ KwaZulu Land Act, Act 11 of 1992, then the (ex-Natal) Town Planning Ordinance, followed by the Kzn Planning and Development Act.

opportunities and constraints inherent in the natural resources; and (v) the nature and location of different types of development.

14.3. Working Definitions

The Provincial Urban Edge Guideline (DEADP 2005) defines an urban edge as being “...a demarcated line to manage, direct and control the outer limits of development around an urban area”. It goes on to note that the intention of the edge is to “...establish the limits beyond which urban development...should not occur...”. The edge is the transition between urban and rural areas: places where full services are/ will be provided and high density land use is appropriate as opposed to agricultural use of land where minimal services are provided and low density development relating to agriculture is appropriate. It is further indicated in the guideline that the use of edges to direct future urban growth and development can also have negative consequences associated with manipulation of the land market. In order to be effective, edges need to be adopted by municipalities as a mechanism to both control, and at the same time promote compact and efficient development of, urban areas. An important observation about the nature of edge definition is that it is condition-sensitive and hence the rules associated with one urban area will not necessarily fully apply to another area where differing local conditions apply (DEADP 2005).

Smit (2003), in his work on Paarl, notes that the unplanned, uncontrolled spreading of urban development into areas adjoining the edge of a town is known as “urban sprawl” or “suburban sprawl”. The term “urban containment” has been coined to limit urban sprawl in areas where encroachment of the built environment on to more rural land is not appropriate (Smit).

Dewar (2009) notes a number of different types of urban sprawl which have to be identified and contended with by municipalities. These include but are not limited to:

- Large private projects such as golfing and ecological estates (known as “eco-estates”) which result in urban development in rural and wilderness areas.
- Small-scale incremental sprawl where one development leads to another in rural areas thereby expanding the urban footprint.
- Large authority-driven developments to accommodate low cost housing often located in rural areas.
- Informal settlement expansion into rural traditional areas.

Dewar (2009) suggests that the most effective approach to adopt in attempting to deal with the different types of urban sprawl involves increasing densities and infill in defined urban areas on the one hand, while at the same time needing to “...maintain a dynamic balance between the 3 fundamental landscapes namely: wilderness, rural and urban”. He goes on to indicate that the two approaches give rise to two types of spatial definitions. In the case of the urban, there is a need for a defined containment edge as the limit of the urban core. In contrast, the focus in rural areas is to identify what types of development should and should not take place beyond the containment boundary. The approach in rural areas goes further in that provision should be made for 3 broad zones involving peri-urban, rural and wilderness and the interventions necessary to maintain those balances.

14.4. Three Drivers

Smit (2003) and Dewar (2012) note that in South African cities urban growth (the driver of sprawl) takes four forms which include:

- (i) Market-driven sprawl: space extensive, consuming large areas of farmland and environmentally sensitive areas on the urban periphery;
- (ii) State subsidised low-income housing sprawl;
- (iii) Illegal land occupation; and
- (iv) Industrial/commercial development in rural areas.

Further factors influencing the nature and location of sprawl in KwaZulu-Natal include: the history of development of an area, economic inequality, land ownership, security of tenure, accessibility to services, access to areas of economic intensity, levels of education and skills, and personal safety. These factors have in the past driven, and continue to drive, the urbanisation process. Thus, where people with a low skills base and limited market information move from traditional rural areas, seeking to gain a foothold in urban areas, access to traditional areas in close proximity to these centres provides a cost effective point of entry. Full integration into urban areas may take place over many years and even on an inter-generational basis. Thus a migrant into Vulindlela from a rural area is likely, once established with employment, to gain access to traditional land for residential purposes. Members of his/her family are then likely to follow and use this as their base for entry into the urban area.

Similar processes accompany the movement of people of a low income and skills base from one urban centre to the next where entry poses a major challenge in terms of cost of living and gaining access to market information for employment or trading operations. Traditional areas in close proximity to regional economic hubs have provided, and continue to provide, a point of entry and a place to ensure relative security of tenure at low cost for people wanting to gain a foothold in the formal economy.

14.5. Perspectives on Interventions

Urban growth and sprawl have become a universal phenomenon but, as noted, have different drivers depending on location, context and local conditions. Consequently interventions have to be appropriate in terms of local context if they are to be effective. Thus, for example in Great Britain, green belts are installed to make a clear statement on the limits to further urban expansion and there is popular support for the notion of green belts serving a variety of other functions (social, recreational, sport, environment). The multiple value of green belts is recognised and supported by municipalities and hence the concept has proven effective in the control of urban sprawl. In KwaZulu-Natal the notion of green belts to manage urban sprawl is unlikely to succeed owing to a variety of factors such as weak municipal management, land invasions, crime, financial status of municipalities etc.

Mexico City, when faced with rapid informal urban development in the late 1980s, responded with the promulgation of regulations for rural areas adjoining the city paralleled with a programme of inner city infill and densification as a means of managing urban sprawl. This type of intervention would

seem more appropriate for local conditions with one major exception, the regulation of land use in traditional areas. This requires a different type of intervention that needs further research and development.

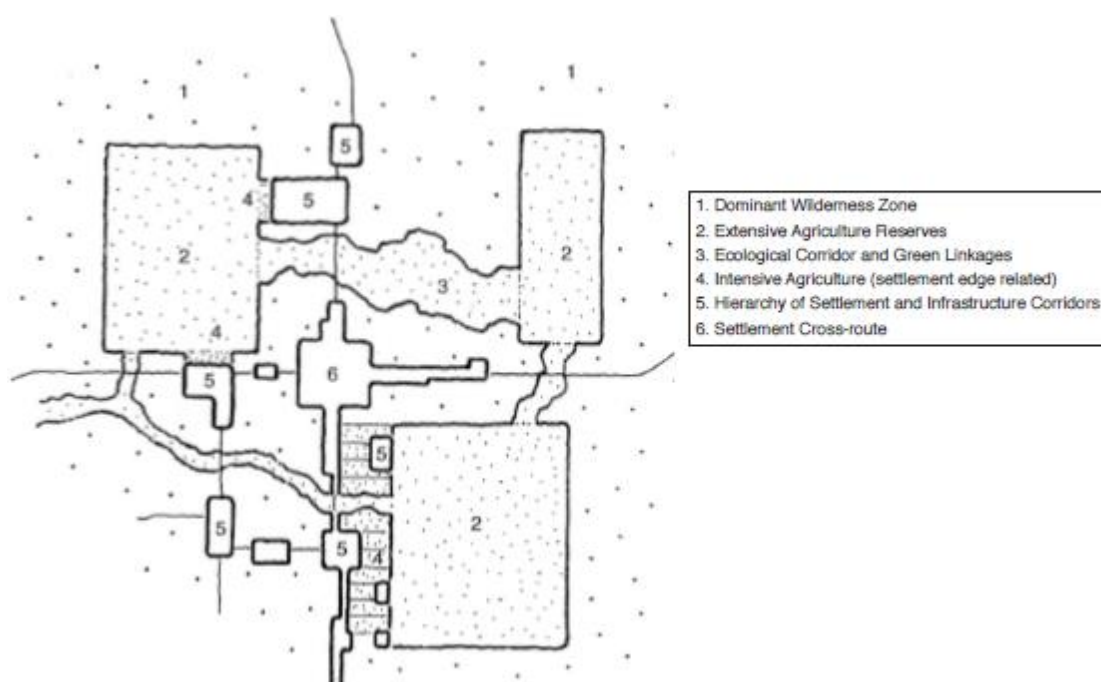
In the Western Cape (Drakenstein) there is increasingly a recognition that effective definition and implementation of an urban edge requires a number of interventions which include:

- Formulation of a set of guidelines for land use in rural areas adjoining urban precincts with clear justification i.e. it must be relevant to local conditions.
- As a matter of principle, exclude all farm land and areas with biodiversity importance from any form of urban speculation. In parts of the USA it has been possible to regulate a differential in the land market: farm land values *versus* urban values in order to prevent speculation on the interface of urban and rural areas.
- Infill and densification should be promoted as an evolving norm in society where positive values and incentives are associated with living in higher density urban areas and progressively urban sprawl is associated with a number of negative issues (e.g. Loss of character of towns, inefficiencies-costs, security issues, services issues, loss of food production potential and loss of ecological services).

In KwaZulu-Natal, the Western Cape experience has application in areas such as the Midlands under private ownership where farmland and areas rich in biodiversity are being fragmented through a variety of developments which should, in reality, be confined to defined urban areas. However, the Western Cape experience has very limited application to traditional areas where different tenure and historical conditions apply.

In order to overcome the current challenges associated with urban sprawl, Dewar (2012) notes that the balance between wilderness, rural and urban landscapes has been upset by un-managed and un-controlled urbanisation. He notes that there is a need to introduce a change into the current culture prevalent amongst developers and policy-makers regarding wilderness and rural areas being “open” for development. In seeking to identify an edges policy, municipalities need to define where development should **not** be allowed to take place in their wilderness and rural areas. These are the resources which should be set aside as food baskets and sources of natural resources for current and future generations. Once this has been achieved, then the definition of limits to urbanisation should be hard, permanent and tightly regulated. Policy makers, in defining areas suited to future development, should adopt a conservative approach aimed at maintaining as much land under wilderness and rural as is feasible. This should be achieved by seeking opportunities within existing defined urban areas to integrate, infill and densify all forms of future urban development and, in the process, divert the pressure for more land away from rural and wilderness areas. The concept of maintaining dominant wilderness areas around urban centres with extensive and intensive agriculture in rural areas adjoining and forming a part of urban areas and edges is depicted in Figure 44 below. The figure further highlights the notion of different types and densities of development within the urban form to enhance the aesthetic appeal of urban space.

Figure 44. Relationships among landscapes



Source: Dewar et al (2012).

Key considerations in arresting sprawl relate to:

- Restrictions on lateral expansion of settlement.
- Defining paths for expansion which will have least impact on wilderness and rural.
- Overcoming land speculation in surrounding rural areas by outlawing further development in defined areas and incentivising infill and densification in existing urban precincts.
- Managing edges such that human waste processing sites form an integral part of the containment of urban growth: expansion of urban areas should not proceed beyond waste processing sites due to nuisance and health related issues.
- A further key consideration in the management and containment of urban expansion is the question of hazards. Floods, fire and the spread of disease can be better predicted and managed in defined urban areas. This is not the case in extensive and often un-planned peri-urban areas where fires and disease can spread rapidly and often out of control.

In order to introduce and manage urbanisation pressures, the following approach to land use should be applied:

- Defining the high density urban core areas with a containment line beyond which such forms of development are not permitted.
- Identifying peri-urban areas adjacent to the urban core where there is a mix of intensive agricultural production and low density urban development. This balance needs to be maintained through regulation and popular support and the limits to this development could include open space, waste disposal sites and natural barriers.

- The third broad land use surrounding the essentially urban core is the extensive agricultural area where very limited forms of development could be considered but only those related to agricultural production (not processing) and low intensity ecological tourism. As noted, these areas are not open for any form of residential development such as retirement villages, golfing estates, land reform projects and low cost housing developments.
- The final broad land use category necessary to achieve effective containment of urban sprawl is wilderness which, as noted, is defined as no-go for any form of permanent development.

Smit (2003) summarises the determinants used by officials in Paarl in the Western Cape for demarcating edges around urban areas and these include:

- Agricultural land suited to extensive production in its different forms (arable, plantation, grazing resources) was set aside from urban areas.
- Actively farmed small holdings were also excluded from urban areas.
- Open space and natural areas were also excluded from urban areas inclusive of those linked with provincial and national natural systems and corridors.
- Rivers and flood plains were, wherever possible, excluded from urban areas due to the risks associated with flooding and migration of river beds.
- Topography, slope and stability of soils where areas that are not suited to development of the built environment were excluded.
- Valuable landscapes and heritage resources were also identified and where possible excluded to ensure that such features are sustained for all time and public good.
- Planning to accommodate current and future growth was included into urban areas.
- Similarly the identification and development of vacant land in defined urban areas was included into the edges.

Smit goes on to outline the method that was followed in gaining access to vacant land in urban areas which could be used for infill and development. This poses a challenge due to determining ownership, land speculation, existing zoning and resistance from surrounding owners to change in land use and character of the area.

The Provincial Urban Edge Guideline (DEADP 2005) differentiates between hard and soft edges in urban edge definition. Hard edges follow cadastral boundaries, transportation routes, waste disposal sites etc. This creates an immediate discontinuity between rural and urban land uses. In contrast a soft edge allows for a more gradual transition from one land use to another involving the transition from high density urban through low density small holdings to rural land use. The hard and soft edge approaches provide yet a further dimension to urban edge definition and intervention in order to contain further sprawl from intrusion into the rural hinterland.

14.6. Issues and Possible Strategies

In the Ward 39-Vulindlela context within this municipal area, the central issues to be considered relate to the question of how settlement development in traditional areas in close proximity to a dynamic

regional economic growth point can be formalised and regulated in order to safeguard against the following major threats to the future of the emerging metropolitan areas:

- Excessive costs associated with providing services to large populations located in relatively inaccessible locations.
- High services costs result in the city becoming increasingly un-competitive as an investment destination for business.
- Health risks associated with poor sanitation and waste disposal place all residents at risk.
- Security and crime have become a feature of the emerging metro due to large populations without access to employment and services.
- Based on conventional planning and development processes, a land owner who intends to permit persons to reside on, or develop, land held by that land owner, is responsible for meeting the development direct costs associated with that occupation/ development, and which would then be wholly or largely recouped, by the land owner, from those who would occupy/ use the land on which the residential/ industrial/ commercial buildings are constructed. Thereafter the municipality, subject to indigent policies, collects rates and taxes as well as service fees in order to sustain the services and infrastructure provided. Given that huge areas are being formalized/ expected to be formalized, the municipality should develop an explicit policy ⁶⁸ on how it intends to have who/ which authority/ies meet these direct costs, that is to say, how it will apply conventional planning and development processes to traditional areas. Amongst these largely cost-related responsibilities are: the provision of active and passive public open space ⁶⁹, the development/ servicing infrastructure ⁷⁰ costs ⁷¹ for such as electricity- and water-reticulation, the construction of internal roads to serve these developing areas prior to the hand-over of such services/ roads to municipal ownership and subsequent municipal maintenance. The maintenance and provision of services, as also mentioned in respect of the VLAP, are not sustainable based on current municipal service collection costs.

Based on a review of the above material it would appear that following strategy would need to be considered in dealing with urbanisation pressures in this ward:

- Defining criteria which can be used to differentiate urban core areas from surrounding areas.
- Extensive consultation with ward and traditional structures aimed at seeking consensus on the areas which comprise high density urban as opposed to peri-urban, rural and wilderness areas.
- Working with local structures and municipal officials in attempting to define:
 - The containment edge following the hard boundary principle and incorporating features such as ridges, rivers, waste treatment works, hazards and the co-ordination of line and point bulk services provision etc.;
 - The changes in urban structure and land use management principles that will be necessary to accommodate the edge in terms of the intensification that this implies.

⁶⁸ Perhaps phased in over a stated period

⁶⁹ To be so designated on the Surveyor-General's plans

⁷⁰ To municipality-set standards

⁷¹ Or the undertaking of such works

- The soft edges in what comprises wilderness, rural and peri-urban with particular reference to the conditions necessary to achieve the sustainable and balanced management of these areas.
- The land owner or the municipality would need to assume responsibility for the preparation of a general plan and the upgrade of such areas to enable individualisation of tenure and the provision of an appropriate level of services to the residents of these areas.
- Excising those high density areas which are located in the urban core from traditional control and including them into the city precinct in terms of land use management, rates and taxes and privatisation of ownership to encourage the introduction of a land market and asset development.
- Similarly, conditions should be imposed upon the land owners and their structures in respect of land use in peri-urban areas where no further densification or land allocation is permitted beyond that defined in the zonation process. The corollary also applies: proposed development which will not achieve the density designed for an area should be refused. The management of peri-urban development areas must be in terms of the provisions of a land use management scheme adopted by Council.
- A set of non-negotiable principles should be identified and adopted by council for land use management in rural and wilderness areas so as to ensure that the remaining areas of high ecological and/ or agricultural value are retained and, where possible, extended so as to sustain current and future populations.

ⁱ 1 Large stock unit (cattle, horses, donkeys etc) is the equivalent of 4 small stock units (eg sheep and goats)