

Spatial and Infrastructure Analysis

8.1 COMMUNITY NEEDS ASSESSMENT

The following main community needs have been identified for the spatial and infrastructural arenas, and can be prioritised as follows:

- Roads
- Water
- Electricity
- Public Transportation
- Sewerage
- Sanitation
- Access to Land
- Stormwater management
- Land Tenure issues
- Clean Public Facilities
- Telephones and Land Use

8.2 SPATIAL OVERVIEW

8.2.1 LAND USE AND LAND NEED PATTERNS

The existing urban areas and settlements in Buffalo City are spatially fragmented, which is a feature of the entire municipality. The spatial fragmentation creates a negative urban dimension.

In Buffalo City, the following three main identifiable land use and land need patterns are identified :

- The dominant urban axis of East London – King William’s Town –

Dimbaza. These areas dominate as the industrial and service sector centres in the Buffalo City Municipality and attract people from throughout the greater Amatole region in search of work and better access to urban services and facilities.

- The second broadly characterised area comprises the fringe peri-urban and rural settlement areas, which whilst remaining under the influence of the urban axis described above, are distinct in character and land use patterns. These areas include the Newlands settlements (north of Mdantsane), those settlements that previously fell within the former Ciskei bantustan, and the Ncera settlements located west of East London.
- Thirdly, the commercial farming areas form a distinctive type of area. These areas are dominant in the north-eastern and south-western (coastal) sectors of the Municipality and are characterised by extensive land uses, with certain areas where intensive farming (irrigation-based) occurs.

The situation in the former East London, King William's Town and Amatole areas of jurisdiction can be summarised as follows:

- The former East London TLC area consisted mainly of two bigger urban centres, East London and Mdantsane. On the urban fringes there are smaller urban components like Gonubie, Berlin and Potsdam. The eastern boundary is restricted by the Indian Ocean. East London serves as the primary node in the region and Buffalo City.
- The former King William's Town TLC area can be identified as a spatially fragmented area with King William's Town being the main urban area. The other urban areas were situated on the outlying areas and included Bisho, Ginsberg, Zwelitsha, Phakamisa, Breidbach, Ilitha and Dimbaza. King William's Town serves as a secondary node in the Buffalo City region.
- The former Amatola District Council area consisted mainly of rural settlement areas and commercial farming. The rural settlements are mainly situated to the western and southern parts of Buffalo City and the commercial farming more to the northern parts of Buffalo City.

Many factors have contributed to the way settlement patterns are manifested in the Buffalo City Municipality. Out of this, the legacy of apartheid and Bantustan policies are recognised as the main contributing factors.

A key issue to deal with is the balance of the urban development with the rural development, in order to reduce the pressure on urban areas and ensure that productive agricultural land is utilised. The challenge facing Buffalo City is how and

to what extent the municipality can actively involve itself in the simultaneous development of the rural as well as the urban areas in order to strengthen the economic and social base of the entire area. The stronger the surrounding rural economy, the greater will be the benefit to the urban centres, and vice versa.

Refer to Map B8: Current Spatial Plans; Amatole, KWT CUP and EL Framework Plan

Refer to Map B10: Land Cover; Current Situation

8.2.2 LAND TENURE SYSTEMS IN BUFFALO CITY MUNICIPALITY

There are five types of tenure in Buffalo City:

Freehold Title

Title deeds are issued through the National Deeds Registry. This form applies to land owned mainly by whites but also in places where land was owned, in the past, by blacks.

Quitrent Tenure

Quitrent tenure involves restricted or conditional ownership of residential and arable land but not commonage. While the latter was originally intended for sole use of quitrenters, it was later opened up for all rights holders. Quitrent sites devolve through inheritance and may only be sold in specific, limited circumstances.

Communal Tenure

This involves the allocation of individual rights to residential and arable land, but communal access to commonage. Land allocations have historically been made by headmen, but all land is owned and administered by the state.

Permission to Occupy

This applies in all non-freehold areas, i.e. all the quitrent communal and trust areas. This was the accepted method of recording site holders who did not have quitrent or African freehold rights.

Tribal Trust

This applies to a block of land in the Chalumna area of the East London district, which was transferred in title to a Tribal Trust under the control of Chief Jongilanga and his indunas in 1998.

8.2.3 LAND TENURE – UPGRADING OF EXISTING TENURE RIGHTS

There is an overwhelming demand for the upgrading of existing tenure rights in the Buffalo City Municipality. However, before this can be done, the question of

overlapping rights (which in most cases led to loss of land rights in the Commonage) will have to be resolved. Overlapping rights to land is a phenomenon that occurs in most historically black-occupied areas where rights over traditional commonage areas are contested between long-term occupiers (usually with some form of title) and later arrivals.

This situation is complicated by the fact that many long-term occupiers gained access to land as a result of tenancy or share-cropping arrangements with title-holders; or they are descendants of the original title holders. Rights were granted to later arrivals in terms of the PTO system, while those without formal rights are protected by the Interim Protection of Land Rights Act (IPLRA), which not only protects, but also recognises real user rights in land.

In all of the more traditional and rural areas in the Buffalo City Municipality, an enormous administrative task will be to adjudicate overlapping rights and loss of rights in the commonage. What is urgently needed is the development of a policy framework on this issue by the Department of Land Affairs to provide clear legal guidelines to back up tenure reform in these areas. While the Upgrading of Land Rights Act provides the legal mechanism for upgrading rights, it does not solve the problem of overlapping rights that led to the dispossession of commonage rights. The Land Titles Adjustment Act provides a legal mechanism for establishing, through a Commissioner, who the titleholders are, but it similarly does not provide guidelines for working out a process of rights enquiry into other rights holders.

Refer to Map B9: Land Tenure

8.3 SPATIAL KEY FINDINGS

The key findings within the spatial context can be summarised in the following weaknesses, threats, strengths and opportunities.

8.3.1 WEAKNESSES AND THREATS

Buffalo City is historically characterised by social segregation and spatial fragmentation. There is a limited awareness of the importance of rural-urban interaction, and subsequently there is a limited economic interaction between rural and urban areas. The rural hinterland areas are economically under-developed and are home to a significant proportion of the municipal population that would be classified as economically dependent. A threat lies in a continuous low awareness of the importance of intensifying rural-urban interaction towards mutual benefits and sustainable development. Generally, there is a negative national perception of the East London area as a potential economic hub within the national context.

There is a threat in the perceived competition for investment and economic growth (at a national level) between Buffalo City and the Nelson Mandela Metropole, which could compromise commitments to invest in East London.

A weakness lies in the complex legal and socio-cultural dynamics that characterise land holdings and both formal and informal land tenure arrangements in the peri-urban and rural settlement areas. Furthermore, the current spatial development pattern of Buffalo City does not facilitate sustainable use of available resources in the urban, peri-urban or rural settlements.

The informal and unmanaged settlements in the urban and urban-fringe areas threaten to erode asset values in land and the environment, to the detriment of economic growth potential and the aesthetic advantages of the area.

8.3.2 STRENGTHS AND OPPORTUNITIES

Both King William's Town and East London have important functions: King William's Town's presently functions as a Regional Service Centre and is positioned as a Provincial Administrative Centre, while East London is the dominant economic centre within the broader area of the Amatole District Municipality. There are good opportunities to further strengthen King William's Town as a qualified and diversified regional service centre and Provincial Administrative Centre, as well as to further strengthen East London as a vibrant and diversified economic centre by focusing on economic clusters and obtaining benefit from national government trade and industry programmes.

East London is the dominant node within the East London – King William's Town Development Corridor, while King William's Town has a position as a growth node within the Development Corridor. The area is attractive for in-migration and positive population development as a result. There are good opportunities to further explore the potential of the corridor concept, capitalising on the potential positive and complementary relationship between the dominant economic node of East London and the pre-eminent administrative centre of King William's Town/Bisho. Complementing the existing economic activity nodes, specifically the King William's Town CBD, will lead to synergy effects for general economic development.

King William's Town is a comparatively small town with relatively short distances to services, and it is of interest to further explore the potential of the medium-sized town concept as a complement to the Buffalo City urban fabric.

The aesthetic quality of the natural environment, the beautiful landscape and scenery characterises the locality of Buffalo City and its coastal surrounds. The natural environment can form a valuable base for tourism development. The built environment and the cultural heritage, especially represented by the Xhosa

cultural heritage and history, can be an equally valuable base for tourism development.

An important strength lies in the emerging coherent planning system aiming at equal opportunities and increased interaction between the rural and urban societies towards sustainable development. It is furthermore of importance to harness the national government's commitment to land reform (including land restitution, land redistribution and land tenure reform) to develop more equitable access to land for different needs and to develop rural economic development programmes.

8.4 INFRASTRUCTURE OVERVIEW

8.4.1 TRANSPORTATION AND TRAFFIC SAFETY

Transportation is one of the fundamental needs of people, after food and housing it is possibly one of the strongest needs. It provides the essential link between activities and it is also one of the important factors for promotion of social and economic development. It has a major impact not only on the physical form of the city but also on its liveability. It provides the essential link between activities and it is also one of the important factors for promotion of economic development. In Buffalo City, another aspect is that it has the potential to be used as a powerful tool in the integration process.

The network of roads and streets reflects past policies. The estimated total of the road network (excluding the very minor access roads) is in the range of 3,130 km, of which 1'700 km are untarred roads. The standard of the road network varies considerably and so does its utilisation.

Much of East London and also parts of King William's Town are traditional urban areas with an organised street network suitable for vehicular traffic. In the developed urban areas, in particular East London, the street network would appear adequate for the amount of traffic it is required to handle, although there is certainly scope for addition and improvement. However, due to the great inefficiency of the predominant public transport system (the minibus taxis) from the point of view of road space utilisation, parts of this network are congested.

In Duncan Village, transport infrastructure is almost non-existent and the main mode of transport is walking, but few facilities have been provided to facilitate this type of transport. As a consequence, bus transport is not possible (only sedans operate within the area) and emergency services cannot get access.

In Mdantsane the main transportation need is directed to and from East London, mostly provided with para-transit services (minibus taxis). The road and street

network in Mdantsane appears better-planned compared to Duncan Village, and although its quality may not be very good everywhere, there is at least a structure and better preconditions for the future. The pattern of internal transportation within Mdantsane is not well-known, but the majority of such trips appear to be pedestrian.

The rural villages that dominate a major part of Buffalo City are connected between themselves and to larger urban configurations – King William’s Town in particular – by gravel roads. Much of the travel demand from the rural villages is directed towards King William’s Town and is undertaken either by taxi or by walking.

Deficiencies in the road infrastructure, such as lack of pedestrian facilities, have negative impacts on traffic safety aspects. The Quality of Life Survey carried out in Buffalo City in 2001 indicates that nearly two-thirds of the children in Buffalo City walk to school. Less than 2% of the population travel by bus to school and work. Roughly the same number of people travel by bicycle, motorcycle, train or lift club.

The public transportation system in Buffalo City can be described as unsustainable, unsafe, unregulated, ineffective, not accessible or affordable and supply-driven, and therefore not adequately meeting the needs of the community.

The city is experiencing a growing trend of private car use that will lead to capacity, congestion and traffic safety problems in the future. The total number of public transport trips is equal to 65 public transport trips per inhabitant and year. This is a low figure and indicates a low level of mobility in Buffalo City Municipality.

The lack of mobility, limited access to participate in economic and social activities and opportunities will not only affect the quality of life in Buffalo City but is also one of the main obstacles for an economic growth of Buffalo City. The development of Buffalo City will thus be dependent on a combination of land use, transportation and economic development.

Transportation is also a financial burden on the poorer groups with costs for transportation totally disproportionate to their general expenditure on food, shelter and other basic needs. This has implications on their ability to find work, access economic information or run a micro-business. Economic development will be dependent on better mobility and the demand for public transport i.e. travel will increase when walkers change to public transport.

An improved public transport system is essential to increase mobility and accessibility. Transport planning will therefore focus on the development of a public transport system as part of an integrated transport plan.

Refer to Map B11a & 11b: Infrastructure; Current Situation (roads, dams, rivers, water/treatment works, bulk infrastructure of sewerage, electricity, etc.)

8.4.2 WATER & SEWERAGE

8.4.2.1 Water

Raw Water Storage Dams

Adequate water and sanitation supply is essential for the health and well-being of people. Poor provision of these services impacts severely on the natural environment e.g. through pollution of rivers.

Water supplies to the main urban areas of Buffalo City form part of the greater Amatola Water Resources System. The system is a complex one and made up mainly of surface water resources with the groundwater resource of the area suitable only for localised schemes. The following main water supply schemes supply the Buffalo City area with water:

- Upper Buffalo Water Supply Scheme
- Middle Buffalo Water Supply Scheme
- Lower Buffalo Water Supply Scheme
- Sandile Regional Water Scheme
- Amatola Water Supply Scheme

The purpose of the Amatola Water Supply Scheme is to augment the water supply to consumers currently served by the Upper, Middle and Lower Buffalo Scheme, as demands exceed the capacities of these schemes.

Buffalo City owns and operates two raw water storage dams, namely Bridle Drift Dam in the lower Buffalo Catchment and Maden Dam in the Upper Buffalo Catchment. There are other dams in the Amatole System that are operated by the Amatola Water Board for the purposes of supplying water, but the combined yields of the dams in the Amatola System and the water provision backlogs for Buffalo City indicate that a new raw water source will have to be identified and developed before 2010. Without a new raw water source in operation by 2010, the backlogs cannot be fully addressed and future significant industrial development will not be possible.

Surface water supplies are obtained from the following dams within the municipal area:

- Maden Dam on the upper Buffalo River
- Rooikrantz Dam on the upper Buffalo River
- Laing Dam on the lower Buffalo River
- Bridle Drift Dam on the lower Buffalo River

- Nahoon Dam on the Nahoon River

Water Treatment Works

Buffalo City owns two water treatment works for potable water production, namely the Umzoniana Water Treatment Works and the King William's Town Water Treatment Works. Umzoniana, with a capacity of 120 million litres per day, supplies the erstwhile East London and 60% of the demand of Mdantsane. These works are currently producing on average 110 million litres of water per day and will have to be upgraded within the next two years in order to cater for further development as will be required at current growth rates. Furthermore, the bulk conveyance infrastructure for transporting water to Mdantsane is at capacity, and this will hamper development in that area. The area is already under constant threat of water shortages as a result of conveyancing bottlenecks.

The King William's Town treatment works was recently upgraded from a capacity of 7 to 12 million litres per day and supplies part of the erstwhile King TLC with water. These works cannot be increased any further due to limited yield in the Upper Buffalo Catchment. The focus here must be on improved maintenance to ensure optimum infrastructure availability.

The City is in the process of taking over a small package plant that services the Needs Camp area and some villages from the Department of Local Government and Housing. This water supply scheme currently produces water of unacceptable quality and will require upgrading. The optimal situation of the works will need to be reconsidered in the light of possible raw water starvation during drought conditions.

Water Distribution Infrastructure

The City has a vast network of water distribution infrastructure consisting of pipes, valves and meters. The infrastructure has deteriorated as a result of ageing and the corrosive effects in some cases of unstabilised water (soft water). Ageing infrastructure is prone to bursts and leaks, with the consequent increase in water loss. The incidence of bursts has been increasing over the last few years. The City will have to embark on a systematic replacement programme to ensure that the infrastructure continues to function economically.

Water Backlog

The Quality of Life Study indicates that the majority of the traditional areas (72.3%) and informal areas (89.5%) rely on standpipes for their potable water supply. The current Water Services Development Plan investigation indicates the following in respect of backlogs to access to basic water service (% of population).

TABLE 8.1 : Water Backlog

	EL	KWT	RURAL	TOTAL
Water	16,8 %	5.7 %	3.5 %	26.0%

The total percentage of 26 % refers to RDP standard of water supply, viz. less than 200m from standpipe. The percentage of population without access to potable water is much lower.

In the rural areas a water requirement of 25 litres per person per day is assumed and 200 litres per person per day is assumed for urban populations. Based on these assumptions, the number of people that can theoretically be provided with groundwater per km² (population support capacity) is as follows:

- Rural Population Support Capacity of 800 – 2,000 persons/km²
- Urban Population Support Capacity of 100 – 300 persons/km²

In general, groundwater is available for use; however, the quality and yield tends to be variable. The suitability of ground water for use in rural village water supply systems will need to be determined on an individual project level. Due to the fact that the Abstraction Potential (what may be withdrawn practically or economically) is less than the Harvest Potential (what may be withdrawn sustainably) very little chance of over-exploitation exists in this region.

Data on groundwater resources indicates that there is a possibility in local areas of supplementing local water supply schemes as well as local irrigation schemes by utilising this resource on a managed basis.

The major issues concerning water resources and infrastructure development plans for Buffalo City are as follows:

- Inadequate supply to certain urban areas (e.g. King William's Town, Mdantsane etc.)
- The inability to supply future "wet" industries (e.g. Berlin, West Bank, King William's Town etc.)
- The present and future quality of water in the Laing, Nahoon and Bridle Drift Dams.

- Water supply to the rural areas/settlements
- Non-existent, poor or deteriorating infrastructure and services in the previously disadvantaged areas, especially in informal settlements.
- The need for integrated management of water resources.

8.4.2.2 Sanitation

The Buffalo City Quality of Life Study indicates that 79% of people in traditional areas and 18% of people in informal settlements have access only to basic pit latrines. The WSDP indicates the following backlog in respect to access to sanitation :

TABLE 8.2 : Sanitation Backlog

	EL	KWT	RURAL	TOTAL
Sanitation	19.0 %	6.3 %	13.6 %	38.9 %

8.4.2.3 SEWERAGE

Within Buffalo City there are a number of treatment works, namely:

Gonubie Treatment Works

The area includes the informal housing settlements that are served with chemical toilets and/or pit latrines. Sludge dams are nearing full supply and need to be replaced. The works will reach capacity in a year with the proposed extensions in this catchment area.

The infrastructure in the area is relatively new, and sewerage pump stations have been upgraded and augmented over the past 4 years.

East Bank Treatment Works

The works are fed from three major pump stations, which are all in need of replacement, refurbishment or upgrading of their capacity.

The infrastructure here has some of the older and most overloaded sewers in the City. This is particularly evident along the Eastern Beach to Bats Cave section, where one of the three sewers dates back to the late 1930s. These sewers are at the limit of their hydraulic carrying capacity and have long outlived their design life. This places some limitations on future developments within this catchment.

Central Treatment Works

This area includes small informal housing settlements served mainly with pit latrines. This plant is presently overloaded organically and needs to be upgraded or flow diverted away to other treatment works.

Further development or densification of the area is curtailed due to capacity problems of some of the older sewers in the area. The area is characterised by large numbers of squatters who do not have direct access to running water or

sanitation. This necessitates the use of rivers and streams in the catchment for their cooking and ablution needs, often resulting in dangerously high levels of pollution of the environs.

West Bank Treatment Works

The area includes the informal housing settlements that are served with chemical toilets and/or pit latrines. No staff have been appointed to operate the works nor has an operating budget been provided for.

This area has the oldest sewers in the City. A concentrated industrial area contributes largely to the effluent generated in the area. In the past this effluent was corrosive to these sewers, destroying the sewer running down Bank Street.

Reeston Treatment Works

Infrastructure is currently being constructed for this area. The area includes an informal housing settlement that is served with chemical toilets and/or pit latrines. No staff have been appointed to operate the works nor has an operating budget been provided for.

Mdantsane East Treatment Works

This is the larger of the two catchments in Mdantsane. The area includes the small informal housing settlements and “Buffer Strip” informal housing served mainly with pit latrines. This plant, which is currently overloaded, is owned and operated by DWAF, but is in the process of being transferred to Buffalo City.

This area has a deteriorated sewerage system. This is largely due to pitch-fibre sewers installed in the mid-1970’s having reached the end of their functional lifespan.

The work that has been done since the amalgamation of East London with Mdantsane has had a significant impact on the environment and noticeable improvements in the water quality of the streams, as well as a tremendous increase in the flow reaching the works.

Mdantsane West Treatment Works

This is the smaller of the two catchments in Mdantsane. The area includes small informal housing settlements and Buffer Strip informal housing served mainly with pit latrines. The plant is owned and operated by DWAF, but is in the process of being transferred to Buffalo City.

Approximately 80% of the residents are served by a water-borne sewerage system installed during the late 1960s and early 1970s. A serious concern is the

overloading of some of the sewers. The pitch-fibre sewers in the area are a great concern and have reached the end of their functional life.

Berlin Treatment Works

The area is characterised by the industrial area and small informal housing settlements served mainly with pit latrines.

The plant was built in the 1970's mainly for the Berlin Industrial area but has never received a substantial flow. With the Berlin/Lingelitsha area now being reticulated, the plant is being re-commissioned at present. This area is generally served by Council's vacuum-tanker service, with only the sparsely populated industrial area on waterborne sewerage.

Refer to Map B12: Sewerage and Sanitation; Current Situation

Refer to Map B13: Water; Current Situation

8.4.3 ROADS & STORMWATER

The road network affects the entire area of Buffalo City Municipality. Poor road conditions, coupled with high vehicle usage, maintenance and repair costs, portray a poor image of the city, making it unattractive to prospective investors, developers and industrialists. It also discourages public transport.

A large percentage of Buffalo City's road infrastructure is old and is deteriorating rapidly. It is difficult to quantify the rate of deterioration of the road, storm-water and sidewalk infrastructure, but from general observations they are all reaching critical levels. In some respects, in certain areas of the city, critical levels have already been surpassed.

A conservative estimate puts the replacement costs of the road infrastructure at approximately R1,8 billion. In the recent past the annual increases in maintenance budgets have not kept pace with the escalation rates applied to labour, material and transport costs inherent in these maintenance activities.

Capital allocations have enabled the resurfacing of 20% of the roads over the past 6 years. i.e. an average resurfacing rate of once every 24 years. In order to raise the level of maintenance and ensure that the resurfacing programme keeps pace with the expected life of the new surfacing, roads with a chip and spray surface will require to be resurfaced every 5 – 10 years and those with a premix surface, every 10 – 15 years depending upon pavement structure and traffic loading.

In areas such as Mdantsane, and other rural areas where the road infrastructure has had little or no maintenance for up to 25 years, major rehabilitation to surfaced roads is required. A large proportion of the roads are gravel, which in time should be surfaced. Funding for the upgrading of these roads is also important as

maintaining gravel roads to an acceptable standard is very costly and of short duration.

Road inspections for the updating of the Pavement Management System are undertaken every 3 years on average, to monitor road conditions and prioritise roads for various treatments.

8.4.4 ELECTRICITY

The current situation with regard to the electricity network in Buffalo City is that it is in very poor condition, giving rise to frequent power outages. The main reason for this is the budget constraints which force the Electricity Department to cut down on maintenance and replacement or upgrading of equipment.

As indicated by the Quality of Life Survey carried out in Buffalo City in 2001, just over 75% of homes in Buffalo City have access to electricity. There are however big differences when it comes to access to electricity by settlement type. Almost 90% of homes in the informal areas have none, while about the same percentage on the formal areas have it. In traditional areas, nearly 80% of households have access to electricity, with almost all of this being prepaid. Roughly 75% of all households use electricity for lighting, which is quite a lot higher than the number of households using electricity for cooking (53%).

At present, Eskom provides electricity supplies to the areas outside the licensed areas of supply of the former King William's Town and East London municipalities.

Below, the electricity infrastructure is described for the different areas within Buffalo City.

8.4.4.1 Gonubie

The electricity network consists mainly of vertically constructed low voltage overhead reticulation and horizontally constructed overhead medium voltage reticulation.

The low voltage network is generally operating close to its limits in relation to current carrying capacity and/or volt drop. This has given rise to a number of low voltage complaints in recent years. In addition, several pole transformers and miniature substations have failed due to overload conditions. Some of the pole transformers are in a deteriorated condition due to corrosion.

The medium voltage network is generally in a poor condition and this, combined with the heavy loading of the low voltage network, gives rise to frequent power outages.

8.4.4.2 Beacon Bay

The electricity network consists mainly of vertically constructed low voltage overhead reticulation. The medium voltage network is by and large underground.

The low voltage network is generally in a good condition. The medium voltage network needs to be partly reinforced. The load control system master station has reached the end of its useful life and needs replacement.

8.4.4.3 Former East London / Gompo Area

The electricity network consists of a mixture of horizontally constructed bare overhead conductors, aerial bundled overhead conductor and underground cable for the low voltage network. A programme for the replacement of deteriorating bare overhead conductors with aerial bundled conductor has been implemented. Many of the substations are over 50 years old and the medium voltage switch-gear, low voltage equipment and feeder cables are in need of replacement or repair.

The medium voltage network consists of paper-insulated underground cables. The network is generally heavily-loaded and needs to be upgraded to meet the demands for additional power necessitated by housing infill schemes.

The demand for power for housing projects for about 4000 sites in Reeston will necessitate the provision of an additional 132/11 kV tertiary substation in the area.

8.4.4.4 Mdantsane / Potsdam

The low voltage electricity network consists chiefly of vertically constructed bare overhead conductors and aerial insulated bundled overhead conductors. Pole transformers are generally used. The medium-voltage network consists of open wire horizontally constructed conductors. The condition of the reticulation network is generally good. Large areas such as Zone CC, Buffer Strip & Potsdam Village remain as yet un-electrified. Large un-surveyed informal areas such as Potsdam East are also un-electrified.

8.4.4.5 King William's Town and Breidbach

The condition of the medium voltage (11KV) systems of King William's Town and the surrounding areas of Ginsberg, Schornville, Breidbach, Ballassi Valley, Sweetwaters, Acorn Valley & Qalashe are of high quality & outages are only experienced due to storm damage or vandals causing short-circuits on the overhead lines. The low voltage network is generally in good condition although there is a low voltage problem in Breidbach. Streetlighting has been upgraded and is in good condition. However, dark areas are being brought to the department's attention. These will be addressed in due course, subject to availability of funds.

8.4.4.6 Dimbaza, Ilitha and Zwelitsha

The medium voltage electricity network is horizontal overhead system, which is in a very poor condition. The low voltage network consists mainly of vertical overhead lines which are also in a very poor condition causing numerous failures due to overloading of circuits and transformers, unbalanced loads, volt drops etc.

8.5 INFRASTRUCTURE KEY FINDINGS

The key findings within the infrastructure context can be summarised in the following weaknesses, threats, strengths and opportunities.

8.5.1 WEAKNESSES AND THREATS

A weakness in the rural areas of Buffalo City is the inadequate road network and public transportation system linking the rural and urban communities, since the fragmented settlement patterns in rural areas do not easily allow for public transport systems to be established. The result of this is a lack of mobility of the economically disadvantaged.

On a general level, Buffalo City lacks resources for upgrading of rural transportation and bulk infrastructure networks. The effects of the insufficient funding of the roads are already evident. The increasing number of potholes in the roads throughout the city and the extended time taken to effect repairs is evident. Stormwater systems block on a regular basis throughout the city resulting in flooding of roads and in some cases private property. The entire road infrastructure is deteriorating to levels where the costs of rehabilitation is impossible to provide.

Concerning electricity infrastructure, the lack of maintenance and replacement or upgrading of ageing infrastructure poses a serious threat and dangers in the future.

8.5.2 STRENGTHS AND OPPORTUNITIES

Important infrastructural strengths and potentials that need to be further developed are Bulembu Airport and King William's Town's position as a regional road transportation hub, as well as East London's river harbour, airport and existing railway infrastructure.

It is furthermore very important to improve the quality of the rural road networks and thereby upgrade levels of mobility and access to opportunities both in the urban and rural areas.

An opportunity lies in the present settlement pattern of the greater East London area (including Mdantsane), which forms a corridor structure that may be utilised for the development of a more efficient public transportation system.