Western Cape Government

MUNICIPALITY OF PRINCE ALBERT

Infrastructure Plan
Prince Albert Municipality

30 May 2014

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Executive Summary

The Prince Albert Municipality is one of the four municipalities in the Central Karoo District. It includes the scenic town of Prince Albert as well as the settlements of Leeu-Gamka and Klaarstroom, Prince Albert Road and Seekoeigat and surrounding rural area. Situated at the foot of the famous Swartberg Pass the town of Prince Albert town is renowned for its historic architecture and agricultural products. It is known as the oasis of the Karoo desert and attracts local and foreign tourists throughout the year. It is also historically an agricultural services hub that still provides its people and satellite towns with essential services.
Prince Albert has the potential for becoming the tourism hub to drive the growth of tourism within the Central Karoo region.
Due to the financial constraints experienced in Prince Albert financially they are totally dependent on National and Provincial grants for funding any new infrastructure. As all the grants as mentioned earlier are for the indigent communities they stand a great risk that critical upgrading and maintenance of infrastructure in the rest of the towns being neglected. The introduction of a CRR (capital replacement reserve fund) to cater for these future critical is of utmost importance.

General overview of infrastructure that can impact on development growth

Town	Water Source	Bulk Water	Bulk Sewer	Access Roads & Stormwater	Electricity
Prince Albert	☺	☺WTW ☺Bulk Supply 😐Raw water storage ☺ Reservoir capacity	☺WWTW 😐Bulk sewer	☺ Stormwater	☺ Spare capacity available
Leeu Gamka	☺	😐 WTW ☺ Bulk Supply 😐 Raw water storage 😐 Reservoir capacity	😐 WWTW 😐 Bulk sewer	☺ Stormwater	**ESKOM supply area**

Town	Water Source	Bulk Water	Bulk Sewer	Access Roads & Stormwater	Electricity
Klaarstroom	☺	Under construction ☺ WTW ☺ Bulk Supply ☺ Pumping capacity 😐 Raw water storage 😐 Reservoir capacity	Planned upgrading 😐 WWTW 😐 Bulk sewer	😐 Stormwater	ESKOM supply area
Prince Albert weg		😐 Raw water source 😐 Raw water storage ☹ Reservoir capacity	Planned upgrading ☹ WWTW ☹ Bulk sewer	☺ Stormwater	ESKOM supply area

PART A

GENERAL OVERVIEW OF THE WHOLE MUNICIPALITY

1. INTRODUCTION AND PURPOSE

The purpose of this report is to provide an overview of the infrastructure needs of Prince Albert Municipality. This overview is given in a broader context with consideration of economic, developmental and human settlement related factors. The following are the main outcomes envisioned:

- the status of infrastructure - listed per town and per service;
- a spatial and economic perspective of each town to provide context;
- a list of all possible major projects and funding source where known;
- a high level assessment of the financial capacity of the municipality with regards to capital projects.

The ultimate goal is to put the municipality in a better position to do 3 - 10 year budgeting and to ensure that the most critical and beneficial projects are addressed.
Against the background of limited funding *(the limited ability to take up loans and a finite extent of MIG funding*), the municipality must ensure that it possesses a good understanding of all the most prominent infrastructure needs and risks. The report is thus a structured overview of all critical gaps and possible expenses related to infrastructure.
The following categories of infrastructure will be identified:

- infrastructure necessitated by new developments in town;
- major backlogs or overloaded infrastructure;
- old or failing infrastructure (end-of-lifecycle).

The following are a number of underlying principles of the approach:

- a town-by-town approach is followed;
- inputs from Human Settlement and Town Planning must be included;
- a focus on larger and high-impact projects must be retained (to prevent smaller projects cluttering the main issues);
- issues and findings should be represented spatially where appropriate;
- the report must illustrate a broad understanding of the relative impacts of projects on the space economy - i.e. the principles of the NSDP and GPS must be applied (see box on the right);
- the document must become a living document that can be owned, work-shopped and updated by the municipality.

National Spatial Development Perspective - (The Presidency - 2006)
Seeks to focus the bulk of fixed investment of government on those areas with the potential for sustainable economic development.
Provides that in areas of limited potential it is recommended that, beyond a level of basic services, government should concentrate primarily on social investment, so as to give people in these areas better information and opportunities to gravitate towards areas with greater economic potential.

2. SPATIAL OVERVIEW

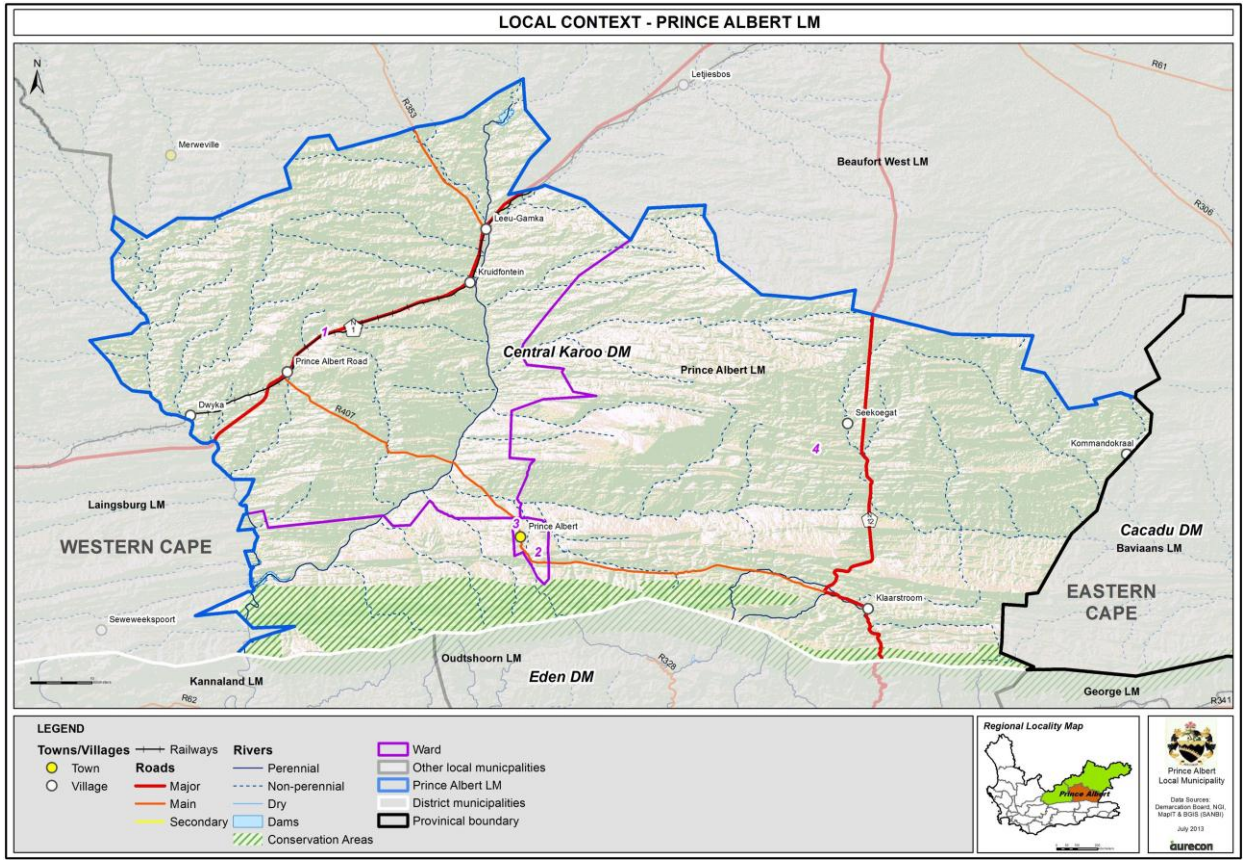
a. Towns and Basic Population Numbers

Prince Albert Municipality is characterised by four main towns namely:

- Prince Albert
- Klaarstroom
- Leeu Gamka (including Bitterwater)
- Rural town of Prince Albert Road

Prince Albert Municipality (PAM), with a population of about 13150 people, is a Category B municipality, meaning the municipality shares executive and legislative authority with the Central Karoo District Municipality, within whose area it falls.

Prince Albert, situated at the foot of the Swartberg Mountains, is the largest town within PAM containing 7055 people, or 54% of the entire population of the municipality. Prince Albert is situated along the R328, some 45km south-east of the N1 and Prince Albert Road, 400km from Cape Town and 170km from Beaufort West. Located at the northern end of Swartberg Pass, Prince Albert is also accessible from Oudtshoorn either 70km via the Swartberg Pass (R328) or 111km via the N12 and the R407, passing through Klaarstroom.



A map illustrating the location of settlement's within Prince Albert Municipality

As can be seen from Figure 1, both Prince Albert Road and Leeu Gamka are located along the N1 highway, some 350km and 390km away from Cape Town respectively.
Both settlements are located roughly midpoint between Laingsburg and Beaufort West along the N1 highway, which is the primary linking road.

Leeu Gamka (including **Bitterwater**) is located along the N1 National road between Laingsburg and Beaufort-West, approximately 85km to the north of Prince Albert. It contains 2726 people, which is 21% of PAM.

Klaarstroom is approximately 116km south of Beaufort-West on the R407 *en route* to Oudtshoorn, some 52km east of Prince Albert. It contains 584 people, which is 4% of PAM.

The smallest settlement within the PAM area is **Prince Albert Road** located on the N1 but between Laingsburg and Leeu Gamka, approximately 45km north-west of Prince Albert. Its population is incorporated in the Prince Albert non-urban (NU) count.

The population distribution figures for PAM are illustrated in Table 1, below. Settlement scale population predictions based on a 2.2% growth rate per annum are also set out below, as well as the projected housing and associated land requirements for future housing development.

Settlement	Population (2001)	Growth Rate 2001 - 2011	Population (2011)	Projected Population 2015	Projected Population 2020	Projected Population 2025	Projected Population 2030
Prince Albert	5646	2.2% p.a.	7055	7713	8622	9638	10774
Bitterwater	1698	2.2% p.a.	2122	2320	2594	2900	3242
Leeu Gamka	483	2.2% p.a.	604	660	738	825	922
Klaarstroom	467	2.2% p.a.	584	638	713	797	891
Prince Albert Non-Urban	2218	2.2% p.a.	2772	3030	3387	3786	4243
TOTAL	10512		13137	13137	13137	13137	13137

Prince Albert 2011 Census Main Place Population Data

3. ECONOMIC IMPORTANCE AND POTENTIAL OF TOWNS

3.1 General Economy

Agriculture and tourism are the dominant sectors of the PAM economy. The town of Prince Albert is popular with both local and foreign tourists for its historic architecture, scenic beauty and relaxed Karoo town appeal. Popular tourist attractions within the town include the National Heritage site, Swartberg Mountains and Swartberg Pass, which host about 16 500 visitors a year. PAM is the Water Services Authority (WSA), and is responsible for the provision of water within the municipality.

PAM recorded an annual average economic growth rate of 7.8% between 1995 and 2004, which outstripped the Central Karoo District Municipality (CKDM), which recorded an average of 4.2% during this period.

Sectoral Contribution to the Economy

In terms of sectoral contribution to the PAM GDPR, **four sectors increased their share** of contribution to PAM's GDPR between 1995 and 2004 namely (PGWC, 2007):

- Wholesale, retail, trade and catering;
- Transport and communication;
- Finance and business; and
- Community, social and personal services.

Four sectors decreased their contribution, most notably general government services and agriculture, forestry and fishing.

The following sectors played the most significant role in the economy of PAM in 2005 (PGWC, 2007):

- The finance and business services sector was the largest contributor at 43%, with an average growth rate of 38.2% in the period 2004 to 2005.
- The wholesale and retail trade, catering and accommodation contributed 16.2 % of GDPR growing at 11% during 2005.
- Transport and communication was the third largest contributor with 11.4%, growing at 2.6% between 2004 and 2005.

- Manufacturing contributed R 13.4 million (3.8%), growing at 2.6% in 2005 compared to the CKDM's 7.6 %.

Employment trends

In terms of employment trends between 2001 and 2007, there was a sharp decrease both proportionally and in absolute terms in the **primary industries** (such as agriculture, hunting, forestry and fishing), which went from employing some 2384 people (55% of those employed) in 2001, to employing 622 people (31% of those employed) in 2007.

Secondary industries (manufacturing, construction and electricity, gas and water) registered a slight increase between 2001 and 2007 from employing 546 to 631 people, notably attributable to an increase in construction during this period, whilst **tertiary industries** (wholesale, retail, transport, storage, finance, real estate and community services) registered an absolute decrease between 2001 and 2007 from 1106 people employed in the sector in 2001 to 733 in 2007.

When looking at the employment status changes between the 2001 and 2011 census periods, a different picture emerges, as illustrated in the table below:

Employment Status	Employed	Unemployed – Discouraged work-seeker	Unemployment Rate	Labour Force Participation Rate	Not Economically Active (0 – 15 yr.)	Total Working population (15 – 65yr.)
2001	2496	1346	35%	81%	2496	3842
2011	3513	1341	28%	73%	3555	4854

Employment figures for Prince Albert between 2001 and 2011

From the above, it can be observed that:

- The unemployment rate dropped by 7% between 2001 and 2011.

- Between 2001 and 2011, the total working age population increased by approximately 1000 people, whilst the number of people employed during the period also increased by approximately 1000 people from 2496 to 3513.

Regional gross value added figure (GVA-R) in 2001 amounted to R124.019 million, which grew to R167.260 million in 2009 – which accounts for 14.8 per cent of total the CKDM regional economy of R1.130 billion. The GVA-R average annual growth rate from PAM between 2001 and 2009 was 3.8%, compared to 3.6% for the District. Despite these sectors decreasing or stagnant contribution to employment, agriculture, construction and community services are the largest sector contributors to GVA-R of PAM. Generally, economic activities are concentrated primarily in one section of the town of Prince Albert and youth and gender equity in economic participation is minimal.

3.2 Growth Potential of Towns in the Western Cape (2013 review)

The research study *Growth Potential of Towns in the Western Cape (2013)* ranked the towns of Prince Albert and Leeu Gamka in terms of their growth potential. Based on these rankings, Both Prince Albert and Leeu Gamka were categorised in relation to other settlements in the Western Cape (on a scale from very high to very low) as towns with ***very low development potential***. The low ranking in terms of development potential is mainly due to a lack of economic activity, low carrying capacity (primarily due to water availability constraints) and the lack of natural resources in the PAM.

Town	"Composite Growth Potential Index"
Prince Albert	Very low
Leeu Gamka	Very low
Klaarstroom	(Not included)
Prince Albert Road	(Not included)

Although not ranked, Klaarstroom, a small Karoo settlement, has remained virtually unchanged with its economy historically driven by the first wool washing plant. This small settlement can also be ranked as having ***very low development potential***.

Prince Albert Road, a small railway settlement, is also not ranked but can also be categorised as a settlement with ***very low development potential***. The low ranking in terms of development potential is mainly due to a lack of economic activity and market potential.

It should be noted that the Growth Potential Study explicitly recognises that past and current growth development potential is not necessarily indicative of future growth potential, particularly where a settlement contains latent development potential that is either unknown or unrealised.

Opportunities for economic growth

A number of opportunities and interventions exist for economic growth as set out in PAM's 2010/11 IDP review, such as:

i. Housing

In consultation with the PAM it was confirmed that during 2005/06 a total number of 350 affordable Reconstruction and Development (RDP) houses were completed in Prince Albert, as well as 60 RDP houses in Klaarstroom in 2011/12. (Pers. Comm., Mr H Mettler, 2010).

Housing projects provide job opportunities and income as well as a stimulus for economic activity. In consultation with the Housing Department of the LM it was confirmed that future housing projects will consist of the following number of affordable houses (Pers. Comm., Mr H Mettler, 2010):

- 251 housing units in Leeu Gamka.
- 80 housing units in Klaarstroom.
- 300 housing units(BNG) in Prince Albert.
- 69 CRU units in Prince Albert
- 30 CRU units in Prince Albert Road (ex-Transnet property)
- 62 CRU units in Leeu Gamka (ex-Transnet property)

ii. Prince Albert tourism development – Swartberg Pass & Destination events

The Swartberg Pass is a significant tourism asset in the municipality and has the potential to either hold more sports events and/or to better market its current sport events. These events, although periodic, bring with them economic growth opportunities, which should be optimally maximised.

iii. Retirement and alternative lifestyles in Prince Albert

Prince Albert has a unique sense of place that is seen as highly desirable for those wishing either to retire or to escape the stresses of city life. It has a small yet growing number of middle to high-income people who are settling there. As a result, new industries (i.e. craft and tourism related) are growing and providing job opportunities for low-income residents. This sense of place can be attributed to Prince Albert's unique and well-preserved heritage character, close relationship between the town and its surrounding farmland and its position at the foot of the Swartberg Pass. This 'inflow' of residents holds the potential to significantly grow the town's economy, if the town is able to position itself to further attract these residents and maintain its desirable qualities. This means maintaining and enhancing the heritage of the town, preventing urban development from encroaching on the 'town farms' and market the Swartberg Pass and associated activities as a tourism element of the town.

iv. Klaarstroom Service Station

Klaarstroom is strategically positioned along the N12 between Beaufort West and George. There is therefore the potential to establish a service station at this town, along the N12, which will service passing traffic and create opportunities for refreshment stops, refuelling and other related services.

v. Leeu Gamka community bakery

Leeu Gamka has a growing residential component to it. This presents opportunities for small businesses to service this growing residential component, such as a community bakery which has been a previous business proposal.

vi. Klaarstroom tourism and business development

Klaarstroom is located in an advantageous position between Beaufort West and the garden route towns, along a beautiful stretch of road and just before the Meiringspoort Mountain Pass. It therefore must focus its attention to accessing opportunities that are presented by this location, such as service stops, tourism facilities and information.

vii. Nine (9) light industrial sites have been developed and serviced in Leeu Gamka, adjacent to the N1 highway, to make provision for future development. Leeu Gamka is also seen as a potential base and maintenance site for the SKA infrastructure as well as the new

solar field in Fraserburg – it is well located for this. A new pomegranate orchard is also being grown in the town, creating jobs and new business opportunity.

viii. Leeu Gamka: Access point to the Northern Cape, especially for SKA and possible shale gas exploration.

ix. Shale gas extraction in the region of Seekoeigat holds the potential to bring new business opportunities and rate payers into the municipality.

x. Prince Albert: Volstruisvlei golf estate: Construction of the golf course has commenced.

xi. Kokkedoor: Food tourism development potential. Film industry development in the region.

xii. Leeu Gamka: Rural development node: Pomegranate farm proposed to boost agriculture and supporting industries associated with the fruit.

xiii. Support for recycling project in the region to develop job opportunities.

4 THE SPATIAL DEVELOPMENT FRAMEWORK (SDF) AND INFRASTRUCTURE MASTER PLANNING

4.1 The Spatial Development Framework (SDF)

Prince Albert Municipality commenced the updating of its Spatial Development Framework within 2013, with the assistance of the National Department of Rural Development and Land Reform. The SDF was prepared by Aurecon, with Council approval granted on 27 February 2014.
The primary infrastructure informants that are highlighted in the SDF relate to the following:

- Accommodating new housing development (320 both subsidy and GAP units) in Bitterwater, Leeu Gamka.
- Accommodating new housing development (300 subsidy units) in Prince Albert, adjacent to North-End.
- Various 'unfunded' projects that relate to the need to maintain or upgrade existing infrastructure, such as WWTW, pump stations, water sources and storm water systems.

4.2 Master Planning

The status of the various Master and Sectoral Plans are included in the table below:

Master/Sectoral Plan	Consultant	Latest version date	Comments
Water Master Plan (Draft)	GLS	Aug 2010	GLS tasked to update the plan
Sanitation Master Plan (Draft)	GLS	Aug 2010	GLS tasked to update the plan
Water Service Development Plan (Draft)	KV3 (Worley Parsons)	Nov 2008	URGENT as this was an Audit query. Municipality still to ask for tenders
Water Conservation and water demand management strategy	Worley Parsons		
Pavement Management System	V&V	2010	Need updating
Storm Water Master Plan	Aurecon	2013	Proposal has been made but no funds available. Budget needed R 1.5 m
Roads Master Plan	Department of Transport	Oct 2009	
Local Integrated Transport Plan	Province	2009	District Municipality
Integrated Waste Management Plan	??		Appointed
Electricity Master Plan	??		

5 DEVELOPMENT PRESSURE

5.1 Housing Pipeline

The housing demand in the municipality is set out, per settlement, below:

Settlement Name	Housing Demand
Prince Albert	857
Leeu Gamka & Bitterwater	485
Klaarstroom	72
Total	1474

The table below sets out the housing pipeline targets for Prince Albert. The spatial location of these projects can be found on the following maps.

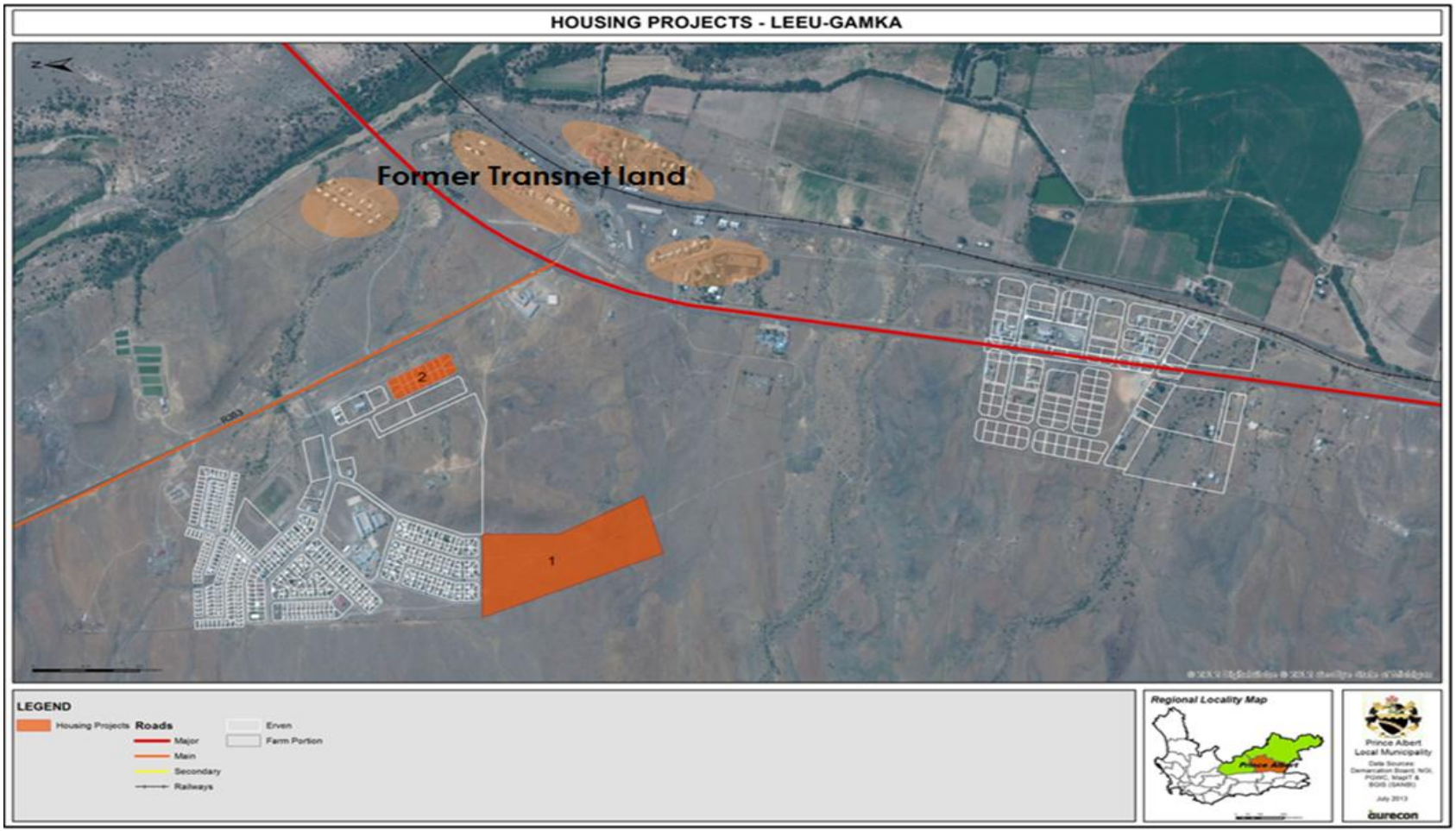
Project	Programme	Proposed Implementation Year	Sites	Enhanced Sites	Units	Other	Readiness	Planning Recommendation
2718(3) : Transnet Housing Leeu-Gamka & Prince Albert Road (92 services) UISP	UISP	2013/14	62 Leeu Gamka 30 Prince Albert road	0	0	0	Y	Project conditionally supported by PPC if all planning processes successfully completed and subject to the availability of sufficient bulk capacity
Leeu Gamka 333 IRDP – Parent (3033.01 & 3033.02)	IRDP	2013/14 – 14/15	0	0	251	0	Y	Project was conditionally supported, conditional that only existing housing need be accommodated as Leeu Gamka has a very low growth potential.

Project	Programme	Proposed Implementation Year	Sites	Enhanced Sites	Units	Other	Readiness	Planning Recommendation
Prince Albert GAP (69)	IRDP / FLISP	Future Dev	69	0	0	0	N	Project was conditionally supported, conditional that only existing housing need be accommodated as Prince Albert has a very low growth potential.
Prince Albert (300) IRDP	IRDP	2016/17	300	0	300	0	N	Not enough information available to provide a credible planning recommendation.
3290 : Prince Albert Klaarstroom Enhanced Services (30 services) IRDP - Parent	IRDP	2017/18	30	0	0	0	N	Project provisionally supported by PPC, but it was recommended that the project be viewed as an extreme long term priority for the municipality, thus the earliest implementation date must be changed to 2022/23.

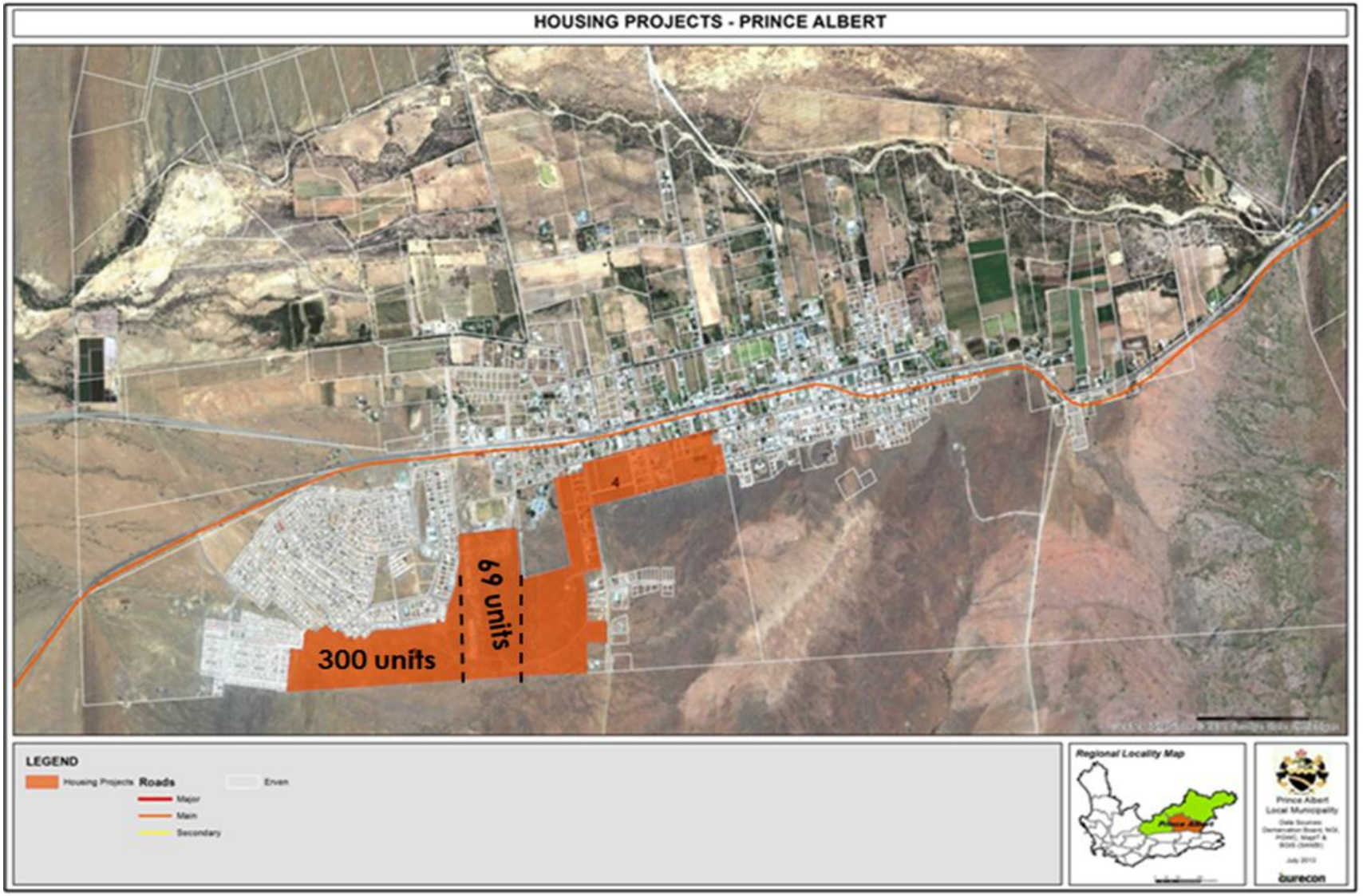
The Prince Albert Housing Pipeline (Jan, 2014)

5.2 Current Housing Projects:

The maps below set out the various current and planned housing projects within the municipality. Projects on the cards are primarily for Bitterwater (an extension to the existing subsidy housing development) and Prince Albert, as shown on the Housing Pipeline and maps.



The location of subsidy and GAP housing envisaged for Leeu Gamka and Bitterwater, as per the housing pipeline



The location of subsidy housing envisaged for Prince Albert, as per the housing pipeline

5.3 Private Development/s

Any infrastructure provided should also cater for private development as these developments ensure a long term income stream to the municipality through rates and taxes and is therefore a vital component in protecting the financial sustainability of the municipality. Also, it cannot be expected from developers, especially smaller ones, to directly finance new bulk infrastructure. While they must contribute through bulk infrastructure contribution levies they are generally dependant on the availability of spare capacity in the system. Hence, if the municipality does not ensure that there is some spare capacity, private development will generally not occur, which in turn will undermine the long term balance sheet of the municipality.

It should be noted that the only notable future private development within the municipality is likely to occur within the settlement of Prince Albert – towards the South-end of the town where the majority of middle to high income dwelling units are. Whilst there may be the temptation to develop on the adjacent farmland or the 'town farms', this should be strongly be discouraged until such a time that the municipality develops a 'Town Farms' policy in order to determine which of the town farms will be protected long term and which may be released for development.

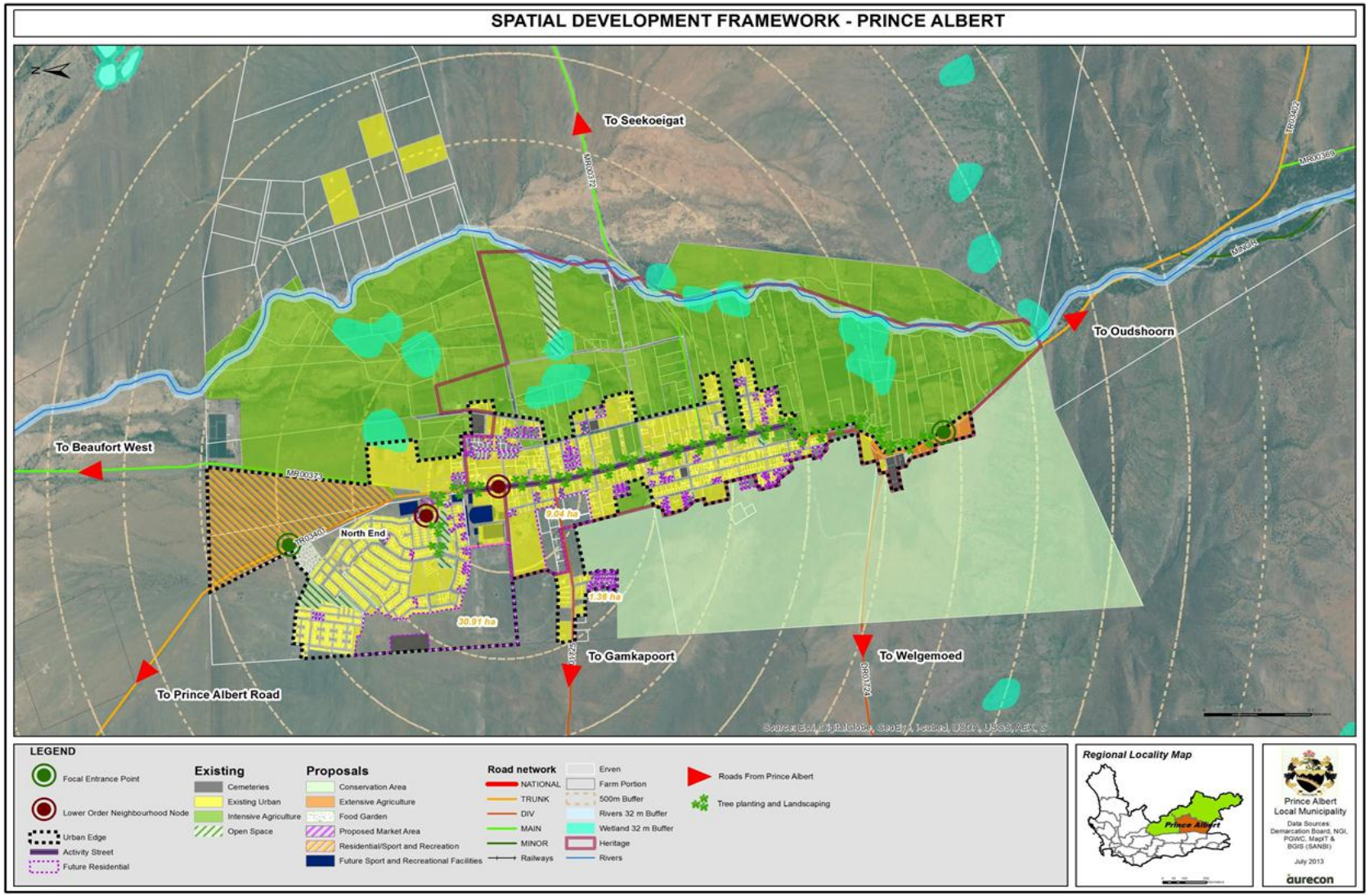
The draft Spatial Development Framework also identified a portion of land – to the north east of the town – which is to be included within the SDF. This should be viewed as low-priority, long-term development potential land as the land is spatially segregated from the town, on the other side of the Dorps River and potentially threatens the long term sustainability of the farmland that sits between this land and the town, which may be released to development if this development path is pursued.

Volstruis vlei golf estate

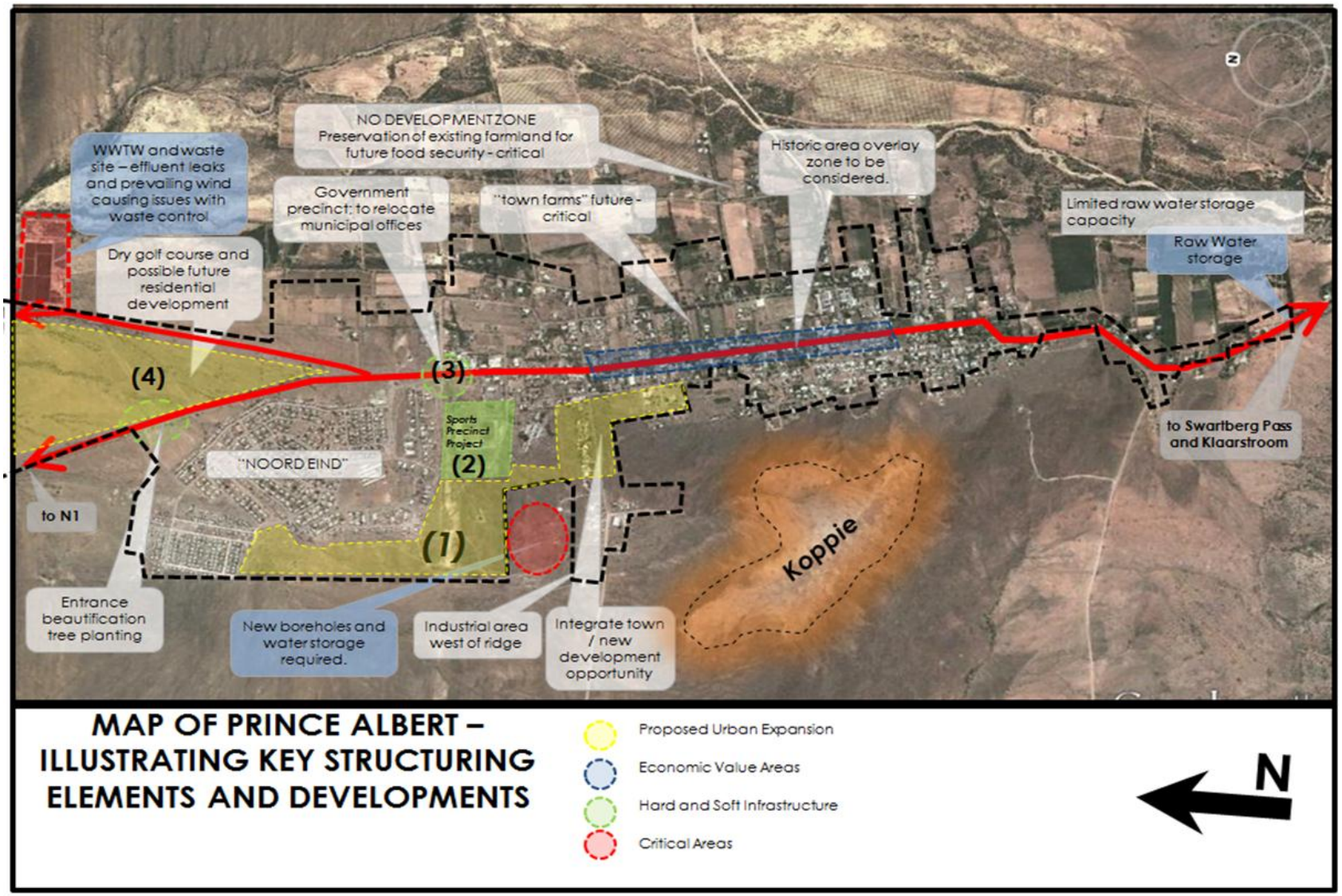
PART B: PER TOWN OVERVIEW:

DEVELOPMENT AND INFRASTRUCTURE

6. PRINCE ALBERT



The SDF for Prince Albert (February, 2014)



A map illustrating the key infrastructural / development issues and pressures in Prince Albert

Future Development Name	Anticipated Land use	No. of Dwelling Units	Coverage (m2 floor area)	No. of Units (base year : 2013) Residential			
				Next 5 yr's	5 - 10 yr's	> 10 yr's	Total
1	**Noord-Einde Extension**	300+69		369			
2	**New Sports Precinct Project**	0					
3	**New Government Precinct**	0					
4	**Future middle income residential development**	unknown					
5	**Agri-village/environmental education centre/allotments**	unknown					
6	**Volstruisvlei golfcourse ???**	unknown					

Prince Albert - Development Pressure

Overview: Prince Albert, with a population of about 7055 people, is situated at the foot of the Swartberg Mountains in the Central Karoo, 400km north of Cape Town and 170 south-west of Beaufort West along the R407.

Prince Albert is the administrative/tourism capital of the municipality and draws most of the people and business to it and should therefore be the first priority for public investment purposes.
Broadly, the town can be divided into the historical, heritage south and central, farmlands to the east and a poorer and spatially segregated north.

The town and immediate surrounds is characterised by being a high intensity agricultural production area, with tourism closely following in terms of its presence and contribution. Church Street is the principle cultural, heritage and structuring element of the town, characterised by its boulevard of trees and significant heritage buildings and street frontages. The town is further characterised by various national monuments, a water furrow system, significant heritage farmhouses on prime farmland, the grouping of Victorian and Edwardian dwellings and a strong urban-agricultural link.

The Robert Gordon Koppie provides a botanical element to the town, with the Swartberg Mountains providing a majestic backdrop for the town. The current spatial form still strongly reflects the history of the town and past patterns of development. The linear structure of the town is determined by the highest contour along which water can be gravity fed to the lower lying erven and floodplain.

The North End neighbourhood is spatially separated from Prince Albert town, presenting an entirely different urban quality. Buildings are generally single RDP type housing and there are far fewer trees. Future developments should be strategically located in order to promote the integration of North End neighbourhood and the historical town.

Challenges and Potential emanating from the SDF:
Approximately 130 hectares of land is reserved within the urban edge for future residential development, which is excess of what is required to accommodate growth projected for the next 20 years. The future residential development areas are prioritized for infill

development first, bridging the divide between North end and the town itself, with the outlying land being last priority development land. The nature of the 'infill development' between North end and the town centre will be in the form of residential development, the development of sport and recreational activities and an extension of Mecuur Street to link it to the rest of the town's street network.

The town farms of Prince Albert are highly threatened by urban development, despite these farms' importance to the long-term food security of the settlement. It should therefore be ensured that urban development is strictly prevented on these farms, and no infrastructure installed on the farms, which would facilitate such future development.

Water availability is also a significant constrainer of the future growth of Prince Albert, as the area falls in an arid climatic zone. Existing water and watercourses must therefore be strictly protected and rehabilitated, where necessary, to ensure that the settlement has access to a sustainable and clean water supply.

Projects emanating from the SDF:

- Maintenance of internal roads and sidewalks is required, with additions and upgrades to the Non-Motorised Transport network proposed.
- An entrance from the R407 (north) into Prince Albert needs to be created to improve the first impression of the town.
- Development of sports and recreation facilities between north-end and Prince Albert central.
- New Municipal offices planned near Thusong Centre.
- Reinforce Church Street as the activity street of the settlement by promoting intensification of architecturally and heritage appropriate development.
- RDP and GAP residential development adjacent (West) of North-end.
- Tree-planting and landscaping of Church Street.
- Tree-planting and landscaping of North-end.
- Extension of Mecuur Street.

	Private Residential Developments	**Commercial & Government**	**Informal Settlements & Backyarders**	**Subsidised Residential Projects**
Current Situation:	Private sector developments being built currently: • The nature of private development in Prince Albert is	Industrial erven have been developed in the west of the town – these have not yet been taken up.	There is both limited informal development and backyarders within the North-end of Prince Albert.	2 000 people on the waiting list.

	very small scale and not on a large (developer-led) scale.			
Future/Planned:	Private sector developments in the pipeline: • There are 11 single residential undeveloped sites within Prince Albert that have approval for future development. • Volstriusvlei golf course is planned, although it appears there may be a clash between this and the current (and potential) agricultural use of the land on which it is planned.	New municipal office next to Thusong centre planned. Planning of a government precinct and sport complex just behind Thusong Centre planned.		300 BNG planned in North-End.
Comment	Issue of subdivision of small farms in or adjacent to historic part of town; coupled to use of water rights.	Issue of zoning of CBD properties – many operate as businesses but on departure, and therefore do not pay correct rates and taxes.		

Prince Albert - Infrastructure

Overview

Prince Albert receives its domestic water from the Dorps River and nine boreholes.

Dorps river abstraction.

A relatively new 250mm Ø uPVC pipeline, located inside a previously used concrete canal, is fed from a weir in the Dorps river. The flow in the pipeline varies and depends on the amount of water in the river. The maximum capacity of the pipelines approximately 105 l/s and is diverted as follows:

Kweekvallei Irrigation Board – 89.6%

Prince Albert Municipality – 10.4% (gravitates to the Prince Albert WWW)

The licensed abstraction from the Dorps River is 0.47 million m³ per year but the reported supply was much less. For the boreholes the total licensed abstraction is 0.23 million m³ per year but about 0.4 million m³ per year is being abstracted. This might be due to operation preferences or the unavailability of the water in the mountain stream (Dorps River). The latter source is problematic as it runs very low during the dry summer months and necessitates the introduction of water restrictions.

The 10.4% gravitates to the Prince Albert WTW which has one raw water pump station which pumps water through the iron remover.

The lack of an off-canal raw water storage dam is evident. Overflow water from the Dorps River system can be diverted during the winter months and stored for purification in the dryer summer months. Artificial recharge of the boreholes have already been extensively investigated and implemented according to officials from the Municipality.

Boreholes

Summary of the Prince Albert groundwater infrastructure

Description	Boreholes								
	SRK 1	P1	P2	P3	P4	P5	P6	P7	P8
Power source	Electricity								
Power (kW)	5.5	2.2	0.75	5.5	4	4	4	1.5	11
Power source	Electricity	Good	Good	Good	Good	Good	Good	Good	Poor
Age of pumps(years)	7		2	2	2	2	2	2	10+

Sources: CIP BKS 2011

Furthermore, the dumpsite is uncontrolled and causes serious environmental concerns.

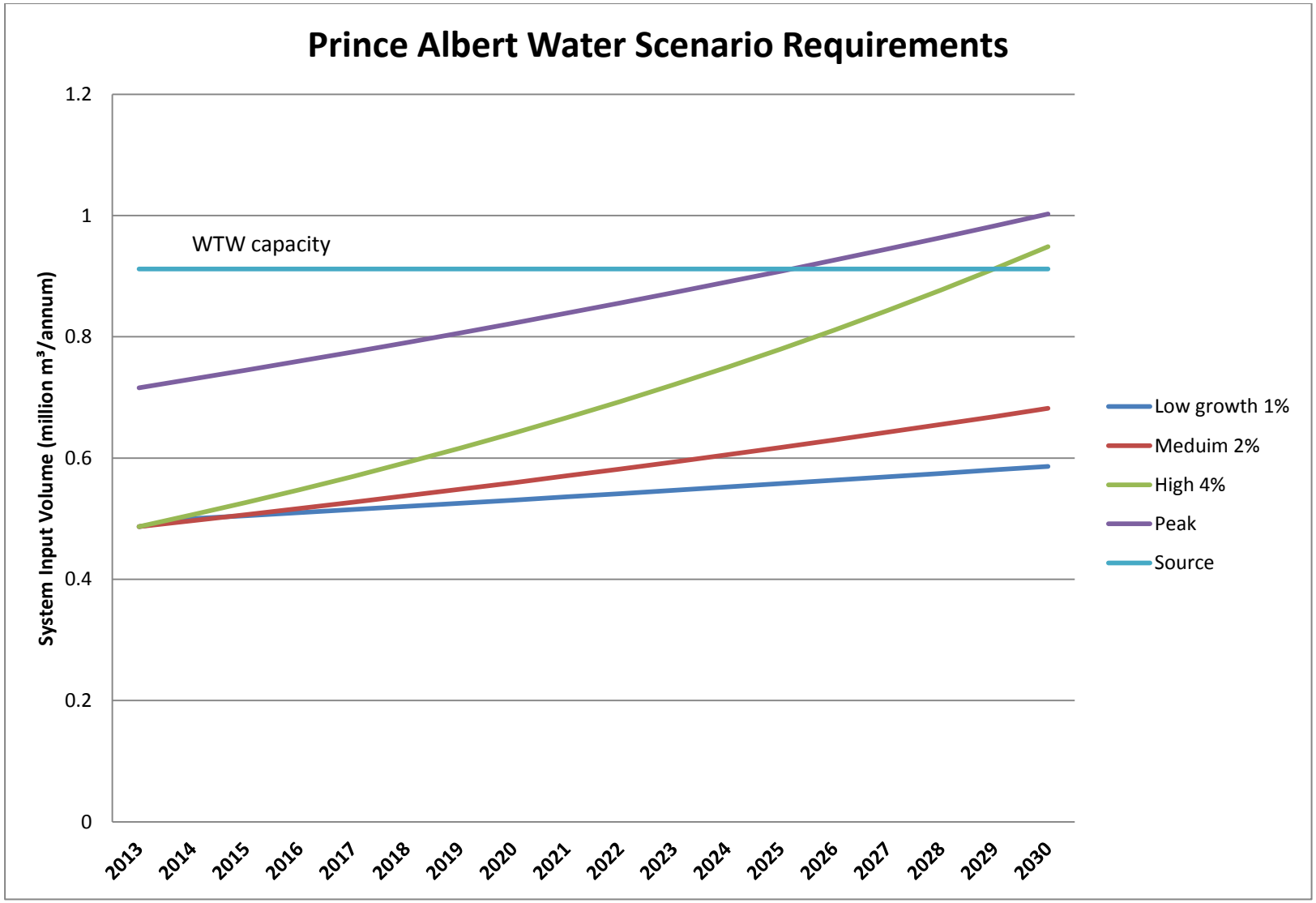
	Water Source	**Water Treatment & Storage**	**Sanitation**	**Other** (electricity, solid waste, roads & stormwater)
Description	9 production boreholes and Dorps River surface water canal [A] No flow measurement on the Kweekvalley leivoor. Diversion structure to divert flow between farmers and Local Authority is not a scientifically designed structure making calculations very tricky. Some reports indicate that the Local Authority are conducting borehole	WTW; Capacity 0.73 million m³/ annum Current demand estimated at 0.66 million m³/ annum. [Inclusive of UAW] [A	The waste water treatment works is a pond system consisting of 3 anaerobic dams, a primary aerobic dam, 3 secondary aerobic dams and a storage dam. The works were constructed in about 1997 and the design capacity was 623 m3/d. The ponds are in good condition as they were refurbished in July 2009 and	Solid waste site unlicensed. Recycling occurs at licenced site. Dumping of refuse occurs on adjacent land in an unlicenced area. Electricity network very old and prone to multiple failures, equipment is past its service life.

	recharging but evidence thereof couldn't be confirmed.		re-lined with an HDPE lining. Only Noord Eind extention of town and a couple of central business plots has waterbone sanitation;
Current Capacity	Type of authorization: Registered abstraction from surface water source (Dorps River) in the WARMS database 0.121 million m³/ a , 332 Kl/d. Registered abstraction from groundwater source in the WARMS 0.220 million m³/ a 603 kl/d Total registered abstraction = 935 kl/d Current demand based on per capita usage based on 2011 census figures extrapolated by 2.2% growth to 2013 7367 * 181 l/p/p/d = 1.33 Ml/d Aurecon report 6685/106871 January 2013 reflect a 1.177	WTW; Capacity 2.5 Ml/d (Blue drop 2012) WTW 9 Boreholes Licenced abstraction 0.229 million m³/a; 627 kl/d Current abstraction 0.4 million m³/a; 1.096 Ml/d Dorps River Licenced abstraction 0.471 million m³/a; 1.290 Ml/d Current abstraction 0.087 million m³/a; 0.238 Ml/d Total abstraction: 1.334 Ml/d Usage per capita 2011 sensus 7055	0.665Ml/day [PDNA report 2008] The existing flowmeter at the WWTW has been recalibrated. Flows measured varies between 350 to 450 kl/day.

	Ml/d . For purpose of this report we use the figure of 1.33 Ml/d	Probable population 2013 (2.2%) 7367 Usage per capita 2013 1.334 Ml/d / 7367 **181** l/p/p/d Reservoirs: Total storage: 3.04 Ml (4.04 Ml after completion of new reservoir 2014) Water from WTW pumped to 2 low-level zone collection reservoirs (1Ml and 0.540 Ml) Bulk water from collection reservoirs pumped to 1 high level reservoir. 500kl serving Prince Albert (south) and 1000kl serving Noord eind is gravity fed by the two low-level zone collection reservoirs. New 1.5 Ml reservoir being constructed adjacent to the existing Noordeinde reservoir for the housing project.	
Spare Capacity	For purpose of this report we use the figure of 1.33 Ml/d	WTW Design capacity 2.5 Ml/d but current utilisation only 1.334 Ml/d Usage per capita 2013 1.334 Ml/d / 7340 **181** l/p/p/d	Capacity - 0.665 Ml/d Current flow estimated at 600 l/hh/d 2011 Census 1960 households

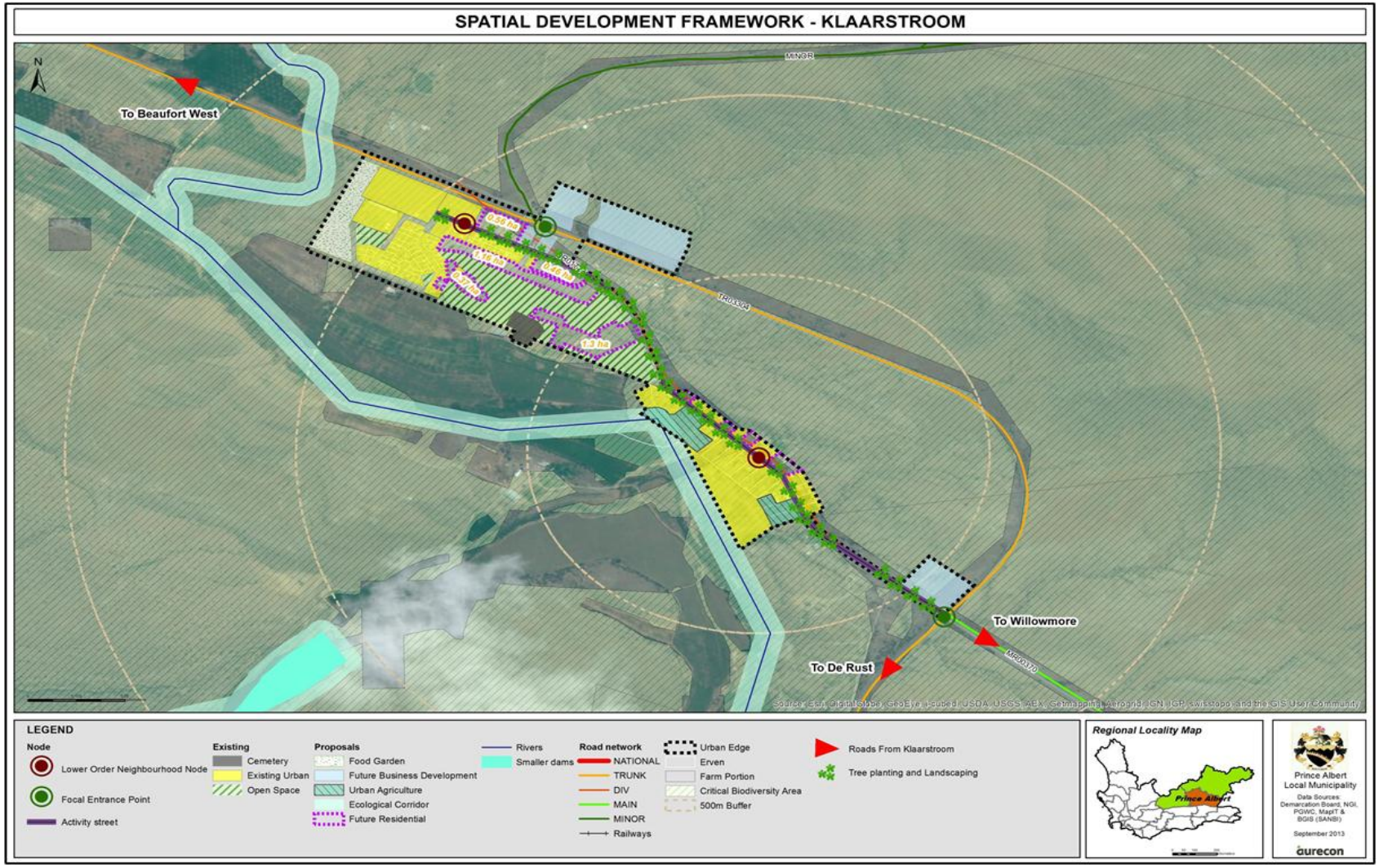
Reconciliation Study: ***Demand at 2030*** ***Slow Growth*** 0.305 million m³/a; 0.836 Ml/d Surplus 0.395 million m³/a ; 1.082 Ml/d ***Medium Growth*** 0.403 million m³/a ; 1.104 Ml/d Surplus: 0.297 million m³/a ; 0.814 Ml/d ***High Growth*** 0.502 million m³/a ;1.375 Ml/d Surplus: 0. 198 million m³/a 0.543 Ml/d	Demand **2015** 7713 * 181 l/p/p/d = 1.396 Ml/d; 0.510 million m³/a **2020** 8622 * 181 l/p/p/d = 1.561 Ml/d; 0.570 million m³/a **2030** 10774 * 181 l/p/p/d = 1.950 Ml/d; 0.712 million m³/a Actual recorded 2013 raw water figures No figures available ! Peak monthly factor for Prince Albert is taken at 1.47 (Aurecon 2013) Peak demand 2015 2.052 Ml/d 2020 2.295 Ml/d 2030 2.867 Ml/d Current water losses 12.51 % (source AG 2012) WTW Design capacity 2.5 Ml/d but current utilisation only 1.288 Ml/d (Recon 2010) Spare capacity = 1.212 Ml/d	Aurecon report 1826 indigent (only this connected to WWTW) + 10 % of town. 1826 * 600 l/d = 1 096 kl/d 2015 2143 * 600l/d = 1447 kl/d Flow readings at the recalibrated flowmeter 350 – 450 kl/d, therefor within the capacity at present. WWTW needs upgrading. Construct new inlet works, with sand and grit removal and flow measurement. Septic tanker discharge point needed. Recirculation pump system to be upgraded. Chlorination of final effluent required. Irrigation of effluent system to put in place.

Blue and Green Drop comments		Prince Albert Municipality - Overall 21th position in Province. 2012 Blue drop score for Prince Albert WTW 2010– 62.75 % 2011– 60.86 % 2012– 68.86 %	The overall 2011 Municipal Green drop score of **68%** places the municipality in the 13th position out of the total of 27 municipality's assessed. Prince Albert WWTP Green drop score 2011 **– 72.5%** 2009 – 53 % Operating % i.t.o capacity – 93% -before upgrading. % i.t.o Maximum Risk Rating 50%

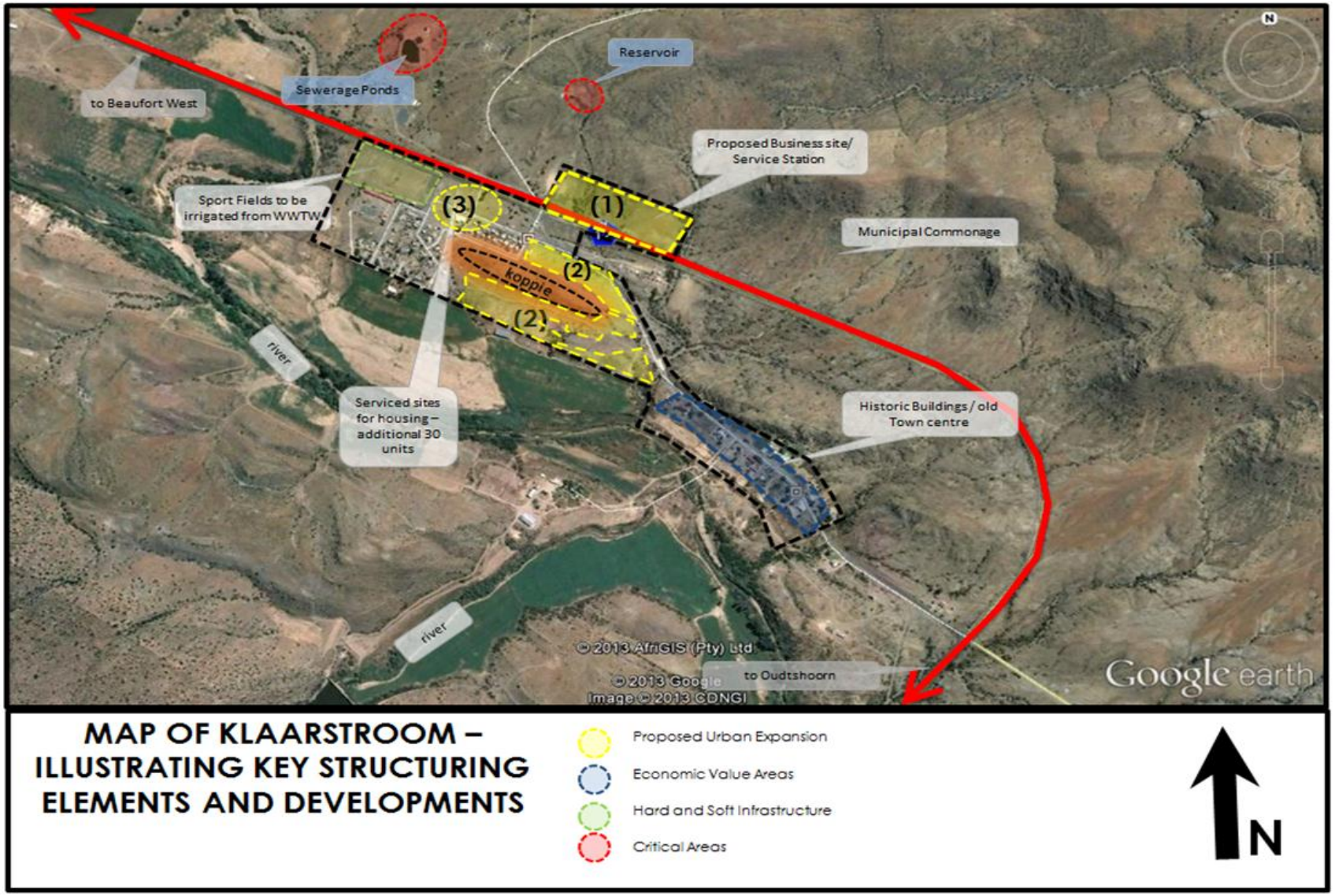


A graph illustrating Prince Albert's water requirement scenarios

7. KLAARSTROOM



The SDF for Klaarstroom (February, 2014)



A map illustrating the key infrastructural / development issues and pressures in Klaarstroom

Future Development Name	Anticipated Land use	No. of Dwelling Units	No. of Units (base year : 2013) Residential			
			Next 5 yr's	5 - 10 yr's	> 10 yr's	Total
1	New Business Site – Service Station	0	1			
2	Sites – residential	80	0	80		
3	Sites - residential	60	completed	0		

Klaarstroom – Development Pressure

Overview:

Klaarstroom is situated on the banks of the Groot River along the N12 National Road, approximately 55km east of Prince Albert and has a population of about 584 people, enjoying the dramatic backdrop of the Swartberg Mountains. The economy of the town is driven by agriculture and tourism.

Klaarstroom is divided into two distinct parts – the original, historical south-east and a newer and poorer north-west, separated by a koppie and a river crossing. The main structuring element of the town is the R407 (main road) that runs through it, linking its north-west and south-east.

Whilst a historic and small settlement, Klaarstroom lacks trees and landscaping, which could greatly enhance its appearance and appeal.

Challenges and Potential emanating from the SDF:

Approximately 13 hectares of land is reserved for future residential development which is in accordance with the household growth projections. The future residential development areas are prioritized as follows: (see the draft Klaarstroom SDF, above)

- Priority Area 1, 2, 3 & 5: Ideal for BNG housing to bridge the spatial divide
- Priority Area 4: Ideal for GAP housing
- Priority Area 6: The lowest priority is allocated to this area for it does not promote the integration of Klaarstroom north and south.
- The density of new developments will be as high as 25du/ha.
- Business and commercial activities should be accommodated along the activity spine (main road) and focused towards the identified lower order neighbourhood nodes.
- The area north of the N12 which is earmarked for business development should accommodate a service station and transport related services.
- The 1:50 year flood line adjacent to the river should be taken note of, and no development within this area allowed.

Projects emanating from the SDF:

- Celebrate the two main entrances of Klaarstoom through landscaping and signage, which portrays the unique sense of place of Klaarstroom.
- Tree planting and landscaping of the main structuring elements of Klaarstroom.
- Promote and enhance the tourism route between Klaarstroom and Willowmore, as well as the route to Meiringspoort.
- New residential development between the historic and newer parts of the town.
- Infrastructure for new service station planned for the northern side of the N12.

	Private Residential Developments	Commercial & Government	Informal Settlements & Backyarders	Subsidised Residential Projects
Current Situation	Historical private development is located primarily in the south-east of the town.		+- 15 shacks currently located in the north-west of the town, adjacent to the N12.	60 subsidy houses built +- 2 years ago.
Future Planned	There are no known future or planned private residential developments for Klaarstroom.	Service Station / "One Stop" proposal north of N12 on commonage land. The service station development is subject to an EIA approval, land use approval and a private sector party willing to commence with the development.	Future subsidy housing, as per the housing pipeline, should eliminate the current limited informal settlement.	Another 80 subsidy houses planned for after 2016.

Klaarstroom - Infrastructure

Overview:

Klaarstroom has enough water resources for the foreseeable future and is currently supplied with groundwater from three production boreholes. Based on the information in the CIP 2011, only two of the three is currently in use. The borehole scheme is reported to be in a good condition but although the abstraction is recorded (system currently out of action for use in Leeu Gamka, quality monitoring is done and the borehole water level is normally monitored. However all these measurements were

not being downloaded for review and monitoring. The consultant downloaded the data with the investigation and installation of the third borehole. This should be done as an early indication of pre-emptive action. There is no information available about the safe yield or the licenced abstraction from the boreholes. Groundwater Africa (2007) recommends a pumping rate of 84 m³/day, which would equate to 0.031 million m³/a. The existing bulk water supply system has insufficient capacity to supply the future water requirements for the fully occupied scenario, as noted in WSDP. It is important to determine the safe yield of these ground water sources in order to ensure that the growing water requirements will be met in the future. The yield from borehole 3, drilled recently, has not being determined to date. The system will be re-oversized and are over extracted resulting in damage of te aquifer. DWA have requested the Municipality's consultants to prepare a cost estimate to re-site the third borehole closer to Meiringspoort to try and access the Table Mountain Group Aquifer (TMGA)

If further groundwater resources are required in the future, the sandstone-rich Boplaas Formation to the south-west of Klaarstroom could be targeted rather than the alluvium of the Groot River because contamination from agricultural activities along the river floodplain might be present.

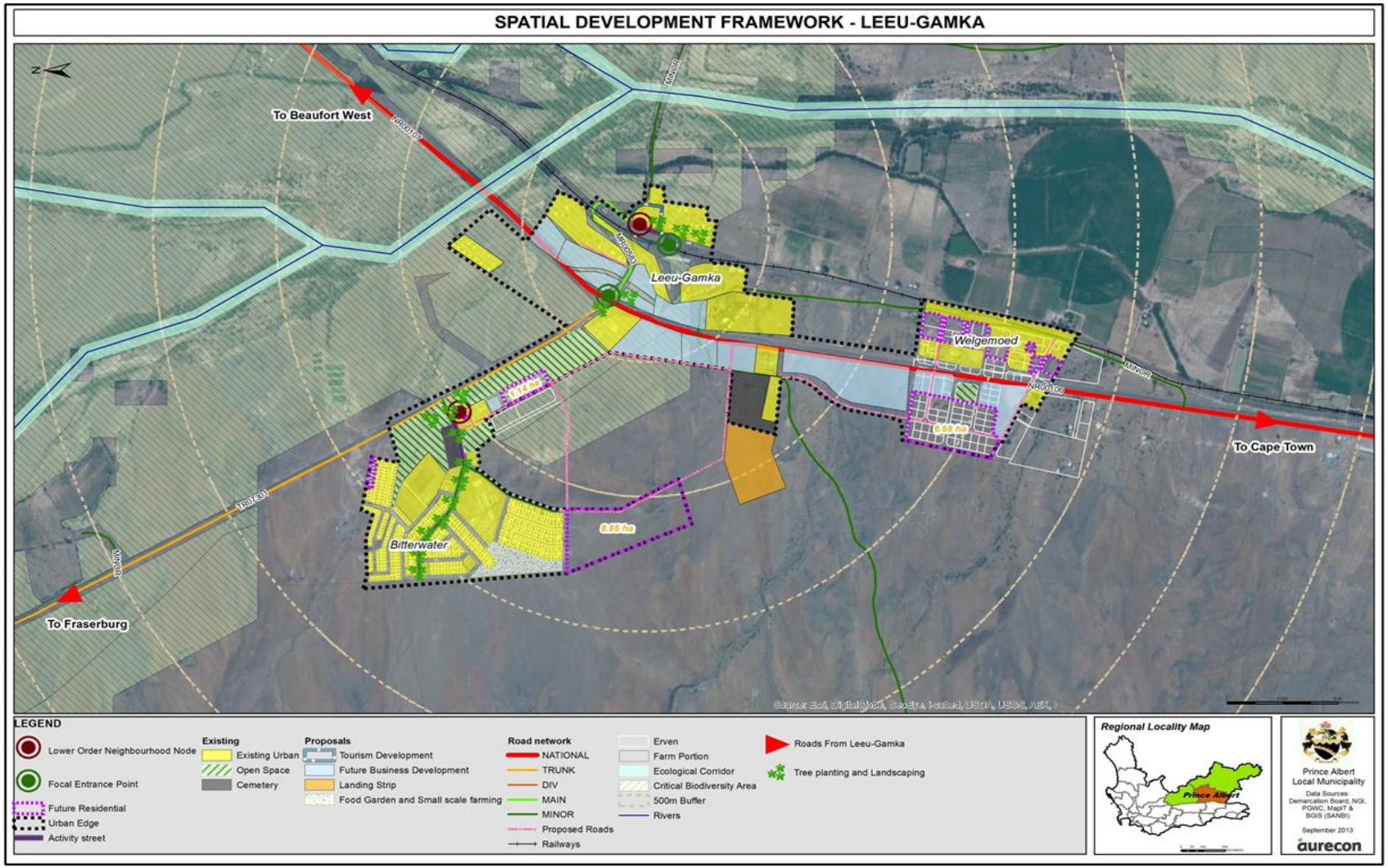
	Water Source	**Water Treatment & Storage**	**Sanitation**	**Other** (electricity, solid waste, roads & stormwater)
Description	3 Boreholes 3rd Municipal borehole drilled but not yet utilised	Klaarstroom WTW 2 reservoirs currently serving one zone just about make it for the required 48 hours storage capacity. Additional reservoir space will be essential in the near future. It is recommended that a new 500kl reservoir planned for the effluent storage for irrigation be used for potable water instead and the irrigation effluent be diverted to the old potable water reservoirs. The 500kl reservoir will cater for Klaarstroom past 2025.	Klaarstroom is entirely served by a water-borne sanitation system that drains to 2 sewage pump that drains to the Klaarstroom WWTW. The works, upgraded in 2003 makes use of oxidation ponds. Very little information available about the capacity but it is estimated in the region of 0.017 million m³/a; 47 kl/d. Consultants expect sewer flow to be closer to 75 kl/d, due to the fact that there are 140 households	

		Steel 0.2 Ml Concrete panel 0.1 Ml (roof rusted through and needs upgrading)	connected to the sewer system. No flow meters at the WWTW or sewer pump stations, hampering planning and maintenance. 25 Erven around Police Station, reticulate to septic tanks. None of these septic tanks has been serviced by the municipality in the past year.
Current Capacity	Current yield 0.031 million m³/a Current usage 0.028 million m³/a. A third Municipal borehole has been drilled but not equipped to date. Yield not yet determined.	Current capacity 0.035 million m³/annum [Inclusive of UAW] [A] Current demand 0.03 million m³/annum [Inclusive of UAW] [A]	50kl/day=design capacity [KV3 report 2008) New estimate 75 kl/d (Aurecon 2014).
Spare Capacity	Yield of 2 boreholes are 0.085 million m³/annum leaving the WTW with a shortfall of 0.052 million m³/annum. Additional borehole drilled but yield has not being determined.	No spare capacity !	No spare capacity !
Blue & Green Drop Comments		Prince Albert Municipality - Overall 21th position in Province.	Prince Albert Municipal Green Drop Score (2011) - 68.% Klaarstroom Green Drop

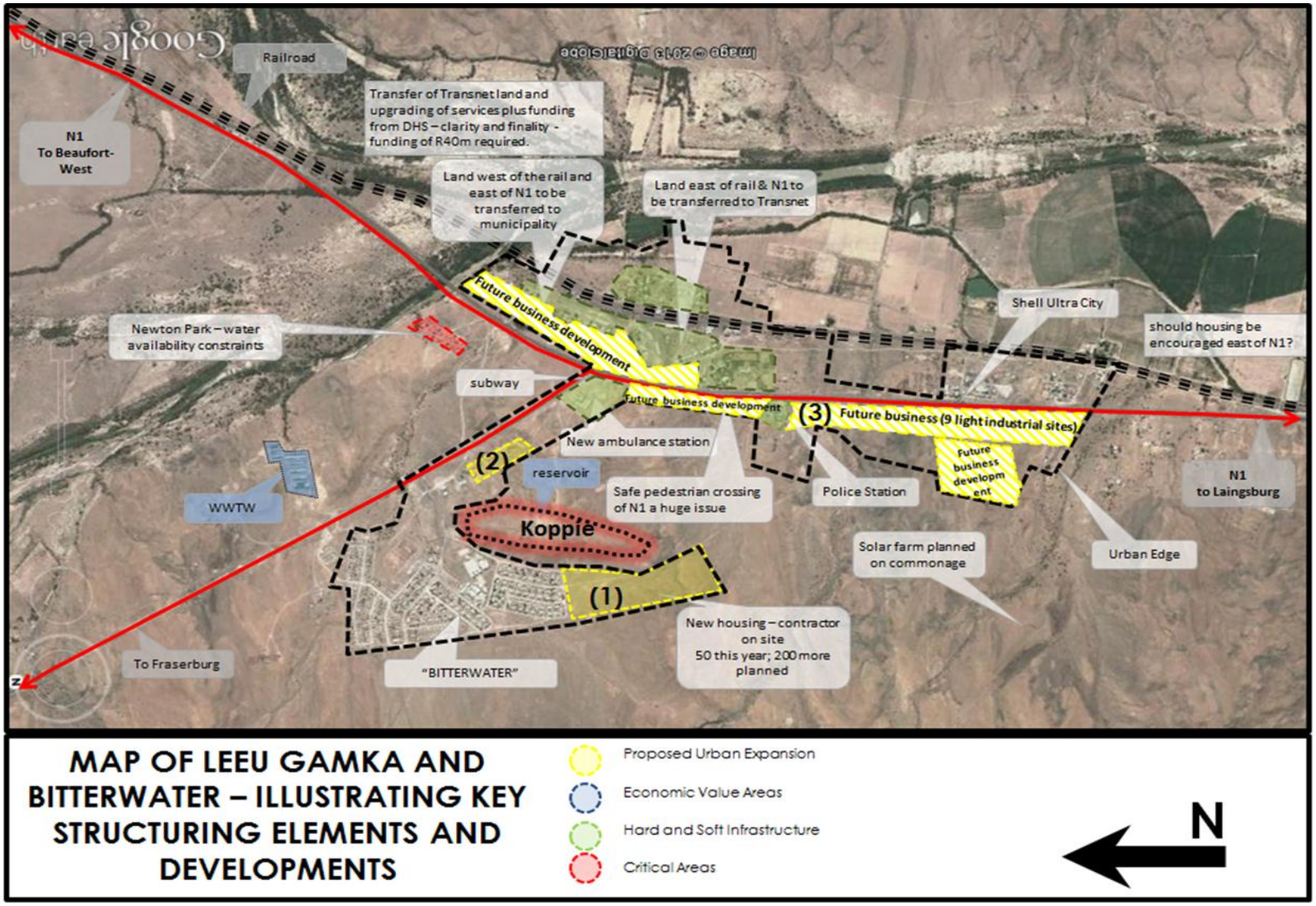
		2012 Blue drop score for Klaarstroom WTW 2010– 47.0 % 2011– 73.0 % 2012– 74.14 %	score: 2009 – 0% 2011 – 56.1 % Operating % ito capacity 67.8 % % i.t.o Maximum Risk Rating 55.6 %
Partially or Fully Funded Projects according to the 12/13 MTEF	• New water pump station R 336 736 • New borehole and pipeline R 1 711 496. • Chlorine dosing needs urgent attention. Gas system not installed according to safety regulations.	New 200 kl reservoir R 472 140	Upgrade WWTW and irrigation system for sports field. R 3 713 276.
Unfunded Projects	Development and full implementation of WCDM strategy to achieve an expected 35 % reduction in water losses.		.
Critical Replacements			
IDP			
Bulk Infrastructure Master Plan Priority Projects			
MIG			
RBIG			
Comments			
Priority Capital Projects			
Comments			

Major Risks	UAW must be addressed as a matter of extreme urgency. Over utilization of bore holes. Water table drops significantly after 2 days of pumping Another borehole has been drilled in the meantime. Yield of new borehole yet to be determined. The ideal situation will be if this borehole is used solely for domestic supply as the quality is very good and the two Mun. owned be used for irrigation and or back up for domestic supplies. Absence of local O&M skills, the boreholes should be equipped with a Global System for Mobile Communication (GSM) – based telemetry system.	WTW is in poor condition [E] Unaccounted for water (UAW) for 2007 estimated as: Prince Albert – 20% Leeu Gamka – 36.2% Klaarstroom – 61.5% Water treatment plant does not meet Blue Drop compliance requirements	WWTW is currently un-licenced. Currently no effluent is returned to source or re-used. Contingency measures currently investigated are the re-use for irrigation on the newly constructed sports field. Condition and maintenance of the 2 pump stations. No flow meters at the pump stations. Ingress of storm and ground water into pump station sump. Waste water treatment plant does not meet Green Drop compliance requirements No inlet works or flow measurements. No sediment removal. No screens for rag removal. No recirculation. Chlorine system is inadequate. Anaerobic pond is too shallow, 1.8m instead of the required 4 – 5m deep. Standby anaerobic pond needed.

8. LEEU GAMKA and BITTERWATER



The SDF for Leeu Gamka and Bitterwater (February, 2014)



A map illustrating the key infrastructural / development issues and pressures in Leeu Gamka and Bitterwater

Future Development Name	Anticipated Land use	No. of Dwelling Units	Coverage (m2 floor area)	No. of Units (base year : 2013) Residential			
				Next 5 yr's	5 - 10 yr's	> 10 yr's	Total
1	Serviced sites – residential housing	251		251			
2	Possible future residential development – long term	69		0	0	69	
3	Business Development	0		0			

Leeu Gamka and Bitterwater - Development Pressure

Overview

Leeu Gamka (including Bitterwater), with a combined population of about 2726 people, is situated along the N1 highway approximately halfway between Laingsburg and Beaufort West. Due to its accessible location along the N1, it serves as an overnight stop for people travelling between Cape Town and Gauteng, as well as a strategic location for an Ambulance Station, which serves a remote part of a high traffic area.
Leeu Gamka is an extensive sheep farming area but irrigation does occur from the nearby state-owned Leeu Gamka Dam and from ground water. Prince Albert Local Municipality is the Water Service Authority (WSA) for the area.

The settlement consists out of three areas, which are spatially separate from one another, namely Leeu Gamka, Bitterwater & Welgemoed. Both Welgemoed (a historic subdivision adjacent to the N1) and Leeu Gamka (a historic railway town) are located on the east of the N1, while Bitterwater is situated 2km north of Leeu Gamka, on the west side of the N1. This spatially segregated development form poses safety risks for pedestrians that seek to cross the N1 highway, which has very high traffic volumes.

Locationally, Leeu-Gamka is excellently positioned along the N1 highway and directly adjacent to the railway system, which provides opportunities for the settlement to access both currently and in the future, as rail travel is expected to increase over time.

Bitterwater, consisting primarily out of subsidy housing, is poorly landscaped with very few trees. The main road is tarred, however the rest of the internal roads are gravel. Both Leeu Gamka and Welgemoed also lack a proper internal road system.

The N1 that runs through Leeu Gamka and the topography of the area makes it difficult to spatially integrate Bitterwater with Leeu Gamka town and Welgemoed. However, all future development in this settlement complex should be 'inward focused' to ensure integration as far as possible.

Challenges and Potential emanating from the SDF:

Approximately 50 hectares of land is reserved for future residential development, which is far in excess of the land required to accommodate future growth for the next 20 years. The future residential development areas are prioritized to encourage the growth of Bitterwater towards Welgemoed, allow for a degree of infill development, and to promote commercial, retail, light industrial and transport-related development adjacent to the N1 highway.

Business and commercial activities should be accommodated along the activity spine and focused towards the identified lower order neighbourhood nodes, as shown in the draft SDF map for the area - above. Extensive development on both sides of the N1 should be discouraged as this could result in traffic-related dangers (i.e. people crossing the busy N1 highway).

Projects emanating from the SDF:

- The Leeu Gamka town entrance from the N1, the Leeu Gamka entrance via train and the Bitterwater entrance from the R353 lack a sense of arrival. Celebrate the entrances of Leeu Gamka through landscaping and signage in order to capitalize on the economic opportunity of being situated adjacent to the N1.
- Tree planting in Gousblom Street and landscaping at the railway station.
- Various subsidy and gap housing initiatives are planned, as per the housing pipeline (251 subsidy units, 69 gap opportunities).
- Business and commercial (transport related) activities to be promoted to the west of the N1.

	Private Residential Developments	Commercial & Government	Informal Settlements & Backyarders	Subsidised Residential Projects
Current Situation:	The extent of housing in Leeu Gamka is primarily subsidy and Transnet-owned ('railway') housing, along with a few farm homesteads. Some families still on bucket system (26).	An ambulance station, police station and a service station are present in Leeu Gamka.	Bitterwater has several backyarders.	251 subsidy units and 69 gap housing opportunities are planned for Bitterwater.
Future/Planned:		Transfer of Transnet land and assistance to the value of R40m in the pipeline; R14m for first year Solar farm planned on commonage.		In Bitterwater: 251 units of which 51 is currently under construction . The majority of housing development should not occur on both sides of the N1 due to the risk it will pose to pedestrians moving from one side to the other. Cycle lanes being sponsored.

Leeu Gamka and Bitterwater - Infrastructure

Overview:

Leeu Gamka and Bitterwater are currently supplied with groundwater from three production boreholes, which are reported to be in a poor condition, but although the abstraction is normally recorded in a probe, quality monitoring is done and the borehole water levels are normally monitored, the probes have been stolen/removed. The Klaarstroom probes have been temporarily installed at Leeu Gamka to access the current operating characteristics at the boreholes. As at the other town's over abstraction is suspected. Two boreholes ran dry in December 2013 and the third borehole pump is stuck in its casing, this despite continued assurance of strong pround water availability in the region. This tends to support the over abstraction scenario. Additional boreholes can easily be put into production. This should be done as an early indication for pre-emptive action. Transnet borehole was linked to the Municipal system in December 2013 as an immediate solution, due to the failure of the existing boreholes. The yield of this borehole has been set ar 4.5 l/s.

From 2020 annual water shortages can be expected if the medium or high-growth scenarios realised. A number of boreholes with blow yields of up to 20 to 25 l/s were recorded in the National Groundwater Data Base on surrounding farms. These should be investigated and pump tested to determine their specific hydro geological environment and sustainable yields. This information could then be used to assist in developing other high yielding boreholes, to provide groundwater when required in the future.

Newtown park and Transnet houses soon to be transferred to Prince Albert Municipality. This will result in challenges as some of the houses still have bucket sanitation and septic tanks.

MMUNICIPALITY HAS EXPERIENCED SERIOUS VANDALISM/SABOTAGE ACTIVITIES IN THE LAST 18 MONTHS. Electrical supply to boreholes have been cut, valves closed, reservoir scour valves opened, are some of the activities that have been experienced. This has resulted in the reservoir running dry approximately four times in the last year.

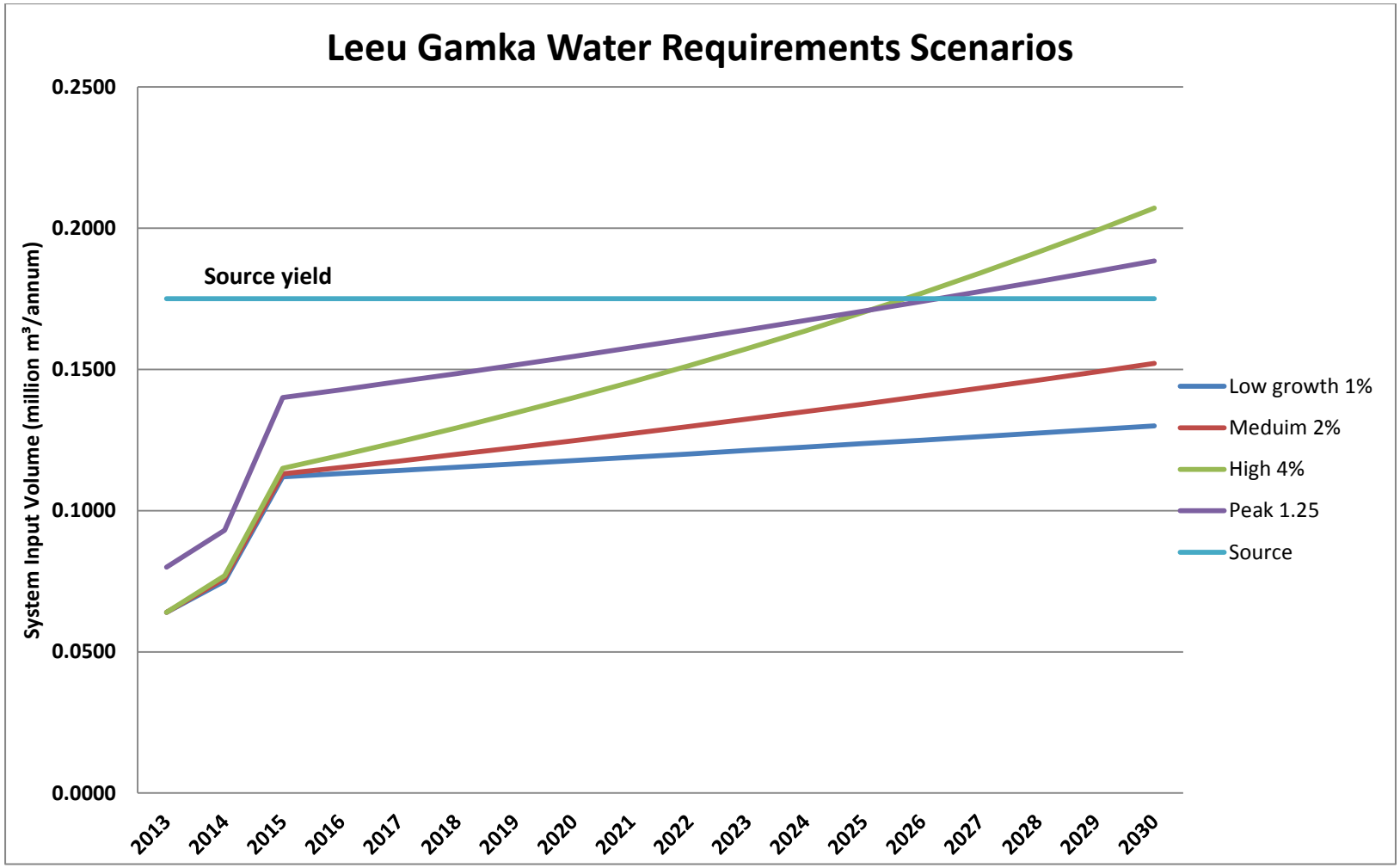
	Water Source	**Water Treatment & Storage**	**Sanitation**	**Other** (electricity, solid waste, roads, stormwater)
Description	2 boreholes . Total yield 172 kl/d (Groundwater Africa) 3 Production boreholes Registered extraction at WARMS 0.062 million m³/a	WTW; Currently 219 kl/d (0.08 million m³/a) is treated at the works. Chlorination is done at the reservoirs and thereafter it passes through an over-utilized filter	WWTW consists of: Four primary ponds(unlined) operating in parallel Four secondary ponds (unlined) operating in series. A chlorine dosing point between first and second	

			secondary ponds A recycle pump station (not operating) between first and secondary ponds. Majority of existing stands serviced by waterborne sewers draining to a single pump station. Additional houses houses at Transnet will be connected to ABS system (toilet every fifth house), draining to conservancy tanks serviced by Municipality.	
Current Capacity	Current yield 257kl/d 0.094 million m³/a (3 boreholes) One borehole a bit suspect Borehole LG 1 120 kl/d Borehole LG 2 120 kl/d Borehole LG 3 17 kl/d Total 257 kl/d Transnet borehole also connected with a yield of 240 kl/d , 0.088 million m³/a Total yield = 497 kl/d, 0.181 million m³/a	Reservoirs: Bitterwater old 0.5 Ml New reservoir 1.0 Ml Total storage **1.5 Ml** Storage capacity needed 2015 306.6 kl, 0.306.6 Ml Red book requirement 48 hours = **0.613 Ml**	WWTW Current capacity 0.271 Ml/d (Green drop 2011) Desktop review indicates a possible capacity of 300kl/day (CIP Bks 2011) Upgrading of WWTW planned for 2014/15 to go to 300 kl/d. 0.110 million m³/a Usage with all housing component as connected at 2015 to be 0.379 Ml/d. 1.038 million m³/a. Pump Station Sump storage capacity 6.5 m³ Pump capacity 15 l/s @ 15.5m head	

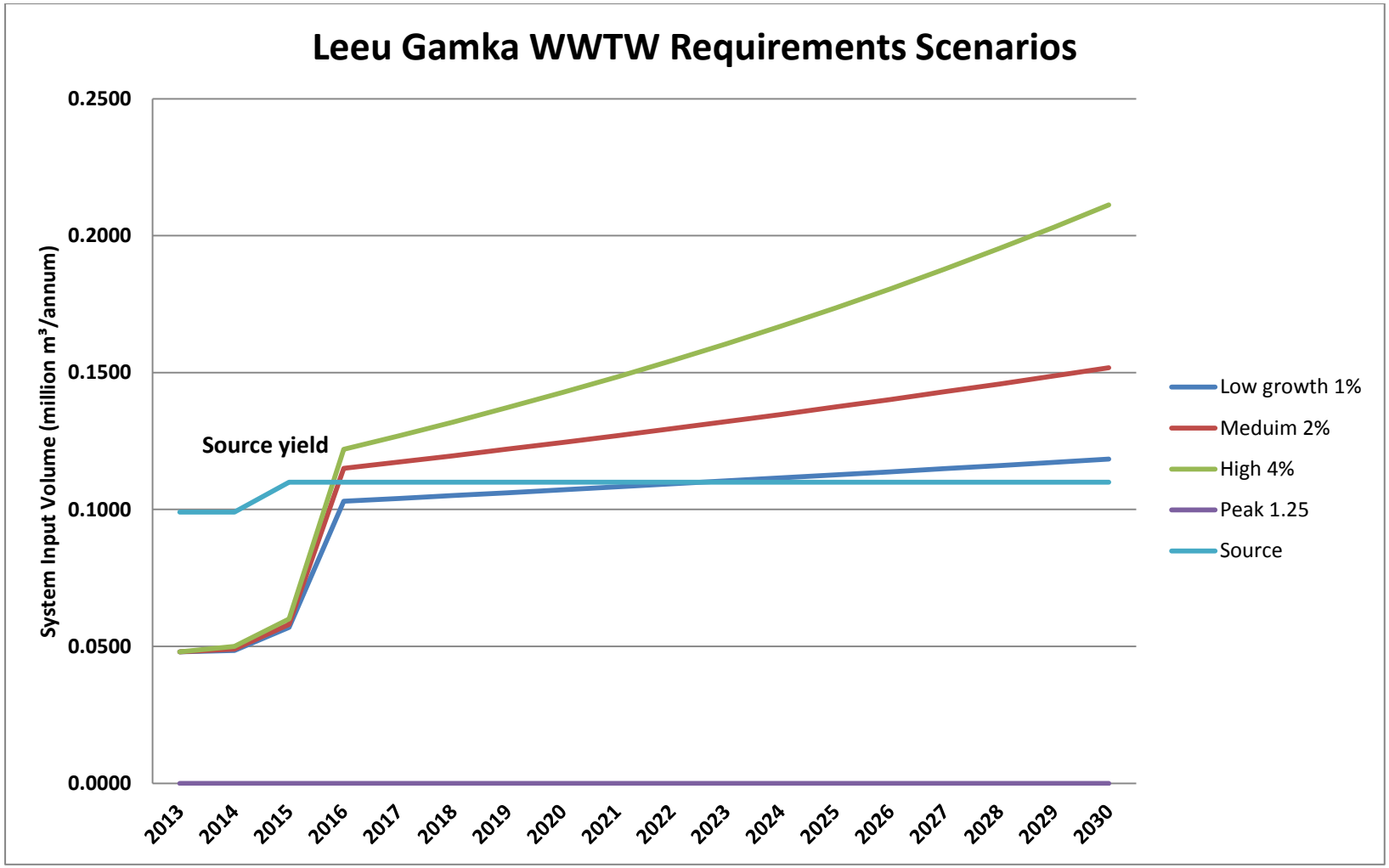
Spare Capacity	Total yield 497 kl/d Current demand AADD (2013) 176.1 kl/d, 0.064 million m³/a. (Aurecon 2013) 2014 connections Newton park(Transnet)and Transnet station area 30.1 kl/d, 0.011 million m³/a. 2015 connections. ASLA housing 100.4 kl/d, 0.037 million m³/a. Total usage as on 2015 = 306.6 kl/d, 0.112 million m³/a. Inclusive of UAW][A} Exclusive of UAW the demand will be 0.057 million m³/a. Spare capacity 190.4 kl/d @ 60 l/p/p/d/= 3173 population Take 5 per household equates to 634 houses **Reconciliation Study**: ***Demand at 2030*** ***Low Growth*** 0.083 million m³/a; 0.227 Ml/d Surplus 0.012 million m³/a ; 33 kl/d ***Medium Growth*** 0.107 million m³/a; 0.293Ml/d Shortfall 0.012 million m³/a; 33 kl/d	WTW spare capacity can only be determined once clarity has been reached on design capacity. Storage capacity needed 2015 613.12 kl, 0.613 Ml Total spare reservoir capacity 1.5 Ml – 0.613 Ml = 0.920 Ml. Storage capacity sufficient till 2020+ Census 2011 2122 Usage per capita 2013 0.176 Ml/d / 2208 persons **80** l/p/p/d 2013 2208 person 80 l/p/p/d = 177 kl/d; 0.0254 million m³/a Demand. Medium growth **2015** 0.113 million m³/a **2020** 0.1248 million m³/a **2030** 0.1521 million m³/a Actual recorded 2013 raw water figures No figures available ! Peak monthly factor for	WWTW Usage with all housing component as connected at 2015 to be 379 kl/d. 0.138 million m³/a Bitterwater (existing) 397 houses @ 500kl/d = 198 kl/d (90 l/p/p/d) Population 1985 @ 60 l/p/p/d = 119 kl/d Transnet Newton Park 26 houses. Population 130 @ 60 l/p/p/d = 8 kl/d Station area 41 houses. Population 164 @ 90 l/p/p/d = 15 kl/d ASLA(2015) 251 houses @ 500 l/hh/d = 126 kl/d Total = 268 kl/d Spare capacity 300 kl/d – 268 kl/d = 32 kl/d which will be sufficient till 2020 Sewer pump station 6.5 kl / 217 kl/d = 0.03d = 43 minutes capacity in case of power failure. Pump capacity 54 kl/h	

	High Growth 0.124 million m³/a; 0.340 Ml/d Shortfall 0.029 million m³/a; 79 kl/d	Leeu Gamka is taken at 1.25 Peak demand 2015 0.140 Ml/d 2020 0.1546 Ml/d 2030 0.1884 Ml/d Current water losses 22 % (DWA Recon Strategy 2010)		
Blue and Green Drop		Prince Albert Municipality - Overall 21th position in Province. 2012 Blue drop score for Leeu Gamka WTW 2010– 55.25 % 2011– 69.65 % 2012– 68.9 %	Prince Albert Municipal Green Drop Score (2011) - 68.% Leeu Gamka Green Drop score: 2009 – 0% 2011 – 60.1 % Operating % ito capacity 81.1 % % i.t.o Maximum Risk Rating 66.7 %	
Major risks	Determine the safe yield of the boreholes UAW must be addressed as a matter of extreme urgency During drought conditions this is the only water source. Over utilization of the boreholes resulting in poor water quality at some and also the rapidly dropping water	Drinking water quality monitoring and efficiency. Quality compliance Response to drinking water quality failures. Credibility of sample analysis. Regular submission of drinking water quality data to DWA.	No emergency overflow chamber/dam at the sewer pump station in case of power outage. WWTW currently un-licenced. Discharge from WWTW is unknown. Solar panels were stolen, through current upgrade this will be	

	tables. Vandalism occurs frequently. Borehole installations not fenced and severely vandalised.	WTW in poor condition [E] Condition of reticulation system is suspect [E] Water treatment plant does not meet Blue Drop compliance requirements	replaced with an electrical connection, allowing flow meter to operate continuously. Waste water treatment plant does not meet Green Drop compliance requirements Seepage at final pond needs urgent attention. No silt removal at inlet works. Disinfection of final effluent not effective. Sections of Newton park and Transnet areas to be transferred to PA Mun still has bucket system.	
Partially or Fully Funded Projects according to the 12/13 MTEF			New bulk sanitation (MIG) Upgrade WWTW. Bucket eradication	
Unfunded Projects				
Critical Replacements				
IDP				
Bulk Master Plan Priorities				Storm water Master Plans required for all the Prince Albert towns.

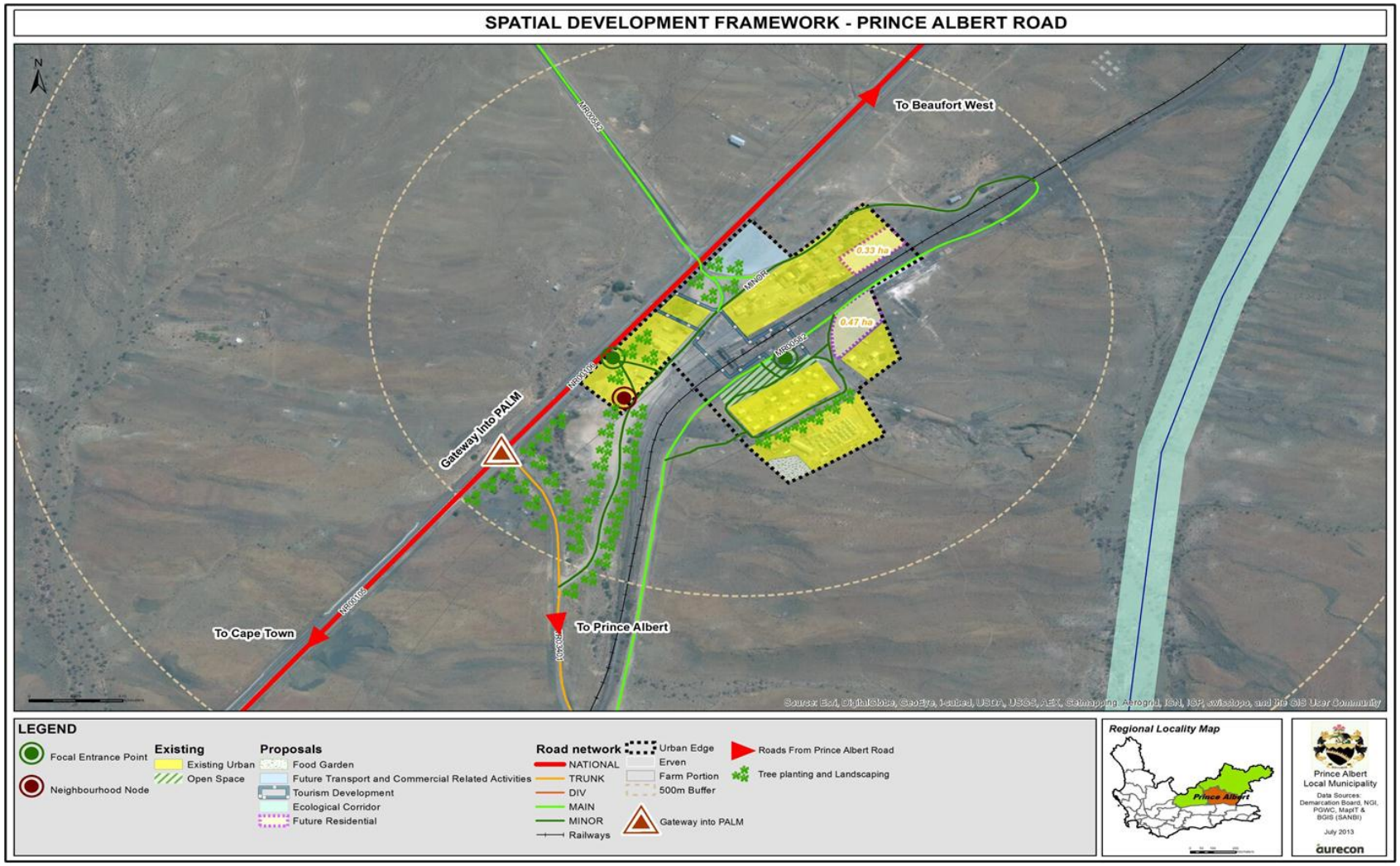


A graph illustrating Leeu Gamka's water requirement scenarios

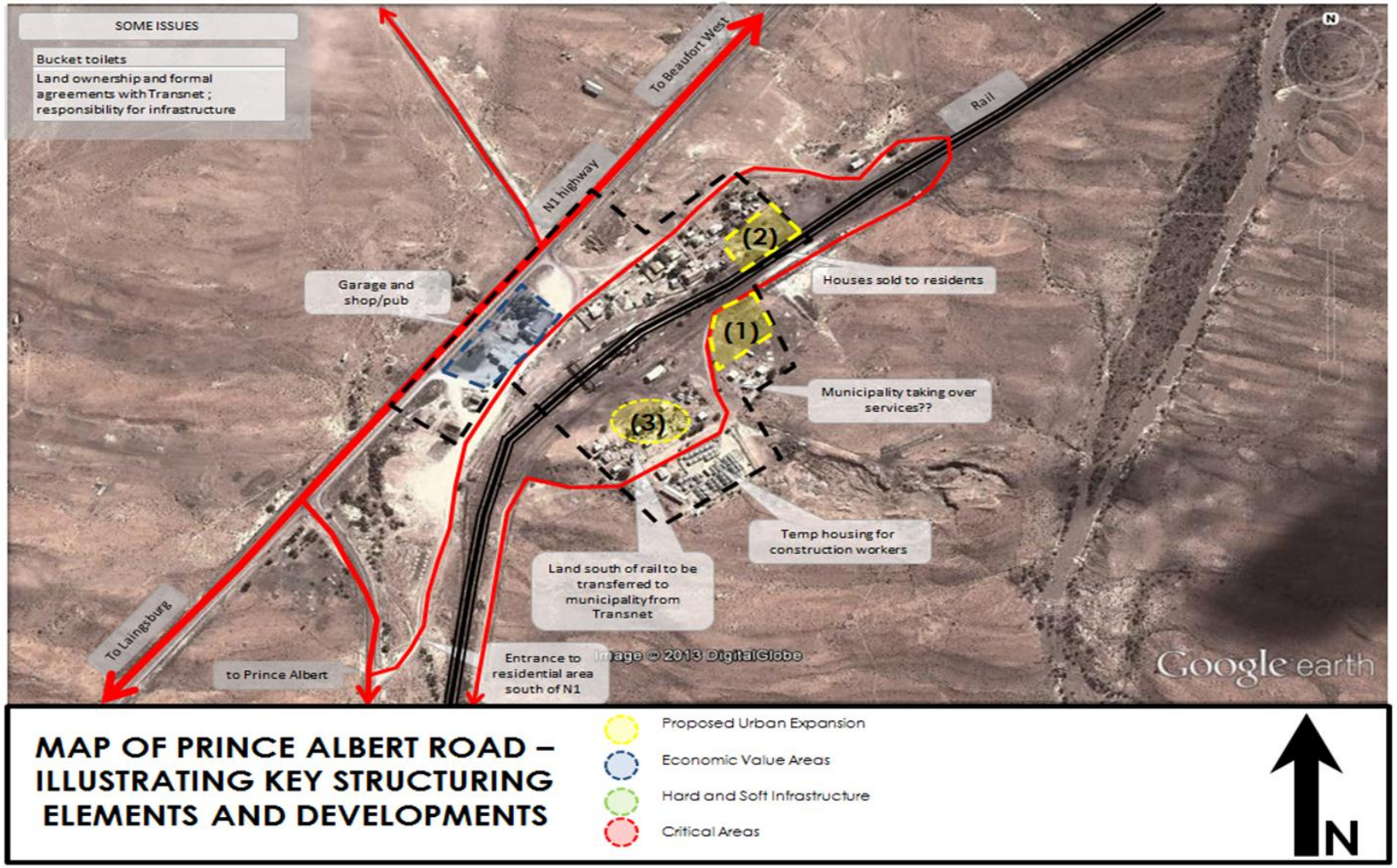


A graph illustrating Leeu Gamka's waste water treatment requirement scenarios

9. PRINCE ALBERT ROAD



The SDF for Prince Albert Road (February, 2014)



A map illustrating the key infrastructural / development issues and pressures in Prince Albert Road

Future Development Name	Anticipated Land use	No. of Dwelling Units	Coverage (m2 floor area)	No. of Units (base year : 2013) Residential			
				Next 5 yr's	5 - 10 yr's	> 10 yr's	Total
1	**Service Installation**	+-10				+-10	
2	**Service Installation**	+-10				+-10	
3	**Existing houses being serviced through UISP part of the Transnet UISP project (92 services)**	+-30		+-30			

Prince Albert Road - Development Pressure

Overview:

Prince Albert Road is a very small railway hamlet located along the N1 highway, some 85km from Laingsburg and 349 km from Cape Town, acts as the primary gateway through which to access the town of Prince Albert from the N1.

Locationally, this small settlement has access to two primary transport infrastructure routes – being the N1 and the railway routes. The settlement itself consists primarily out of gravel internal roads, a railway station and railway housing.

Challenges and Potential emanating from the SDF:

- The Prince Albert Road entrance from the N1 lacks a sense of arrival; much can be done to enhance the first impression.
- The railway system and the national road which passes through Prince Albert Road causes noise pollution.
- Although future residential development is not encouraged, a total of 0.8 hectares of land is earmarked for future development, if required.

- The areas to the south of the N1 highway, which are earmarked for light business, should be reserved for transport related commercial activities.
- Local business and commercial activities should be accommodated towards the identified lower order neighbourhood nodes.

Projects emanating from the SDF:

- The development of a railway/Anglo Boer War Museum is proposed in the area earmarked for tourism development.
- Celebrate the main entrances of Prince Albert Road through landscaping and signage in order to capitalize on the economic opportunity of being situated adjacent to the N1.
- Create a focal entrance point at the railway station though aesthetic upgrading which includes architecture and landscaping.
- Signage and landscaping at the gateway to Prince Albert, which will encourage the passing traffic to visit the town of Prince Albert. This will enable the municipality to capitalize on the economic opportunity of the national road that crosses it.
- Tree planting and landscaping of the main structuring elements of Prince Albert Road.

	Private Residential Developments	**Commercial & Government**	**Informal Settlements & Backyarders**	**Subsidised Residential Projects**
Current Situation	North of rail – houses sold to occupants.	As a very low order settlement, there are very limited retail / facility opportunities in this settlement. There is a truck stop / rudimentary filling station within the settlement.	There are no informal settlements in Prince Albert Road, bar the temporary accommodation for construction workers. Some formal housing is in very poor condition, however.	Prince Albert Road is a very low growth settlement and therefore there are no planned subsidy residential projects in this settlement.

Future / Planned	Municipality taking over the services to the houses south of the railway – previously owned by Transnet.	Weigh bridge a possibility. Also a second (high speed) rail but very long term project.	There are no informal settlements in Prince Albert Road, bar the temporary accommodation for construction workers.	Prince Albert Road is a very low growth settlement and therefore there are no planned subsidy residential projects in this settlement. A UISP project to provide 30 serviced sites to existing current housing is underway.

Prince Albert Road - Infrastructure				
Overview:				
	Water Source	**Water Treatment & Storage**	**Sanitation**	**Other** (electricity, solid waste, roads & stormwater)
Description	One borehole	No treatment of borehole water.	Sewage gravitates to a central septic tank and soak-away	Solid waste site not licensed.
Current Capacity	Unknown	Steel elevated tank (Transnet owned) Capacity unknown.	Unknown	Unknown
Blue and Green Drop				
Spare Capacity	Unknown	Unknown	Unknown	Unknown
Partially or Fully Funded Projects according to the 12/13 MTEF				Solid waste transfer station.
Unfunded Projects				
Critical Replacements				
IDP				
Bulk Master Plan Priorities				
MIG				
RBIG				
Priority Capital Projects				
Comments				
Major Risks	Yield of borehole unknown.	Quality standards of borehole water	This WWTW does not hold any permit or licence.	

	Storage capacity and condition of elevated tank.	uncontrolled.	Visual inspections pointed to an overfull septic tank and dilapidated soak-away. This is seen as unacceptable levels of services and these assets are insufficient and in urgent need of repairs/replacement./	

PART C: SUPPORTING PROJECTS

*Basic Prioritisation of **Sanitation** Infrastructure Projects for Prince Albert Municipality:*

TOWN	TIME FRAME INTERVENTION	PROPOSED SANITATION PROJECT	PRIORITY
PRINCE ALBERT	Short term	• New inlet works and anaerobic tank. Basic Repairs and maintenance: Inlet works, screens and maturation ponds. • Convert aerobic ponds to install aerators. Aeration of the aerobic ponds	High
	Medium term	• Upgrade the aerobic dams with more aerators • Possible relocation solid waste site to eliminate waste blown into WWTW or ensure timely covering of waste.	High
	Long Term	• Upgrade plant capacity to 1.5 Ml/d. Activated sludge technology in parallel with aerobic dams.	Medium
KLAARSTROOM	Short term	• Construct hydraulic grit channels at the foot of the new inlet works. • Construct new chlorine contact tank. • Apply for approval to irrigate the effluent up to a plant flow of 500 m^3/d • Construct irrigation pump station, rising main and effluent storage reservoir(200 kl)	High
	Medium term	• Aeration of maturation ponds.	Medium
	Long Term	• Additional oxidation ponds	Low
	Short term	• Construct hydraulic grit channels at the foot of the new inlet works. • Construct a 600 m^3 anaerobic tank ahead of the Primary	High

LEEU GAMKA (BITTERWATER)		Ponds. • Rectify inlet pipework at dams to discharge at the bottom of ponds • Construct new flow splitter boxes, 6.5 m³ Chlorine contact tank and 3 l/s recycle pump station. • Repair leak at final oxidation pond.	
	Medium term	• Apply for approval to irrigate the effluent up to a plant flow of 500 m³/d	Medium
	Long Term	• Aerations of maturation ponds.	Medium
PRINCE ALBERT ROAD	Short term	• Urgent repairs needed at overfull septic tank. • Construct new soak-away system. • Eradication of buckets.	High
	Medium term	• Construct new WWTW or alternatively investigate the use of package plant. • Investigate the condition of the internal and bulk sewer lines.	High

*Basic Prioritisation of **Water** Infrastructure Projects for Prince Albert Municipality:*

TOWN	TIME FRAME INTERVENTION	PROPOSED WATER PROJECT	PRIORITY
PRINCE ALBERT	Short term	• Do yield study on source. • Do active recharge of ground water system during winter months. • In-depth investigation on water rights from all users. • Purchase of Water Rights from Irrigators • Water demand management is critical in terms of using the limited water resources more efficiently. • Borehole telemetry system must be fixed to assist in proper WDM.	High
	Medium term	• Increase Raw Water Storage Capacity by looking at alternative storage dams. • Find Additional Sources of Surface Water. • All components of the WTW must be fixed so that plant can operate at its full design capacity.	High
	Long Term	• Build additional off canal dam near source	Medium
KLAARSTROOM	Short term	• Utilize all the existing boreholes effectively according to pre-determined pumping schedule • Water demand management is critical in terms of using the limited water resources more efficiently.	High
	Medium term	• Construct new reservoir to replace existing.	Medium
	Long Term	• Upgrade WTW. .	Low
		• Water demand management is critical in terms of using the limited water resources more efficiently. • Repair or provide new bulk water meters at the abstraction points, and also at outlets from reservoirs.	High

LEEU GAMKA (BITTERWATER)	Short term	• Safeguarding of all the boreholes to prevent vandalism and contamination. • Replace AC pipes from boreholes to WTW with uPVC pipes installed underground.	
	Medium term	• Investigate and implement borehole pumping schedules. • Metering of all consumers as well as bulk metering to do proper WDM. Transnet transferred properties. • Determine yield of Transnet boreholes. • Investigate the condition of the elevated water storage tank. • Investigate the condition of the internal and bulk supply lines.	Medium
	Long Term	• Investigate re-use of effluent for potable water as well as irrigation of sports fields.	Medium
PRINCE ALBERT ROAD	Short term	• Determine yield of borehole. • Investigate the condition of the elevated water storage tank. Replace. • Investigate the condition of the internal and bulk supply lines.	High
	Medium term	• Metering of all consumers as well as bulk metering to do proper WDM.	High

10. Identified Development related Infrastructure Projects

			Infrastructure investment ('000)						
Project name	Development alignment/supported	Status	Project Value	Funding source				2013/14	2014/15
				Grant (MIG, RBIG, ACIP)	Capital Replacement Reserve (40% of own capital budget) CRR	Loan	Capital contribution		
Water Infrastructure									
New water pump station	Klaarstroom	Pre Imp	337	233 (MIG)					233 2015 →
New 200 kl reservoir	Klaarstroom	Constr	472	331(MIG)				325	6
New borehole and pipeline	Klaarstroom	Constr	1 711	1 501 (MIG)				617	884
Upgrade WTW	Leeu Gamka	Constr	154	135 (MIG)				135	2015 →
Water	Prince	Constr	1 710	1 197				1 197	

	Albert								
Upgrade reservoir	Prince Albert	Pre Imp	9 849	9 849 (MIG)					9 849
Sewer Infrastructure									
New Waste Water Treatment Works	Klaarstroom	Pre Imp	1 558	1 093 (MIG)				278	2015 →
Upgrade WWTS Effluent Ph 2 & Irrigation system	Klaarstroom	Pre Imp	3 713	3 713 (RBIG)					2015 →
Upgrade sewer pump station	Klaarstroom	Constr	993 168	871 (MIG)	2 997			821	50
New bulk sanitation infrastructure	Leeu Gamka	Constr	6 216	5 388 (MIG)				4 411	976
Upgrade WWTW	Prince Albert	Pre Imp	8 978	6 190					2 700
Upgrade WWTW, relining of ponds (budget maintenance)	Prince Albert	Constr	488	348				305	43
New bulk sanitation infrastructure	Leeu Gamka	DPIP	1 243	1 983					
Roads/storm water									
New access road	Prince Albert	Constr	7 687	5 545 (MIG)				5 508	37

Upgrade stormwater system	**Leeu Gamka**	**Constr**	**3 563**	**2 656**				**180**	**2 477 2016 →**
Upgrade stormwater system	**Prince Albert (Noord eind)**	**Constr**	**3 563**	**2 656**				**212**	**2 373 2016 →**
Electricity									

The projects below are those that have already been identified and costed and where funding sources has been identified. In order to create a comprehensive consolidated table, it will be necessary to work through the BITT list above as well to consider the gaps identified per town. Please note that the list below is subject to change as Prince Albert has identified new projects recently for MIG assessment.

11 Major Issues Requiring Further Investigation

This section is aimed at listing those issues that might have fundamental impacts on the planning and scheduling of major projects. An example is when uncertainty exists regarding the locality of a large housing project; an uncertainty that will place required processes (such as land acquisition, EIA approval and infrastructure planning) in jeopardy. Other issues to be listed here are major studies that need to be undertaken, but which do not involve major capital expenditure and are not directly linked to specific capital projects.

Town	Type e.g. Water	Issue Description	Proposed Action	Responsible agents
Prince Albert	Water	-Rehabilitation of the existing telemetry system for the 9 boreholes. Extension of this system to include all	Do proper analysis into the existing system into reasons for consistent	Mun, Specialised service provider

		water related structures in the Municipal area.	system failure. Investigate more durable and sustainable system.	
	Water	Water demand management and UAW(unaccounted for water) to be brought to national guidelines		
	Water+ sanitation	Compilation and implementation of Industrial effluent by-laws to include restaurants and guest houses	By-laws to be compiled, advertised, gazetted as soon as possible.	Mun, Specialised service provider
	Sanitation	Development contributions by private developers. Water borne sewage system for the rest of Prince Albert	Do preliminary planning and costing. Seek alternative funding methods (External Loans)	Mun, Specialised service provider
	Solid Waste	Municipality to sign the Service level agreement with Central Karoo DM to get a solid waste management plan	Service level agreement to be signed at the earliest. Legalize the solid waste site as soon as possible and implement the management plan Appoint suitably qualified personnel to manage the solid waste site. Move solid waste site to position north of WWTW	Mun, DEA&DP, Central Karoo DM
Klaarstroom	Water	Investigate water rights of all users.	Appoint a suitably	Mun, Specialised

		Licensed water allocation.	qualified water engineer as soon as possible to do the study.	service provider
	Water	Water demand management and UAW(unaccounted for water) to be brought to national guidelines	Appoint suitably qualified Professional Service provider	
Leeu Gamka (Bitterwater)	Water	Water demand management and UAW(unaccounted for water) to be brought to national guidelines	Appoint suitably qualified Professional Service provider	
Prince Albert road	Sanitation	Urgent upgrading of the WWTW		
Other Areas (rural, farms)				
All Areas/Head Office	Blue and Green drop. Prince Albert	Compile the following. • Water safety plan • Waste water abatement plan • Operation and Maintenance manuals • Process audits	Gather information and compile the plans as soon as possible	Professional Service Provider, Mun. officials, DWA

PART D: Financial Analysis

12.0 Purpose of this Chapter

The purpose of this chapter is to:

- Assess the current financial situation of the Municipality;
- Assess the ability of the Municipality to raise a loan;
- Assess the current financial situation with regards to engineering services of the municipality
- Assess the profile of the total municipal invoices (including all services and property rates), number of invoices in ranges of amounts;
- Assess the current services tariffs of the Municipality;
- Conclusion.

12.1 References

The following available literature and interactions have been used:

- IDP;
- Prince Albert Municipality's Water Balance for the 12 months ending June 2013 as compiled by DWA ;
- Annual financial statements.
- Interactions with the Municipality.

12.2 Context: Demographics & Social Economic Profile

The population numbers during the two censuses are shown below:

Population	2001 Census	2011 census
Total Population	10512	13137
Number of households	2696	3649

Poverty levels

Number of people accessing social grants (2007) - 2165 (approx. 16.5%)
Number of indigent households (2009/10) - 4 515 (approx. 18%)

Household income levels	2011
Annual income: R38 201 – R76 400	35%

There was an in migration of poorer households in the Municipality. The households growth with an annual income of R38201 to R76 400 from 35% (2011) to 38.1 % (2025) is forecasted. .

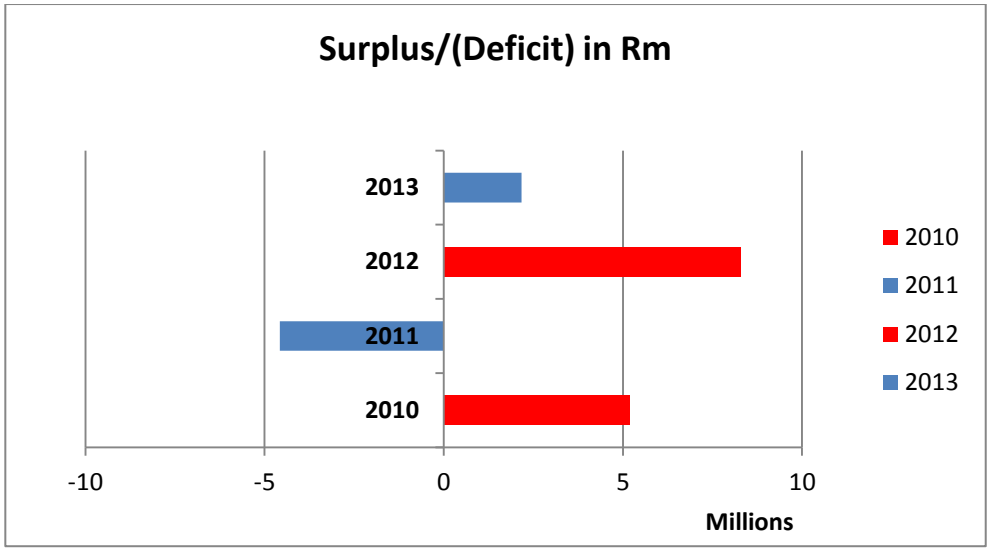
Unemployment rate (%)	2001	2007	2011
Male		18.5	
Female		37.9	
Total		56.4	

The unemployment rate of Prince Albert of 20.7% is higher than other similar municipalities.

12.3 Assessment: Current financial situation

In order to assess the current financial situation of the Municipality, the following net surplus/deficit of the Municipality over the past 4 years was considered and was extracted from the Annual Financial Statements:

Financial year	2010	2011	2012	2013
Surplus/(Deficit) for the year (R)	5 190 122	(4 572 060)	8 282 535	2 172 567



Except for 2011, a consistent annual surplus is added to the accumulated total surplus which is the source of accumulatating assets of the Municipality. The positive trend is good, it indicates that the Municipality as a business entity is viable and sustainable in the current economy and that profitability is good in the context of the municipal market.

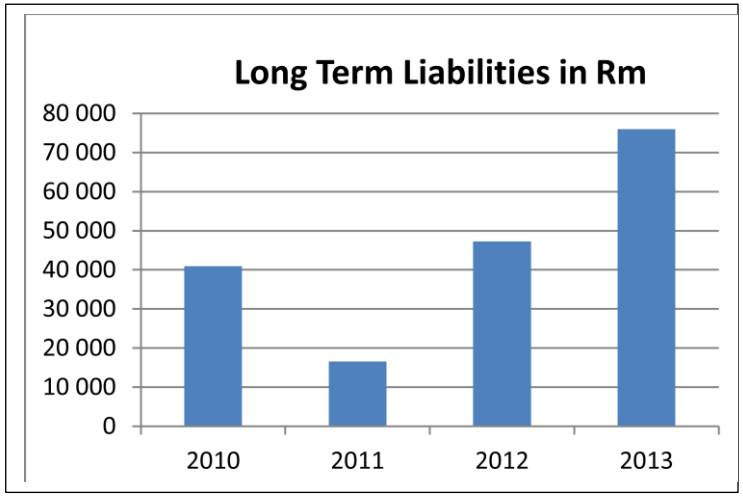
Surpluses per annum have decreased considerably from R8.28m in 2012 to R2.17m in 2013. Also noted is the dramatic recovery from the deficit of R4.57m in 2011 to a surplus of R 8.28m in 2012.

The one year (out of 4 years) showing a deficit is interpreted as negative.

12.4 Medium to long term liabilities

The Municipality had the following long term liabilities over the past 4 years:

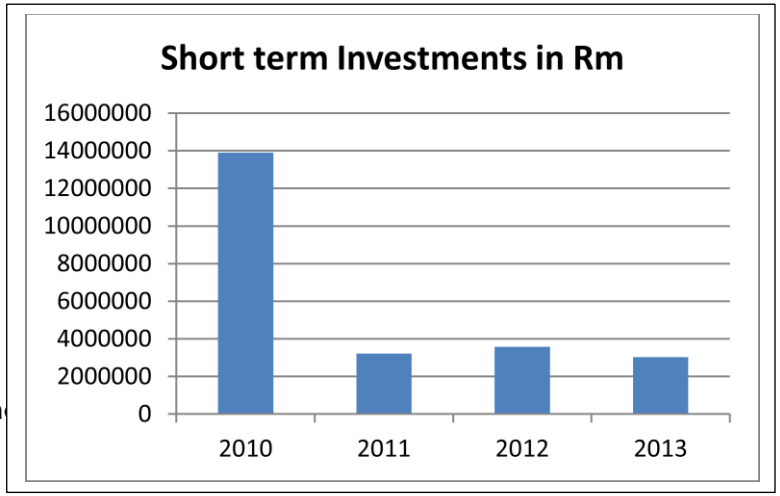
Year	Amount
2010	R40 918
2011	R16 574
2012	R47 222
2013	R75 939



12.5 Short term investments (Total cash & cash equivalents)

The Municipality had the following short term investments (Total cash & cash equivalents) over the past 4 years:

Year	Amount
2010	R 13 904 368
2011	3 217 146
2012	3 573 534
2013	3 021 374



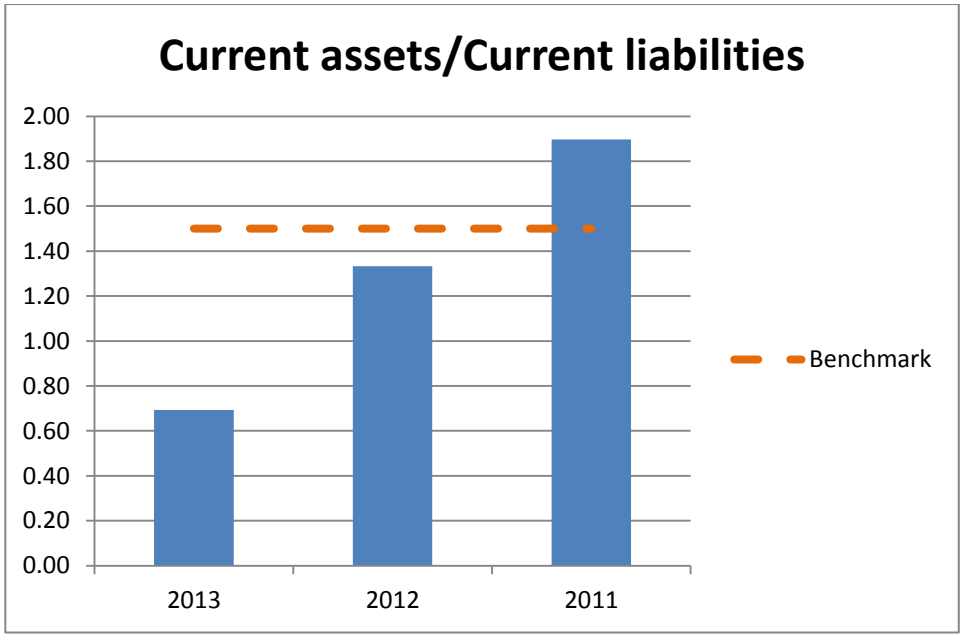
Apart from 2010, the above table sh

12.6 Ratios

The following key ratios, considered by financial institutions, are indicative of the financial health of the Municipality:

12.6.1 Current ratio (Current assets/Current liabilities)

Year, benchmark & comment	2013	2012	2011	Benchmark	Comment
Current ratio (Rm/Rm)	6362693/9177158 = 0.69	8072413/6059563 = 1.33	8176023/4309349 = 1.90	1.5	



The ratio is mainly used to give an indication of a Municipality's ability to pay back its short-term liabilities (including debt and payables) with its short-term assets (cash, inventory, receivables). The higher the current ratio, the more capable the company is of paying its obligations. A current ratio under 1 suggests that the company would be unable to pay off its obligations if they came due at that point.

The current ratios, as shown in the above table, show a decreasing trend which is currently below the benchmark of 1.5. Therefor the Municipality has a low liquidity and has to carry the risk of not being able to pay its liabilities and poses financial challenges for Prince Albert Municipality. The risk is low however, because as an organisation, the Municipality would probably not have to physically pay back all the current assets in a short space of time. It remains an indication of risk however.

12.6.2 Operational ratios

Year, benchmark & comment	2013	2012	2011	Benchmark	Comment
Accumulated surplus as % of operating income	162.70	146.79%	164.30%	>0%	Very Good
Operating results: surplus/deficit	R2 172 567	R8 283 535	(R 4 572 060)	>0	Average

The above indicates that the operating results of the Municipality are acceptable and consistent in relation to their reserves and material variations are unlikely. The operating surplus/deficit over the last 3 years is seen as average but under control.

12.6.3Leverage ratio

Year, benchmark & comment	2013	2012	2011	Benchmark	Comment
Loan debt as % of total operating income	0	0	0	N/A	

12.6.4Debt (Total Borrowings)/ Total Operating Revenue

N/A	
Ratio	
Comment	

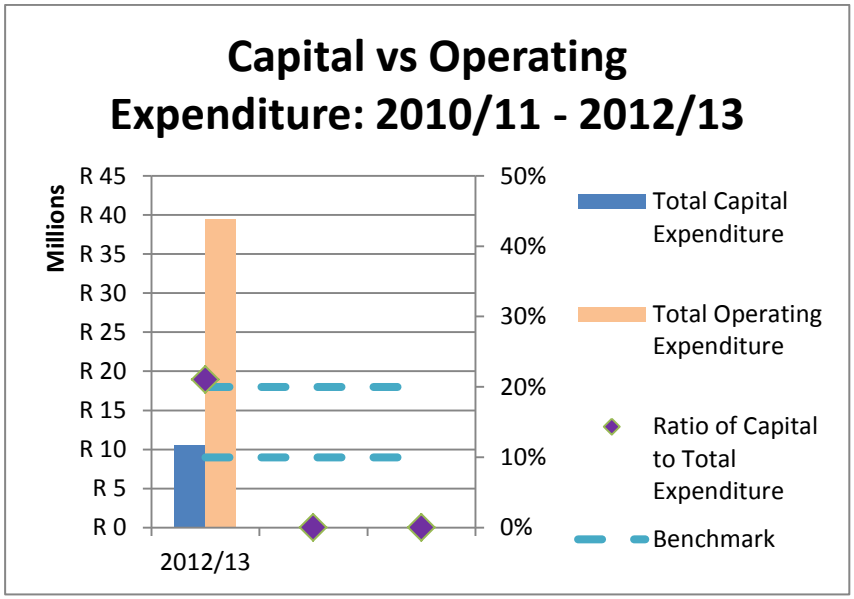
[1] Debt = (Short Term Borrowing + Bank Overdraft + Short Term Lease + Long Term Borrowing + Long Term Lease) / Total Operating Revenue - Operating Conditional Grant.

The ratio of debt as a % of net income is slightly higher than the norm of **45%** and further borrowings should be carefully assessed, however, this should be considered within the cash flow requirements of the Municipality (which is in a fairly healthy at present).

12.6.4Capital Expenditure to Total Expenditure

Formula
Total Capital Expenditure / Total Expenditure (Total Operating Expenditure + Capital Expenditure) × 100

Total Expenditure:	50 052 063
Total Operating Expenditure	39 517 124
Total Capital Expenditure	10 534 939
Ratio	21.04%
Comment	GOOD



Norm

The norm range is between 10% and 20%.

The capital expenditure in relation to the operating expenditure is very close to the acceptable norm of between 10% and 20%. As a general remark there should be a move to capital expenditure which will ensure income to the Municipality and not unnecessary expenditure such as low-cost housing (and the accompanying bulk infrastructure) which could lead to unsustainability. Grant funding should be stretched to the maximum to relieve the unnecessary burden on the municipality. A healthy balance should be sought between economic (revenue generating) and social type infrastructure.

It is also critical that capital expenditure is largely directed toward service delivery infrastructure and not administrative assets.

12.6.5Own Funded Capital Expenditure (Internally Generated Funds + Borrowings) to Total Capital Expenditure

Purpose/ Use of the Ratio

The Ratio measures the extent to which the municipality's Total Capital Expenditure is funded through Internally Generated Funds and Borrowings.

Formula

Own Funded Capital Expenditure (Internally Generated Funds + Borrowings) / Total Capital Expenditure x 100.

Own Funded Capital Expenditure **(14,977,889.30 + 26149978.08)**	**0**
Total Capital Expenditure	**10 534 939**
Ratio	**0%**

Norm

No norm is proposed at this time. It is critical that the funding mix of capital expenditure is undertaken in such a manner that affordable borrowing is directed towards addressing service delivery needs and that there is also opportunity for increased capacity on internally generated funding to attain an improved balance of the funding sources.

3. Own Funded Capital Expenditure (Internally Generated Funds) to Total Capital Expenditure

Purpose/ Use of the Ratio

The Ratio measures the extent to which Total Capital Expenditure of the Municipality is funded through Internally Generated Funds.

Formula

Own funded Capital Expenditure (Internally Generated Funds) / Total Capital Expenditure x 100.

Own Funded Capital Expenditure	0
Total Capital Expenditure	**10 534 939**
Ratio	**0%**

Norm

No norm is proposed at this time. The funding mix for capital expenditure is dependent on the municipal policy and ability to raise revenue from different sources. Increased capacity for internally generated funding is required in some circumstances, which could also improve the balance in funding sources.

12.7 Assessment of the current situation with regards to engineering services (Water, sanitation, roads and solid waste)

12.7.1 Financial performance simulation

The financial performance of the engineering services (water, wastewater, solid waste & electricity) is as follows for the 2012/13 financial year:

	Water	Wastewater	Solid waste	Electricity
Operating Revenue (Total in Rand)	**R 3 448 621.78**	**R 1 599 417.74**	**R 1 419 046.10**	**R 9 624 088.89**
Service charges	2 835 569.32	1 488 151.85	1 327 165.83	8 907 571.49
Equitable share	1 300 000.00	720 000.00	500 000.00	1 025 000.00
Other revenue	0.00	0.00	399.53	0.00
Less revenue foregone	-686 947.54	-608 734.11	-408 519.26	-308 482.60
Operating Expenditure (Total)	**R 2 179 756.98**	**R 1 400 596.94**	**R 1 773 510.34**	**R 10 215 721.84**
Employee related costs (Wages & salaries)	415 723.24	394 606.04	560 524.97	35 381.72
Employee related costs (Social contributions)	44 122.37	39 768.68	101 467.38	223.70
Less operating costs allocated to other operating items	0.00	0.00	0.00	0.00
Debt impairment	1 006 564.67	657 146.87	527 293.97	448 017.47
Depreciation and asset impairment	48 968.47	24 484.23	68 691.00	22 953.97
Interest expenses (On external borrowings)	0.00	0.00	0.00	8 094 812.38
Other materials	480 678.10	211 491.12	446 833.02	778 232.60
Other expenditure	0.00	0.00	0.00	0.00
Loss on exposure of property, plant & equipment	0.00	0.00	0.00	0.00
Contributions to/from provisions	0.00	0.00	0.00	0.00
Internal charges (Activity based costing)	R 183 700.00	R 73 100.00	R 68 700.00	R 836 100.00
Operating Surplus/(Deficit) (Total revenue less total expenditure)	**R 1 268 864.84**	**R 198 820.80**	**(R 354 464.24)**	**R 591 632.95**

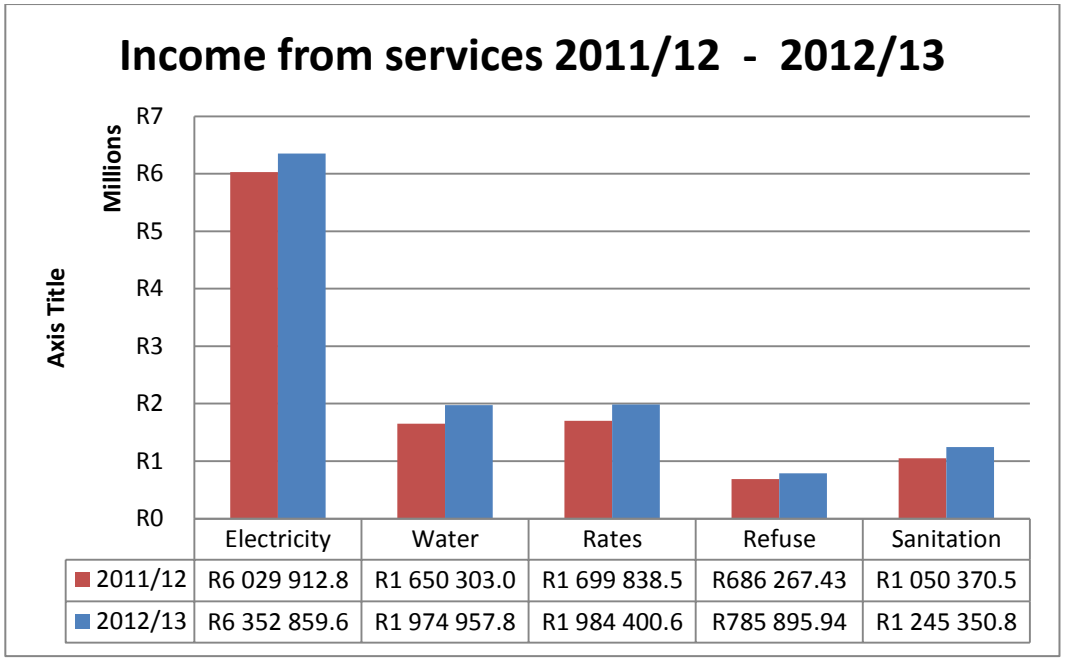
It is noted from the above table that the income generated from electricity is far lower than the norn in other Municipalities but that can contributed to the fact that ESKOM do most of the supply in Leeu Gamka, Klaarstroom. Also against the norn is the deficit in the solid waste department.

12.7.2Billing practices

The following information was received from the municipality:

	2012/13		
	Billing	**Income**	**Payment ratio**
Electricity	R 6 405 304.00	R6 352 859.65	99.18%
Water	R 3 183 184.57	R 1 974 957.85	62.04%
Rates	R 2 043 845.36	R 1 984 400.67	97.09%
Refuse	R 1 535 126.67	R 785 895.94	51.19%
Sanitation	R 2 304 639.97	R 1 245 350.88	54.03%
Total	**R 15 472 100.57**	**R 12 434 464.99**	**79.77%**

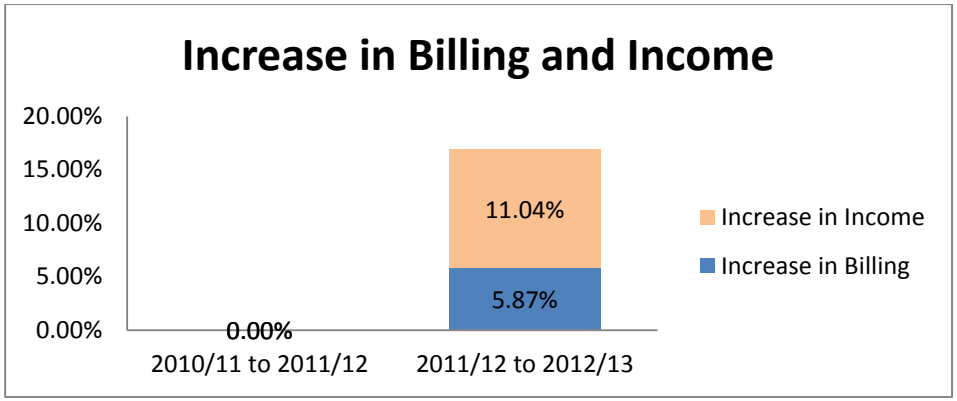
	2011/12		
	Billing	**Income**	**Payment ratio**
Electricity	R 6 047 535.39	R6 029 912.85	99.70%
Water	R 2 797 876.31	R 1 650 303.00	58.98%
Rates	R 2 424 235.21	R 1 699 838.53	70.01%
Refuse	R 1 338 255.25	R 686 267.43	51.28%
Sanitation	R 2 006 361.68	R 1 050 370.58	52.35%
Total	**R 14 614 263.84**	**R 11 116 692.39**	**76.06%**



The collection ratios are very good in comparison to other municipalities in the country.

The following table shows the % increase in billing rates and income over the last three years:

Years	**Billing**	**Income**
2010/11 to 2011/12	N/A	N/A
2011/12 to 2012/13	5.8%	11.85%



Both the billing rates and income were considerably higher than the inflation rate which shows a growth in the income as a very good business achievement over the last three years.

12.7.3 Assessment of the profile of the total municipal invoice

The billing practices were further assessed and the following noted:

	Total consumers on billing system	Estimated number of households (Census 2011)	% of households being billed
Electricity	2175	2666	81.85%
Water	2305	2666	86.45%
Rates	2305	2666	86.45%
Refuse	2305	2666	86.45%
Sanitation	2305	2666	86.45%

The above indicates the number of households being billed per service in relation to the total estimated households in the community.

The above is not conclusive as such as it needs to be seen in relation to the actual backlog per service being provided. What is however evident is that the above needs serious attention and it appears that there is a significant number of households that are not being billed for services.

12.8 Assessment of Non-Revenue Water

12 Months ending	2011- 2013			
	System input (kl)	Revenue (kl)	Non-revenue (kl)	% Non-revenue
30 June 2011				47.1%
30 June 2012				21.4%
30 June 2013	15 434 249	11 893 839	3 540 409	22.94%

Non-revenue water has been reduced over the last two years but can still be brought down to an acceptable level of under 18%.

12.9 Electricity Distribution Losses (Percentage)

The last official accounted for Electricity losses was recorded in 2010/11. The actual (Number of Electricity Units Purchased and / or Generated - Number of Electricity Units Sold) / Number of Electricity Units Purchased and / or Generated) × 100 is **18.16%** and falls outside the norm of **7% to 10%.** This depicts that electricity losses are not well managed. The Ratio exceeds the norm that could indicate various challenges, for example, deteriorating electricity infrastructure or poor management of the networks, affecting the Municipality or Municipal Entity, which would require further analysis to determine the reasons for such losses. In addition, the root causes should be addressed.

12.10 Conclusion

- Surpluses per annum have decreased considerably from R8.28m in 2012 to R2.17m in 2013. Also noted is the dramatic recovery from the deficit of R 4.57 in 2011 to a surplus of R 8.28 in 2012.
- Medium and Long term liabilities have risen considerably over the last 4 years. This financial position weakens the Municipality's ability to borrow additional funding.
- Short term investments decreased dramatically from 2010 R 13.9 m to R 3.22 m in 2011 but settled to a slight decrease annually.
- The capital expenditure in relation to operating expenditure is very close to the acceptable norm of between 10% and 20%. As a general remark there should be a move to capital expenditure which will ensure income to the Municipality and not unnecessary expenditure such as low-cost housing (and the accompanying bulk infrastructure) which could lead to unsustainability. Grant funding should be stretched to the maximum to relieve the unnecessary burden on the municipality. A healthy balance should be sought between economic (revenue generating) and social type infrastructure.
- It is also critical that capital expenditure is largely directed toward service delivery infrastructure and not administrative assets.
- The payment ratios for services are acceptable for electricity and rates showing notable rise in percentages from 2011/12 to 2012/2013. Special and urgent attention must be given in the water, refuse and sanitation. Note the increase of collection from 76.06% in 2011/12 to 79.77% in 2012/13.
- The Non-revenue-water (NRW) has remained in excess of 20% over the last few years and should get urgent attention. The NRW should be improved to at least 18%.
- The average unit selling rate of between R3.27 per kl (0-6kl) and R6.54 per kl (31-50 kl) for water in Prince Albert is on far below the norm in other municipalities in the Western Cape.
- Electricity losses are within acceptable norms;
- It is noted from the above table that the income generated from electricity is far lower than the norn in other Municipalities but that can contributed to the fact that ESKOM do most of the supply in Leeu Gamka, Klaarstroom. Also against the norn is the deficit in the solid waste department. This must be addressed at the soonest to ensure that the services are ringfenced as far as possible.

PART E: Infrastructure Investment Plan

PRINCE ALBERT MUNICIPALITY: CAPITAL BUDGET 2014/15; 2015/16; 2016/17

DEVISION	TOWN	DESCRIPTION	Adjustment Budget 2013/14	Funding Source	Priority	Budget 2014/15	Funding Source	Priority	Budget 2015/16	Funding Source	Priority	Budget 2016/17	Funding Source	Budget 2017+	Funding Source
Housing	LG	Housing		beh		10 000 000	beh		8 702 000	mig					
Roads	PA	Prince Albert. New Access roads	750 000	mig	1	50 000	mig	1		mig	1		mig		mig
Stormwater Management	PA	Prince Albert. Upgrade stormwater system	800 000	mig	1	50 000	mig	2		mig	1		mig	2 372 473	mig
Stormwater Management	LG	Leeu Gamka. Upgrade stormwater system	800 000	mig	2	50 000	mig	2		mig	1		mig	2 476 662	mig
Roads	PA	Prince Albert. Upgrade sidewalks		mig		500 000	mig	2	2 000 000	mig		3 961 839	mig		mig
Roads	LG	Leeu Gamka. Upgrade sidewalks	0	mig	3	500 000	mig	2	1 500 000	mig	2	2 186 351	mig		mig
Roads	KS	Klaarstroom. Upgrade sidewalks		mig		500 000	mig	1	462 237	mig	1		mig		mig
Sewage	LG	Leeu Gamka: Upgrade WWTW		mig										1 000 000	
Sewerage	PA	Prince Albert. Upgrade WWTW.	726 324	mig	1	2 000 000	mig	2		mig	1		mig	3 428 476	mig
Sewerage	KS	Klaarstroom: New irrigation system	1 500 276	mig	1	0	mig	2	2 413 000	mig	1		mig		mig
Sewerage	KS	Klaarstroom: New WWTW		mig	1	750 523	mig	1		mig	1		mig	4 000 000	mig

Sewerage	KS	Klaarstroom: New Bulk Sanitation.	0	mig	2	50 000	mig	1		mig			mig		mig
Water	PA	Prince Albert.Rehabilitation of borehole telemetry system							500 000	Crr/ el					
Water	PA	Prince Albert. New Reservoir.	2 042 150	mig	1	2 894 335	mig	1		mig	1	3 318 000	mig		mig
Water	KS	Klaarstroom. New borehole	250 000	mig	3	50 000	mig	2		mig			mig		
Water	PA	Prince Albert. Replacement of valves and hydrants	1 369 000	acip	1										
Water	KS	Klaarstroom: New 200 kl reservoir							234008	mig		5 529	mig	1 000 000	mig
Water	PA	Prince Albert. Upgrade WTW										500 000	Crr/ el	2 000 000	mig
Water	KS	Klaarstroom. New water pumpstation							2 320 614	mig					
Water	PA	Prince Albert. Replacement of bulk water meters	516 000	acip	1										
Sport facilities and swimming pools	PA	Prince Albert. Upgrade stormwater system	800 000	mig	1	228 670	mig	2	419 992	mig	1	364 460	mig		mig
Sport facilities	KS	Klaarstroom. Upgrade Sportsfield, Ablution.	1 444 076	mig				1		mig					
Sport facilities	LG	Leeu Gamka. Upgrade Sportsfield, Ablution.		mig				1	400 000	mig		598 401	mig		
Sport facilities	PA	Noord Eind. New Sportsfield, Ablution.		mig				1	1 300 000	mig		2 822 642	mig		
Solid Waste	PA	Prince Albert.	0	mig	1	50 000	mig			mig				1 176 112	mig

		Rehabilitate solid waste site.													
Electricity															
		Totals per Financial Year	**10 153 750**			**14 844 335**			**20 251 851**			**13 757 222**		**17 453 723**	

Mig **Municipal Infrastructure Grant**
Acip **Accelerated consolidated Infrastructure Program**
Beh **Human Settlements Development Grant**
Crr **Capital replacement Reserve fund**
El **External**

REFERENCES

1) Prince Albert SDF (2013), Aurencon

2) Census Data (2011), Stats-SA

3) Central Karoo PACA Study, 2012

4) Prince Albert IDP

5) Department of Water Affairs Blue and Green drop report 2012

6) Department of Water Affairs Reconciliation Strategy 2010

7) Aurecon. Several MIG reports.