

SECTION F 2: INFRASTRUCTURE AND BASIC SERVICES

Our infrastructure vision is the provision of integrated and sustainable world-class infrastructural services to all residents of Kouga in a well maintained, secured and healthy environment

Our core mandate of the institution is to:-

- (a) Supply clean , healthy and quality water services
- (b) Ensure well maintained and treated affluent services on a sustainable basis
- (c) Ensure safe , well maintained roads and storm water infrastructure services
- (d) Provide reliable, sustainable power and energy supply.

I. Service Delivery Strategy

Turn Around Strategy-Municipal Infrastructure Support Agency (MISA) Support Programme

An intensive intervention strategy is envisaged to be received from the Municipal Infrastructure Support Agency's (MISA) support programme. A diagnostic analysis of the Municipality was convened by the department of Cooperative Governance, MISA Unit in partnership with the Provincial and the Eastern Cape Department of Cooperative Governance and Traditional Affairs. Its main objective was to bring key stakeholders together and engage the municipality on its challenges regarding service delivery and general functionality of the municipality in order to come up with a support plan/ programme to address the identified challenges. The situational diagnostic analysis of the Municipality is in terms of governance, service delivery and infrastructure, planning, economic development; financial management is developed in order to enable the MISA team to develop an appropriate support for the municipality.

2. Background information for current capacity assessment

2.1 Water services delivery strategy and main role-players:

The municipality is a Water Services Authority (WSA) and Water Services Provider (WSP). The PMU, Civil Services and Electrical Engineering Managers posts have been filled except for the Director Infrastructure and Development Planning (S57). Review of Section 78 processes is complete and was conducted by Cacadu District Municipality (CDM). The municipality is assisted by Department of Water Affairs to prepare Operation and Maintenance (O&M) Master plan and have a contractual arrangement in terms of Service Level Agreement (SLA). Water Services Developmental Plan (WSDP) was approved in May 2011 and it captured all the backlogs and is fully quantified and incorporated in this IDP. Currently all backlogs are captured in the RBIG programme including backlogs in degrading infrastructure. Order of Assessment from DWA to be included in the WSDP of the municipality and the *backlog document* which is in draft form will be tabled to the Council and submitted to MISA. Blue and Green drop tests kits were purchased to assist areas with challenges. In some areas there is shortage of staff where there is only one personnel instead of two. Training of Process Controllers has been a challenge but they are currently undergoing training on the NQF Level 2 through DWA.

There are no fully fledged monitoring systems; MISA support to develop O & M manuals is required. . Green drop status is still a challenge even though it is improved.

There is need for a councilor workshop to clarify the contents of blue and green drops. Rapid Response Unit should submit their Assessment Report on Green and Blue Drop before March 2012, to streamline it with MISA. Non-compliance letter from DWA for all the 7 Waste Water Treatment Plants (WWTP) and also the Record Of Decision (ROD) from DEDEAT for Patensie have been received. DCS and DPW are delaying to transfer the plant to municipality.

MIG funding is not enough to construct more Bulk Infrastructure project (Patensie) and some areas they are not fenced as a result they pose high dangerous risks to the community. Ground Water Project Plan done by DWA is in place. The municipality intends to discuss with DWA to run the local Dams and intends to build on capacity to be adequate for approval. The Municipality is planning to establish ISD unit.

The majority of Kouga's planned water services projects will be spent on bulk developments to be able to cater for an increasing demand in water services that can be described to seasonal variations and economic growth. 100% of the planned water supply projects are bulk and 94% are bulk sanitation projects. The Municipality has developed a Comprehensive Infrastructure Plan (CIP) and close linkages are established between the WSDP process and the information included within the CIP. The availability of water resources and existing infrastructure capacity also need to be considered when planning new infrastructure.

2.2 Levels and standards in water services

All the consumers within the Kouga Municipality receive water and sanitation at or above RDP standards. The Service Level Policy of Kouga states that all consumers will have access to higher levels of services. However, this service level policy should not only consider the level of services affordable within the LM, but also the existing capacity of water services infrastructure as well as water availability. New housing developments need to be included within the LM's service planning process. Based on the Service Level Policy of the Municipality to provide higher levels of services to all, a first order cost estimated indicated that Kouga requires R65,3 million to provide house connections to all (excluding bulk) and requires R202,7 million to provide full waterborne to all households. The total requirement is estimated at R268 million. The total MIG allocation for 2012 to 2014 is R81 million. The WSDP indicates a water services development requirement of R66,235 million.

It is therefore of utmost importance for Kouga to consolidate their total water services requirement in order to provide a total perspective on their water services needs. The main role players in water provision is seem to be the Local Municipality, the District Municipality, DWAF, and DLGTA, with the LM playing the major role. The other role-players mostly assist financially towards capacity building programmes to enhance the delivery of the planning process. "Kouga Local Municipality has a duty to all customers or potential customers in its area of jurisdiction to progressively ensure efficient, affordable, economic and sustainable access to water services. And, every WSA must prepare a draft Water Service Development Plan for its area of jurisdiction." (The Water Services Act, Act 108 of 1997).

Remedial actions to address major challenges in water services :

- i) Developing of a long term water provision master plan w.r.t. upgrading and rehabilitation of Bulk Infrastructure. A consultant has been appointed to prepare the Master Plan.

- ii) To establish contract and service level agreements with all appropriate service delivery role players, i.e. Bulk Water Suppliers. Negotiations with Gamtoos Irrigation Board and the NMMM are underway w.r.t. the supply of bulk water.
- iii) Establishment of a customer service centre together with the establishment of a customer service charter. The Municipality is in the process of identifying the different role-players together with roles and responsibilities.
- iv) To obtain Green Drop Certification is our major challenge. The Municipality scored 74,9% in 2010/2011 Blue Drop Evaluation. To improve on the Municipality's Green Drop performance, the first evaluation for green drop requirements were done in 2010 and the municipality scored 45%
- vi) To implement a water conservation / demand management strategy. The Municipality has approved and submitted a business plan to DWAF depicting the major challenges with regard to Water Conservation Demand Management.
- vii) The bulk water supply in dams in the municipal area are purchased by the Municipality in the neighboring Nelson Mandela Bay Municipality
- viii) Explore Alternative Water Sources
- ix) Implement a Water Conservation and Demand Management

Alternative Water Source: Ground Water Study : Employed strategy for establishing the true groundwater potential is as follows:

1. Deciding on the minimum annual groundwater yield that makes groundwater development worthwhile, taking into consideration yield, the value of an assured supply to meet seasonal peak demands and the value of a back-up to surface water.
2. Identify one or two hydro-geological domains to undertake pilot studies.
3. Identify prime drilling target areas by undertaking a detailed remote sensing study of these areas and by obtaining on-the-ground information.
4. Assess the groundwater potential in about five of the prime target areas after undertaking an environmental study of these areas. This would require drilling and borehole testing (pumping) as well as a Basic or more detailed environmental study.
5. Put the prime areas into production and monitor groundwater and environmental effects of abstraction.
6. Repeat this process with new areas, and consider artificial recharge as a means to increase the assured yield or a means to provide additional supplies during summer months.

The municipality with the experienced water shortages is opting to pursue the option of underground water supply. The municipality will engage the services of a ground water specialist to investigate the feasibility of the development of a groundwater source to the north of the R102.

Traditionally, groundwater resources for municipal supplies are only assessed within a relatively small radius of cities/towns because of logistical and economical factors associated with pumping large distances. A report prepared for the Water Research Commission, dated January 2008, indicates excellent opportunities for ground water extraction in the area to the north of the R102 from Jeffreys Bay in a westerly direction to a position well west of Humansdorp. This study reveals major aquifers and potential drilling target areas within an economically acceptable distance of existing water supply infrastructure. High-yielding groundwater areas for the Kouga Municipality can be gained if it is successful in acquiring substantial water quantities from these groundwater sources. It may put the municipality in the position to trade water from the Mpopho and Churchill sources for additional allocation.

Estimated groundwater resource potential:

Resource	Coastal Area	Gamtoos
Area	860 km ²	642 km ²
Existing use	1.2 Mm ³ /a	0.2 Mm ³ /a
Recharge (normal years)	22.1 Mm ³ /a	21.6 Mm ³ /a
Recharge (dry years)	16.0 Mm ³ /a	15.6 Mm ³ /a
Contribution to river base flow	11.4 Mm ³ /a	24.7 Mm ³ /a
Harvest Potential	46.0 Mm ³ /a	6.4 Mm ³ /a
Groundwater Resource Potential (normal years)	15.5 Mm ³ /a	17.2 Mm ³ /a
Groundwater Resource Potential (dry years)	8.8 Mm ³ /a	11.0 Mm ³ /a
Groundwater Exploitation Potential (normal years)	5.7 Mm ³ /a	9.6 Mm ³ /a
Groundwater Exploitation Potential (dry years)	3.3 Mm ³ /a	6.1 Mm ³ /a
Borehole yield without artificial recharge and continuous abstraction (~20 boreholes)	5 Mm ³ /a	2.5 Mm ³ /a
Borehole yield with artificial recharge and 6-month/a abstraction (>20 boreholes)	7.5 Mm ³ /a	3.75 Mm ³ /a

Table 1**Potential targets: Jeffreys Arch**

The general criteria required for targeting high yielding boreholes in the Jeffreys Arch Domain appear to be the following:

1. Anti-clinorium in this area is composed of numerous secondary anticlines and synclines. The changes in fold limb orientations increase permeability and can increase groundwater residence time.
2. High coastal recharge area & much exposed fractured bedrock in recharge area, with a thin soil cover.
3. The drilling target areas must be well jointed and fractured. In Domain 1 NE-SW jointing dominates, but subordinate site-specific N-S and E-W joints should also play a role in groundwater flow.
4. Possible deep Table Mountain Group (TMG) structural targets under Cretaceous basin fill at the extreme SW margin.

Highlighted areas in order of priority

1. Plunging anticlinorium. Target synclines first.
2. Intersection of quartzitic sandstone syncline / anticline structures and the dominant NESW joint system. Geological evidence suggests the presence of artesian water.
3. Target Areas: secondary anticlines and synclines. Target the synclines and change in bedding dip combination with the dominant fracture system. Target Area 4 could be extended towards Humansdorp and Kruisfontein, should similarities with Target Area 2 be found.

Potential targets: Gamtoos

The high groundwater potential areas in the Gamtoos Basin appear to be:

1. The Gamtoos boundary fault and associated faulting (largely unmapped).
2. The buried gravel terraces of the Gamtoos River.
3. The coarser-grained sand horizons in the upper Enon – lower Kirkwood Formations.
4. Seepage water at the base of the Tertiary and Quaternary cover sediments.
5. Possible fault-related lineaments in the basin – provided they are not clay-rich faults.

Water Conservation and Demand Management

Alternative water supply methods such as water demand management, rain water harvesting etc must be investigated and implemented if feasible.

Estimated Water Demand

The water requirements were based on the following consumption estimates for the different categories of development. It has been accepted that business zoning will have coverage of 70% and institutional and local authority will have 30% coverage.

LAND USE	Unit	Consumption /unit/day
High Density - General Res	Residential Opportunity	450
High Density - Single Res	Residential Opportunity	500
Single Res	Residential Opportunity	650
Single Res - Low Density	Residential Opportunity	800
Business	/100 m ² of building area	400
Institutional	/100 m ² of building area	400

Table 2

One or two of the projects can proceed with some minor interventions, it is quite clear that the KLM needs to embark on a challenging program to upgrade its bulk services infrastructure to a level where it can provide the services as expected by its residents. The proposals hereunder are not final solutions but merely an indication of sensible routes to follow to achieve the desired results. Where costs are mentioned it should not even be considered for budget purposes but it will provide an idea of the magnitude of the intervention that is needed to rectify the situation.

3. Infrastructure Capacity Analysis

Kouga Municipality has appointed Kwezi V3 Consultants to prepare an assessment report on the level of service and capacity of the existing bulk services, for the proposed developments, constraints as well as recommendations in respect of the requirements for the provision of bulk services to a number of housing developments areas. The 8613 new housing developments are earmarked for approval by Department of Human Settlement in Humansdorp, Jeffreys Bay, St Francis Bay, Thornhill, Hankey and Patensie.

Kwezi V3 obtained an indication of the size of bulk services (which will still to be confirmed through preliminary and final design processes) by utilizing standards and design parameters to calculate the demand and requirements for civil services in accordance with the Guidelines for Human Settlement Planning and Design compiled by the Department of Housing and Construction Technology (2000) and other approved design specifications.

3.1 Existing Bulk Infrastructure Capacity

The investigation of the demand and the provision of bulk services is viewed within the framework of the following:

A large portion of the existing and future water provision for Jeffreys Bay, Humansdorp, St Francis Bay and Thornhill is being obtained from the NMBM main supply pipes through the Churchill Pipeline.

These allocations are all largely exceeded and will leave the municipality in a precarious position should the NMBM apply the agreements in times of droughts. The agreements will be consolidated and revised, for the present and future needs, as a matter of urgency. The NMBM has recently prepared a Water Master Plan in which allowances were made for the present and future water requirements. NMBM is showing a keen interest to finalise the proposed allocations in the Water Master Plan (completed in 2007) for the provision of potable water from the bulk water schemes in an agreement with the KLM. These allocations were accepted in principle and contained in a Drought Service Level Agreement. The Kouga Local Municipality has two WDPs – Nelson Mandela Bay Municipality (NMBM) and Gamtoos Irrigation Board(GIB).

The water purchased from the NMBM is just above 50% of total water demand, which has a significant financial impact for the municipality. A study is nearly complete to evaluate the extended use of local ground water to reduce dependency on external water service providers. An emergency water supply contingency plan has been developed in case of drought periods. This IDP sets out goals that all citizens have access to at least a basic service level of service within the five years. The targets are set out in the section above of this IDP. The basic water supply is in accordance to the compulsory national standards in Section 9(1) and the measures to conserve water in section 73(1)(i) of the Water Service Act.)

The basic water supply comprises of:

- the provision of appropriate education in respect of effective water use
- a minimum quantity of potable water of 25 litres per person per day ,
- at a minimum flow rate of not less than 10 litres per minute
- within 200 meters of a household
- with an effectiveness of not more than 7 days interrupted supply to any consumer per year.

Sanitation

The quality of effluent from our waste water treatment works (WWTW) is regulated by the new Water Services Act (2000). Kouga as a Water Services Providers (WSP) does not conform to the requirements of the Act. The WWTW at St Francis Bay is situated within 2 km from the sea and the value of land so close to the sea can never be over-estimated. The above mentioned realities and the advantages of economy of scale and centralized operations emphasize the necessity to investigate the possibility of a centralized regional WWTW for Jeffreys Bay, Humansdorp and Cape St Francis. Pollution of public water sources i.e. dams, rivers and streams by allowing effluent that does not conform to the requirements of the Act, is a transgression of the law and the council and officials can be legally prosecuted. Effluent quality of our seven WWTW is tested on a monthly basis in terms of the green drop requirements.

The basic sanitation comprises of:

- The provision of appropriate health and hygiene education
- A toilet which is safe, reliable , environmentally sound , easy to keep clean , provides privacy and protection against weather , well ventilated , keeps smells to a minimum and prevents the entry and exit of flies and other disease –carry pests.

The proposed programme as in accordance with the service level and service quality goals, can only be done in an integrated manner with consideration of socio-economic , water resource, environmental, infrastructure, management and financial constraints, This implies that a number of scenarios will have to be tested before the most appropriate one can be decided upon. The service level relates to the options which consumers can be given with regard to the convenience of the service and hence the amount of water, which they will consume, and the associated waste water they will generate.

The WSDP refers to ranges of different service types, which can be provided to number of consumer units that do not have access to basic water supply or sanitation.

Solid Waste

In terms of the Environmental Conservation Act of 1989 all Solid Waste Disposal Sites (SWDS) need to be operated within the guidelines as stipulated. These guidelines require that sites should be approved and licensed. Municipality has three operational landfill sites; two are licensed and one is in planning phase. Rehabilitation project is in St Francis. Two licensed sites do not meet the requirements (Not fenced only compassion is being done). Oyster Bay and Jeffrey's Bay are using transfer stations. DEDEA are not providing any form of support even maintenance or rehabilitation. KV3 engineers prepared an Integrated Waste Management Plan for the KLM and the final document was adopted by Council in November 2008 that needs to be reviewed. Due to financial constraints LM is unable to develop own plan. There are by-laws to control illegal dumping but there is none for solid Waste sites. DEDEA must report their progress in terms of the bylaws development. The Waste Management Unit with manager is in place but there are vacant posts that need to be filled as a matter of urgency. Local Regional Site is in Humansdorp and is not fenced. Recycling programmes are done by a Service Providers but communities not benefitting in terms of socio-economic activities. Municipality will check other entities; such as EPWP, SETA, and DEDEA for socio-economic activities. The total units of refuse collection is 30600 and 12 000 is from informal settlements. The municipality wants to increase fleet every five years but due to shortage funds and conditions of roads they lose their value early. Shortage of staff and revenue enhancement is a challenge because it is not budgeted in the Equitable Share.

The capacity of a site depends on factors included in the license i.e. provision of linings, drainage, coverage, etc. The adherence to these requirements of the two approved waste disposal sites in the Kouga area, Humansdorp and Hankey, as the norm to determine the capacity of the site.

All waste being generated in the area of the Kouga Local Municipality is being disposed of at one of these two sites. The existing capacity of this site is limited and new cells with additional capacity will have to be provided urgently

3.2. Service Requirements

It is problematic to calculate the requirements for these developments with a high degree of confidence. The developed plans refer to the majority of beneficiaries for these developments are people who are already staying in the area and making use of the services at the moment. Although it is possible to do a reasonable estimate of the requirements for the new housing development it is difficult to determine the existing consumption and thus calculating the additional requirements. For the purpose of this report it is accepted that 50% of the estimates calculated for the developments will be additional requirements. That should be sufficient to allow for the increase in per capita water consumption and for additional people that will enter into the developments.

WATER & SEWAGE STATISTICS SUMMARY		
TOWNS	WATER(Kl/day)	WASTE WATER(Kl/day)
Loerie	175	143
St Francis Bay/ Oyster Bay	2150	1763
Humansdorp	2600	2340
Jeffreys Bay	3450	2829
Thornhill	550	495
Hankey	1200	1080
Patensie	950	855
Total	11075	9505

Table 3

3.3 Overall Summary of the Routine Maintenance Backlog

Service component in each town is presented below:

Town	Water:					
	Current Routine Backlog Cost (R million)					
	WTW	BH	Res	WPS	Reticulation	
Jeffreys Bay	0,102	0,056	2, 143	0,183	0,725	
Humansdorp	0,289	0,022	0,524	0,115	0,235	
Hankey	0,0449	-	0,214	0,099	0,064	
Patensie	0,786	-	0,244	0,124	0,043	
Loerie	-	-	0,124	-	0,023	
Cape St, Francis / St, Francis Bay	0,054	205	1, 349	0,050	0,302	
Thornhill	-	-	10	-	0,015	
Oyster Bay	0,048	0,004	0,021	0,007	0,023	
Total	1, 730	288	4, 631	580	1, 434	8, 663
Town	Sanitation					
	Current Routine Backlog Cost (R million)					
	Sewers	SPS	WWTW			
Jeffreys Bay	0,592	1, 019	0,176			
Humansdorp	0,333	0,151	0,414			
Hankey	0,053	0,215	0,648			
Patensie	0,007	-	-			
Loerie	0,007	0,004	0,014			
Cape St, Francis / St, Francis Bay	0,148	1, 361	0,413			
Thornhill	0,007	0,004	0,031			
Oyster Bay	0,004	-	0,004			
Total	1,155	2, 757	1, 703	5, 615		

Table 4

Proportional Routine Maintenance Backlog Cost Per Town:

Towns	Percentage of RMB Per Town
Jeffreys Bay	51, 30%
Humansdorp	28, 85%
Hankey	4, 62%
Patensie	0, 64%
Loerie	0, 65%
Cape St, Francis / St, Francis Bay	12, 89%
Thornhill	0, 64%
Oyster Bay	0, 40%

Table 5

Estimated cost of the rehabilitation backlog per service:

Town	Water:					
	Rehabilitation Cost Backlog (R million)					
	WTW	BH	Res	WPS	Reticulation	% of KLM
Jeffreys Bay	0,612	0,337	12, 859	1, 099	0,967	43, 76%
Humansdorp	1, 156	0,088	2, 096	0,460	0,313	11, 35%
Hankey	2, 245	-	1, 070	0,498	0,086	10, 75%
Patensie	2, 752	-	0,854	0,435	0,057	11, 30%
Loerie	-	-	-	-	0,031	0, 09%
Cape St, Francis / St, Francis Bay	0,246	0,923	6, 073	0,225	0,403	21, 70%
Thornhill	-	-	-	-	0,020	0, 06%
Oyster Bay	0,195	0,017	0,085	0,030	0,031	0, 99%
Total	7, 209	1, 367	23, 039	2, 749	1, 912	36, 276
Town	Sanitation					
	Rehabilitation Cost Backlog (R million)					
	Sewers		SPS	WWTW	% of KLM	
Jeffreys Bay	-		6, 118	1, 059	22, 38%	
Humansdorp	10, 306		0,606	1, 658	39, 20%	
Hankey	-		1, 075	3, 240	13, 46%	
Patensie	-		-	-	-	
Loerie	-		-	-	-	
Cape St, Francis / St, Francis Bay	-		6, 126	1, 858	24, 90%	
Thornhill	-		-	-	-	
Oyster Bay	-		-	0,19	0, 06%	
Total	10, 306		13, 926	7, 836	32, 068	

Table 6

Combined total remedial cost per service, for each town:

Town	Water:						
	Remedial Cost Backlog (R million)						% of KLM
	WTW	BH	Res	WPS	Reticulation	Total	
Jeffreys Bay	0,714	0,393	15,002	1,282	1,692	19,086	42%
Humansdorp	1,445	0,110	2,620	0,575	0,549	5,301	12%
Hankey	2,694	-	1,284	0,598	0,151	4,728	11%
Patensie	3,538	-	1,098	0,560	0,101	5,298	12%
Loerie	-	-	0,124	-	0,055	0,179	0%
Cape St, Francis / St, Francis Bay	0,301	1,128	7,422	0,275	0,705	9,833	22%
Thornhill	-	-	0,010	-	0,035	0,046	0%
Oyster Bay	0,244	0,022	0,106	0,037	0,055	0,466	1%
Total	8,939	1,655	27,670	3,329	3,346	44,941	
Town	Sanitation					% of KLM	
	Remedial Cost Backlog (R million)				Total		
	Sewers	SPS	WWTW	Total		% of KLM	
Jeffreys Bay	0,592	7,138	1,236	8,967	24%		
Humansdorp	10,639	0,757	2,073	13,471	36%		
Hankey	0,053	1,290	3,888	5,232	14%		
Patensie	0,007	-	-	0,007	0,02%		
Loerie	0,007	0,004	0,014	0,026	0,07%		
Cape St, Francis / St, Francis Bay	0,148	7,487	2,271	9,907	26%		
Thornhill	0,007	0,004	0,031	0,043	0,12%		
Oyster Bay	0,004	R 0,00	0,024	0,029	0,08%		
Total	11,461	16,683	9,540	37,685			

Table 7

4. Electricity Service

4.1 Electricity services delivery strategy and main role-players:

Municipality have licence from NERSA to distribute electricity in the coastal areas and Eskom is servicing the council areas/inland. The Municipality is the registered Supply Authority for Humansdorp, Jeffreys Bay, St Francis Bay, Cape St Francis and Oyster Bay, where at each town a bulk supply is taken from the Eskom grid.

The Municipality's role is to construct, operate, and maintain the distribution network for electricity service delivery to residential, commercial and industrial consumers in each township, which includes street lighting and supplying pump stations, etc. Hankey, Patensie, Loerie are serviced with electricity by Eskom, and Thornhill by the Nelson Mandela Bay Municipality (NMBM). The municipality has SLA between Eskom and NMBM. Integrated Electrification 5 year plan is in place.

The Electrical Department is headed by the Manager Electro-Technical Services, supported by three (3) Area Engineers with offices in Humansdorp, Jeffreys Bay and St Francis Bay. EIA regulations need to be taken into considerations when developing Electrification Plan. Due to the shortage of Technical electrical engineering staff, MISA should assist in capacitating. Received is a total amount of R6.5m from the Department of Energy which they used to supply electricity to needy areas (R2m is for new housing development and R4.5 m is for 2.5 MVA electricity transformer including 9 High Mast Light).

Their role in addition to planning is to manage the electricians and other staff responsible for the day to day operation of the electricity network and related construction work. The key factors in the service delivery strategies are to maintain a high standard of service and to ensure that electricity is available to all commercial properties, households (both formal and informal) and new developments within acceptable norms. In order to reduce the financial burden on consumers, particularly in terms of the capital requirements for new distribution networks, applications are made to all relevant institutions for financial assistance in a well planned manner.

The present consumer quantities are:

Town	Indigent households	Other households	Commercial / industrial	Totals
Humansdorp	3 137	1 649	371	5 157
Jeffreys Bay	1 678	7 172	619	9 469
St Francis Bay	352	1 451	93	1 896
Cape St Francis	0	499	7	506
Oyster Bay	52	224	10	286
Totals	5 219	10 995	1 100	17 314

4.2 Level and standards in electricity services

The aim is for the levels and standards for the provision of the electricity services to be in compliance with the requirements of the National Electricity Regulator (NER) and the quality of service and supply standards of NRS 047 & 048. Annual reports in this regard have to be submitted to the NER based on information obtained from data loggers installed at various locations in the network. Electricity is made available to all potential consumers in the areas for which the Municipality has a supply license. The target set by the Housing Department for the electrification of low cost housing / indigent households has been met. The target is revised annually in accordance with the demand and the necessary steps are taken to timeously complete the work.

This includes applications to the Department of Minerals and Energy (DME) to obtain the necessary funding for both electrification and infrastructure upgrade. So far the Municipality has a 100% success record in meeting the requirements of DME and the targets set.

MIG funding is used for the provision of area / street lighting in low cost housing areas.

4.3 Annual performance as per key performance indicators in Electricity services:

Indicator name	No of household / customer expected to benefit	Estimated backlogs	Target set for the financial year under review	No of HH / customer reached during the financial year	Percentage of achievement during the year
Percentage of households with access to electricity services	100% *	500 IH only	500 IH only	500 IH only	100% IH
Percentage of indigent households with access to free electricity services	100% *	500	500	500	100%
Percentage of clinics with access to electricity services	0%	0	0	0	0

Table 8

IH Indigent households *Total of 16 214 households of which 5 219 are indigent.

Major Challenges	Remedial Actions
Upgrade of infrastructure (primary network) to meet demand and finding the necessary funds through grants, etc.	Master planning and stringent programs to implement upgrading measures.
Improve quality of supply and general service delivery.	Review of Augmentation Levy (contribution by new developments and existing consumers requiring upgrading of their supplies to augment the primary network) and consumption tariffs to meet capital program to upgrade infrastructure.
Training of staff.	Appoint additional staff to monitor quality of supply and level of services, and enforce methods to rectify any deficiencies. Staff to attend more training courses and to improve in-house training, particularly on safety aspects

4.4 Alternative Energy

4.4.1 Wind Project

The Eastern Cape Province is reliant on electricity imports from other provinces yet houses significant industrial and rural development potential. Power is transmitted considerable distances to the Eastern Cape (e.g. from Mpumalanga), which leads to significant transmission losses and local grid instabilities. In the Kouga region, secondary agricultural processing companies, both small and commercial scale farmers, currently experience an intermittent and sometimes unreliable supply of electricity. The current situation limits the economic growth potential in the Kouga area as some existing industries are considering moving elsewhere, and new industries are inhibited from developing because of the lack of an adequate and reliable electricity supply. The Kouga municipal area electricity supply to this area is currently unreliable and the area experiences energy instabilities such as voltage fluctuations and frequent outages.

Given these challenges, one ultimate goal is to help stabilise energy supply to the Kouga area, and thereby to assist the local economy in developing a greater degree of energy security, especially for emerging entrepreneurs in the area.

The type of grid instability in this case can be easily corrected with the use of local generation. An energy generation project activity in the Kouga area would assist in rectifying this situation.

Electrical connections

The wind turbines will be typically connected to each other and to the substation using medium voltage cables which will, in most cases, be buried approximately 1 m below ground, except where a technical assessment of the proposed design suggests that overhead lines are appropriate. A new sub-station (maximum compound size 90 m x 120 m) and transformer to the 132 kV Eskom grid will be built. The substation will preferably be located close to the 132 kV line. The connection from the substation to the Eskom grid line is a stretch of over head line supported on an intermediate pole(s), depending on the location of the substation relative to the 132 kV line.

Jeffrey's Bay = 66KV connection	Humansdorp = 22 KV connection	Cape St Francis = 22KV	Oyster Bay = 22KV connection
Total max. demand = R32 MVA Usage max. demand = 24 MVA Spare capacity = 8MVA	Total max. demand = 12MVA Usage = 10 MVA Spare capacity = 2MVA	Total max demand = 5,5KVA Usage max. = 6KVA Spare capacity = None	Total max. demand = 9KVA Usage max. = 8KVA Spare capacity = 1KVA

Other infrastructure Strategic Approaches to challenges

Priority Challenges	Strategic Approach
The towns of Hankey and Patensie are allocated a quota of water from the Kouga dam and canal system by the Gamtoos Irrigation Board. The need for future housing developments will require an increase in the water allocated for domestic use.	A meeting has been scheduled in February with the GIB to discuss this increase in the quota.

The agreement pertaining the allocation of bulk water supply purchased by Kouga from the Nelson Mandela Metro needs to be formalized and concluded.	A meeting has been scheduled in February with the NMM to discuss this increase in the quota.
Our underground water sources investigated and explored to augment the existing supply obtained from surface sources(dams) to protect these scarce commodities and sustain development.	Engage DWA to assist in doing feasibility studies and possible funding.
To eradicate backlogs at existing waste water treatment plants to provide capacity for future housing developments	Engage DWA for possible funding of these projects.
Existing bulk/connector infrastructure requires to accommodate the increase in effluent generated by the developments.	Engage DWA for possible funding of these projects.

5. Expanded Public Works Program

The Expanded Works Programs (EPWP) is one element within a broader government strategy to reduce poverty through the alleviation and reduction of unemployment. The Expanded Works Programme involves creating work opportunities for unemployed persons, and so allowing them to participate economically and contribute to the development of their communities and their country as a whole. The National Department of Public Works is mandated to lead and coordinate the Expanded Public Works Program (EPWP) and Municipalities have to implement. The success of EPWP depends on concerted effort, cooperation and implementation across all sectors, spheres of government as well as non state entities. Kouga Municipality has appointed a champion to facilitate effectively the EPWP processes.

According to the Department of Public Works record the Kouga Municipality satisfy the criteria to be eligible to receive the EPWP Incentive Grant. The goal of the incentive grant is to incentivize municipalities to increase job creation effort in infrastructure and environment and culture programmes through labour intensive employment and expansion of job creation in line with the EPWP guidelines. To that effect the Municipality has on the 13 July 2011 has signed an Incentive Agreement for the Integrated EPWP Incentive Grant with Department of Public Works.

6. Housing Development

6.1 Capacity, Role Players, Strategies and Proposed Programmes

The Kouga municipal area is characterised by fragmentation and separation of different population groups. This urban pattern represents the typical “apartheid” townships with lower income areas situated far from opportunities, characterised by urban sprawl and lack in basic services. The rationale of the existing Housing Sector Plan (HSP) is to guide the Local municipality to deliver housing programmes in a planned and coordinated manner. In addition the HSP will enable the municipality to correct the spatial disparities of the apartheid era and ensure the integration of housing with other service provisions to maximise the use of limited resources. It is therefore critical that the housing development processes should promote higher density in respect of housing development to ensure the economical utilisation of land and services. *In situ* development (including upgrading and formalisation projects) within the towns should therefore be prioritised over new green-fields developments.

In addition, in the urban area it is important that the existing prioritised projects for low income households are well delivered within the resources available and that the necessary work is done in preparing the future projects and acquiring the necessary financing.

The Kouga Municipality has been granted developer status which enables the municipality to appoint services providers. The Kouga municipality has subsequently allocated funds for the recruitment of applicable candidates. Despite the status of the municipality, it is mentioned that the district municipality is not actively involved in the development process. It is therefore important that there is clarity on the respective roles and responsibilities between the province, district municipality and the local municipality. This will require a clearer joint plan of action and linkage to a possible MOU. To the extent that it is considered important for the municipality to have a role in parts of the housing process, it is critical that a plan is put in place to build the necessary capacity in the municipality and through the District Council to effectively undertake these responsibilities. Of particular priority is the strengthening of the relationship between the internal sections within the municipality and with the ECDOHS, the regional Department of Land Affairs as well as agencies and NGOs working in the rural parts of the municipality.

One of the major concerns with regards to housing delivery (as mentioned in the main report) is the continued influx of migrants to the area in search of employment opportunities, some short term in the fishing and tourism industry and by farm workers after the fruit harvesting season is over. It is expected that the migration may increase if the proposed Nuclear Power Station is given the go ahead. It is critical that the housing waiting list should prioritise South African citizen as priority beneficiaries for housing delivery. Another issue that hampers the development process is the limited supply in land for housing development purposes. The Kouga municipality need to acquire a total a 500ha land from private land owners in order to supply housing units to all beneficiaries. The normal willing buyer/ willing seller or alternatively expropriation procedures (with compensation) apply when accessing privately owned land for settlement development or municipal commonage purposes. The value of land is very high in coastal settlements and intensively cultivated and irrigated land and Jeffrey's Bay enjoys both of these location factors and it is expected that the price of land will be high. Weston is a Land Restitution Area in the Kouga municipal area and claimants have now successfully claimed their original land which was acquired by the municipality for township development purposes. Non-claimants squatting on the land need to be relocated to enable the legal claimants to develop their original properties in line with the restitution options they have chosen. Although the municipality has clearly defined objectives for housing, there is no clear housing vision with regards to housing delivery. In order to harness all stakeholders towards a common goal, it is imperative that the vision for housing is clearly defined. It is not possible to establish the alignment of the housing delivery process with services and amenities offered by other sector departments. It is important to address cross-sectoral alignment and it is therefore critical that the housing sector plan should be aligned with the IDP and other sector plans for the municipal area.

The present planning is badly inhibited by the lack of properly developed and maintained database on the demand and the projects that are planned and or implemented to tackle this.

Often the information is sparse, or it is held in different formats in different locations both within the municipality and outside of it. A more integrated system is required.

6.2 Detailed strategic programmes to be implemented

Programme 1: To determine expressed demand and to declare such demand

- Develop a Housing Voice by develop methodology and instruments as per Blue Book, Identify community engagement staff and conduct training to both staff and ward committees/ councillors, Statistical analysis and report.
- Housing Needs Register to upload system and tools and audit instruments, conduct training on the use thereof, conduct the audits, Capture analyse and produce reports of the results, Maintain database by putting a system in place that will ensure that applicants update their information on a quarterly basis and Produce reports that inform the development of housing programmes
- Child headed households to engage Social Welfare / SPU to cater for child headed and orphans – partnership arrangement for foster homes using the institutional subsidy programme and Identify where child headed households are located

Programme 2: Scale up of the delivery of subsidised housing to meet the demand

- Strategic planning: Annual environment analysis in order to review and revise annual housing sector plan / aligned with IDP Review and Consider: Report on housing demand from housing voice and Housing Needs Register, Supply report from pipeline of projects and Integration report. Collect information on disaster risk in the Municipal area (Provincial Disaster Management Plan preparation underway) and establish appropriate systems and networks to respond to potential disasters.
- Plan for emergency housing : Developed localised policies to create a more enabling environment and to manage the mushrooming of inadequate housing by Local Town planning dispensation Localised policy to address tenure related to commonage , ISRHDP policy, Informal settlement strategy
- Installation of designed data base system that holds the integrated project pipeline, trained staff able to use and update.
- ISRHDP Strategy: The Installation of designed data base system that holds the integrated project pipeline, Upload tracking tool for the project pipeline; Training of relevant staff in the municipality to use and update the system; Populated pipeline with all information up to date and verified, Quarterly updates and annual review report, Proposal for development of a rural/farm strategy with budget, Internal or external people appointed to carry out work, Baseline information, Preparation of identified priority projects for financing and implementation – including rectification and blocked projects, Land for housing development, Strategy and linkage to municipal and provincial budget and MTEF

Programme 3: To build a suitably structured housing unit in order to meet the housing mandate

- Development of housing unit, Development of internal operational policies and procedures, Identification and procurement of resources, Development and implementation of performance management system

Programme 4: To formalise the required institutional structures to support the Municipality in meeting its housing delivery targets

- Identified Key Potential Partners, Defined Approach to strengthening Partnerships, Negotiated basis of co-operation, Agreed MOU on Co-operation, Working together.

Arising from the above, a number of projects are proposed. Review of Housing Vision and goal is that residents have access to safe and affordable housing.

The Municipality has developed a Housing Master Plan underpinned by the following principles:

- Promote densification of settlements
- Promote different and varied housing typologies and tenure options thus doing away with the “one size fits all approach” to housing delivery
- Create communities and design human settlements rather than just deliver houses
- Settlements to provide opportunities for meaningful public places and facilities.

Key Challenges

- Preparation of a policy framework to prohibit the selling and renting of state-funded housing units
- Formalisation of a shack down policy, Influx control, illegal occupation of municipal land, estates on deceased families occupying state-funded houses, relocation policy and illegal building activities
- Enforcement of land use, rezoning regulations and spatial alignment in all sustainable reconstruction human settlement establishments
- Bulk Services: The insufficient capacity of water, sanitation, electricity, storm water reticulation and access roads seems to be a stumbling block in the implementation of the 10 x Human Settlement Projects and new private development initiatives.
- Land: The availability and suitability of vacant land to plan new Human Settlements Projects seems to be limited and a strategy should be developed to allow the municipality and relevant sector departments to engage with those landlords.

6.3 Bulk & Internal Services For Subsidized Housing Development

The Municipality has a considerable backlog which currently stands at 13732 housing units. This can mainly be attributed to developments in Jeffreys Bay resulting in huge influx. The NMBM indicated that they are eager to have this investigated and updated urgently to ensure that there are approved and agreed decisions in place that are binding on both parties. Prepared are proposals and are in essence not much more than an action plan to assist to prepare for provision of adequate bulk services. A few of the proposals have already been partially addressed through involvement of engineers and other actions but the largest number of them needs to be pursued aggressively. There are numerous obstacles and shortcomings with the delivery of bulk services and to make proposals to assist the Kouga to precede with its housing implementation plans without delay.

The estimates as being forwarded in referred to in the Cost Estimates table were prepared without detail planning and are little more than giving an order of magnitude for the implementation of the initiatives and can be summarized as follow:

Backlog and Current Capacity for the Housing Development:

Backlog and rehabilitation		Capacity for Proposed Development	
Water	R 43 600 000	Water	R 24 250 000
Sewerage	R 118 050 000	Sewerage	R 39 000 000
Waste Disposal	R 17 800 000	Sewerage Solid Waste	R 8 100 000
GRAND TOTAL			R 250 800 000

Table 9

6.4 Three (3) Year Plan to Electrify New Sub-Economic Houses

Below is a preliminary report on the proposed measures and funding necessary to upgrade the existing bulk infrastructure and to establish the internal reticulation network together with the house service connections and internal installation to complete the electrification of the proposed new residential areas in Jeffreys Bay, Humansdorp and St Francis Bay over the next three (3) years.

The 6 552 houses to be connected are in:

- Ocean View at Jeffreys Bay consisting of 1 720 houses.
- Kwanomzamo (193 houses) and Arcadia (2 639 houses) at Humansdorp.
- Sea Vista at St Francis Bay consisting of 1 615 standard houses and 385 Breaking New Ground (BNG) houses.

These areas fall within the supply area of the Municipality and is located where the main supply at Medium Voltage (MV- 11 or 22kV) can be readily made available from the existing bulk infrastructure.

This report does not cover approximately 2 000 new houses to be built in Hankey, Patensie and Thornhill. Hankey and Patensie fall within the supply area of Eskom and Thornhill under the Nelson Mandela Bay Municipality where these authorities will be responsible for the electrification of the houses as was done in the past.

Below is the summary of the kVA demand and bulk infrastructure and internal reticulation costs for each area to be developed, and notes on the bulk infrastructure upgrade measures required, the costs thereof as well as the internal reticulation costs, the funding sources and the basis for the cost estimates.

AREA	SE & BNG HOUSES				BULK INFRASTRUCTURE COST			INTERNAL RETICULATION COSTS			
	NO OF HOUSES		ADMD (kVA)	Total kVA	Total Cost	DME Funding	Kouga Counter Funding	Cost per House	Total Cost	DME Funding	Kouga Counter Funding
	SE	BNG									
Ocean View	1 720		1,5	2 580	R6,91 m	R6,91 m	Nil	R6 700	R 11,5 m	R9,46 m	R 2,04 m
Kwanomzamo	193		1,5	290	R2,34 m	R2,34 m	Nil	R7 000	R 1,35 m	R1,06 m	R 0,29 m
Arcadia	2 639		1,5	3 960	R9,15 m	R9,15 m	Nil	R6 600	R17,4 m	R14,5 m	R 2,9 m
Sea Vista	1 615		1,5	2 425	R8,25 m	R8,25 m	Nil	R 6 500	R10,5 m	R 8,9 m	R 1,6 m
		385	2,5	965				R10 500	R4,04 m	R 2,12m	R 1,92 m
TOTAL	6 167	385		10 220	R26,65 m	R26,65 m	Nil		R44,79 m	R36,04 m	R 8,75 m

Table 10

As can be seen from the kVA demand figures given in the table, these developments will require a substantial increase in the Eskom notified demand at Jeffreys Bay, Humansdorp and St Francis Bay.

In the present climate where Eskom is experiencing a supply shortage problem (mainly in generation) this could lead to there not being enough power available for these developments. Eskom will have enough time to address its problems. It is expected that, as was the case in the past, most of the funding will come from the Department of Minerals and Energy (DME).

At least once a year an application to DME for funding and has so far been successful in all instances, which include internal reticulation as well as bulk infrastructure upgrading work. In the case of bulk infrastructure upgrade, 100% of the amount required is normally granted, but for the internal reticulation a fixed amount per house is granted, which is normally less than the amount required. From the table it can be seen that the estimated internal reticulation cost for a standard house varies between R6 500-00 and R7 000 per house, whereas the present amount received from DME is R5 500-00/house. Counter funding will therefore be in this case required from the Municipality, which will be higher for the BNG houses where the cost per house is estimated at R10 500. The rate of R5 500-00/house is reviewed each year by DME to take escalation into account.

It is to be noted that funding from DME is not guaranteed and a concerted effort is required each year to secure same. A negative aspect is that DME now requires the houses to be completed before an application can be made.

This is not practical since owners expect the houses to be provided with electricity they move in. Another negative aspect is that it often happens that the internal reticulation is completed before the houses are completed or the areas where the houses are to be built are changed midway through the construction of the internal reticulation. This sometimes results in the electrification not being completed in the time frame given to DME, which makes the department reluctant to provide funding the next year. The level of the services required for the BNG houses still needs to be determined. Judging by the sizes of the erven these will be more up market houses and therefore we allowed a higher demand per house and underground MV reticulation and service connections, whilst the Low Voltage (LV) reticulation is to be overhead as in the case for the sub-economic houses. No allowance has been made for street/area lighting as this is not included, in the funding parameters set by DME. This can, however, be installed using MIG funds. All costs are based on present day prices with no allowance for escalation.

Allowance for escalation can be made at 1% per month. The numbers of houses given in the table are those that fall within the Kouga Municipal supply area and not those in the Eskom supply area ($\pm 2\ 000$). The funds from DME for Internal Reticulation Costs are based on a rate of R5 500-00/house, which is the rate for 2009/10. This amount is adjusted every year to allow for escalation. It is not guaranteed that funding will be received from DME every year for both Infrastructure and Internal Reticulation Costs. Clinkscapes Maughan-Brown is on a regular basis applying on behalf of the Municipality to DME for funding.

The main challenges to make this project work from an electrical perspective are as follows:

- (i) To complete the houses timeously and meeting the DME requirements
- (ii) For Eskom to meet the additional load requirements, which will be imposed at each town's bulk supply point.
- (iii) Funding and a cash flow programme which will meet the infrastructure upgrading and internal reticulation expenditure requirements.
- (iv) Availability of counter funding from the Municipality.
- (v) Evaluate the BNG housing requirements and having adequate funding in place to meet this higher standard.

The following measures are considered to meet these challenges:

- (i) Setting-up a planning team to effectively co-ordinate the building and engineering services and work from a master plan prepared by the same team.
- (ii) Meet with DME to formulate a strategy to meet its requirements, but being practical in terms of the house and Municipal programme requirements.
- (iii) Eskom must be timeously advised of the increase in notified demand and be made aware of the house owners and Municipal programme requirements.

- (iv) Demand side management measures in implemented by the Municipality to reduce the peak kVA demand and kWh consumption (energy saving) at each of the Eskom supply points.
- (v) The expenditure programme needs to be well co-ordinated with the timing of the funding from DME, MIG and own budget.
- (vi) Counter funding from the Municipality could be enhanced through a special electrification levy. It is important that there is a long term plan in place.
- (vii) The services requirements of the BNG housing need to be evaluated by the planning team mentioned above.

6.5 **The Road Ahead**

Recommended for action by the service providers is the following course of action:

- (i) A workshop to be held to determine the main focus areas, attended by the relevant officials and Councillors of the Municipality and Consultants presently involved in Engineering and Town Planning projects for the Municipality.
- (ii) A planning team to be set-up. The terms of reference, particulars and budget can be determined at the workshop mentioned above.
- (iii) The first requirement for the planning team should be to prepare a master plan together with costs and to submit the final report to Council for approval.
- (iv) Meet with DME. This is of extreme importance since nearly all the funds for the electrification programme could be obtained from this Department.

Bucket eradication

The target date for bucket eradication in formal areas in Kouga was December 2007, and this target was achieved in June 2006. With the growing population and demand there are still formal houses that utilize bucket system and eradication target is June 2014.

Sewerage

The backlog at existing waste water treatment works need to be eradicated and capacity provided to accommodate future housing developments. Existing bulk/connector infrastructure requires upgrading to service and accommodate the increase in effluent generated by housing developments.

Stormwater

Kouga LM experience storm water problems in several areas within our area of jurisdiction. Flood line studies or investigations have not been done in most of the areas that are currently affected by flooding. The high cost of providing storm water infrastructure is a huge challenge in addressing the situation. The existing Stormwater Analysis will be reviewed.

Roads

The study area is served by an extensive road network in the rural areas, with specific reference to the Gamtoos River Valley. The N2 National road and various regional distributors play an important role in the transportation of goods and services and feeding the tourism industry. The roads that belong to the municipality is 350km tarred road and 87 km gravel road. Internal roads in urban areas and settlements generally need upgrading and ongoing maintenance. Roads in low income, high density residential areas are mostly gravel with limited storm water management.

The Municipality is implementing an ongoing process of maintenance and improvement. In addition, the IDP identified a number of road, maintenance and upgrading projects. New developments in and around the urban areas contribute towards major roads upgrading. The municipality has the O&M Unit with a Road Maintenance unit responsible for repairing small roads and closing pot holes. Need for road construction equipment to maintain gravel roads. Roads Forum has been launched in February 2012 and needs capacity building for effective operations. The municipality will participate in the Cacadu forum. The Municipality does not have the road network plan but there is a map that indicates all roads, distances and Sector Departments or Municipality responsible. The available fleet is compactor and TLB but not water cuts and own grader. There is no Road Maintenance Plan and no Storm Water Management Plan. The Municipality intends to ensure that a sustainable and cost effective service to the consumers within their area of jurisdiction is provided. Having an understanding of the current situation allows the most important aspect of the plan to be addressed is budget that will respond to the service level targets that will be provided to consumers, both in terms of level of service and quality of service.

Transport

No Integrated Transport Plan in the Kouga Municipality. There is a Forum at District level. There is no support from DoT. In terms of personnel there is no Transport Officer but only Protection Service Chief responsible for all protection services. There are no bylaws in place. There is a need for the Integrated Transport Plan therefore Cacadu should state their plans in terms of assisting their LMs.

Disaster Management and Emergency Services

No Integrated Disaster Centre except for information Centre and Fire Services Centre. One officer for Disaster Management is employed in the fire centre in Humansdorp and satellite office in Koukamma. The Municipality is in process of constructing a fire station in Hankey and in other areas. Vehicles are old 1998/99 and there is a need for the development of a Resuscitation Plan. Risk Officer that will focus on all Disaster related assessments also need to be in place. Disaster Risk Assessment has been done but the municipality is not satisfied and wants to do ward based one. The Disaster Management Plan developed by CDM is a desktop assessment hence a need for review. There is no intersection participation and that has been established at local level is not active. DLGTA should assist on the activation of committee establishment at local level and also at district municipality in terms of advisory committee Advisory Forums revival.