BA-PHALABORWA

BA-PHALABORWA LOCAL MUNICIPALITY

NEIGHBOURHOOD DEVELOPMENT PARTNERSHIP GRANT

PROJECT BUSINESS PLAN

NAMAKGALE AND LULEKANI INTERMODAL BUS AND TAXI RANK SYSTEM AND HAWKER FACILITIES

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PDNA Engineers were appointed by the Ba-Phalaborwa Local Municipality (BPLM) to support the LM to:

a). Compile an urban renewal strategy
b). Compile business plans for 6 projects identified by the Ba-Phalaborwa sustainable development strategy (heritage centre, MPCC, cultural village, flea market, 2x taxi ranks). The projects have already been constructed.

The programme is part of National Treasuryôs Neighbourhood Development Partnership Grant (NDPG) to eradicate poverty through the upliftment of previously disadvantaged areas. The main aim is to stimulate investment through urban upliftment (renewal).

It is planned that the PDNA urban renewal strategy (URS) will be competed in April 2012. Ideally it is required that the strategy and business case precede the development of he project business plans in order for the strategy to support the projects as a business case. It is however anticipated that information from the URS will be used to augment the project plans.

The project forms part of the initial package of projects that was identified as ñquick winò projects that can stimulate other development, and will have an impact on the ultimate goals of the programme.

The purpose of this project plan is to provide sufficient information to treasury on the intermodal bus and taxi ranks and hawker facilities in Namakgale and Lulekani, in order for National Treasury to approve funding for the project.

2. Background

2.1 General

The Urban Renewal framework has the aim of integrating the strategies, goals, objectives, land use policies and guidelines of National Government, Government and Ba-Phalaborwa Local Municipality into an urban and rural development framework. This framework will provide a business case and development concepts with projects that can be funded by the neighborhood Development Partnership Grant. This will then act as catalyst for public as well as private investment as well as the formation of Public Private Partnerships in historically disadvantaged areas. The framework involves the integration of town planning, economic analysis, transportation and road planning, urban planning and water services engineering to ensure the future sustainability of investments. The framework further has the aim to ensure the enhancement of quality of life.

The future development and growth of the area will require positive public as well as private interventions in order to create sustainable investment and business confidence within the area. These interventions require:

- proper planning and direction
- funding capital

d regional level.

This Business Plan for the bus and taxi ranks and hawkers facilities "quick win projects" is part of the abovementioned interventions which will eventually feed into the further detailed planning and implementation phases of the urban renewal plans.

2.2 Intermodal bus and taxi ranks and hawkers facilities

In the existing township regeneration strategy (TRS) the spatial rational put forward is as follows:

Market segment evolving within second economy nodes:

A segment that reflects lower living standards, supported by low levels of mobility, predominant reliance on public transport and a demand towards the lower to middle spectrum of commercial and residential products. In general these consumers are relatively immobile in terms of choice; e.g. low income households move to where low cost housing is provided, they predominantly conduct retail purchases at facilities provided locally or at places of employment.

From the TRS this results in the emergence of the following development trends:

(e.g. Pan Africa) ï the positioning of commercial development at intermodal public transport facilities. These facilities in general cater towards the lower LSM brackets and have a strong convenience base providing lower to middle-end products and services.

A large portion of the workforce of Namakgale and Lulekani are transported daily to and from work via public transport (taxis and buses). The table below shows the total numbers of passengers that are transported per mode (transport to school or work) for the LM area.

			As percentage of total mode of transport excluding on foot								
Planning Area	**Town/Settlement**	**On foot as percentage of total**	**By bicycle**	**By motorcycle**	**By car as a driver**	**By car as a passenger**	**By minibus/taxi**	**By bus**	**By train**	**Other**	**Total**
A1	Humulani	74.76	3.74	1.09	8.47	9.66	33.50	41.33	1.14	1.06	100.00
a1	Ruskamp	11.11	0.00	0.00	37.50	43.75	18.75	0.00	0.00	0.00	100.00
A2	Ben Farm	67.06	2.63	0.84	3.53	7.83	20.10	61.24	2.03	1.79	100.00
B1	Ga-Makhushane	71.00	3.36	0.53	2.44	5.66	36.73	49.97	0.39	0.92	100.00
B1	Namakgale	58.91	0.78	0.37	9.46	9.06	34.28	44.65	0.47	0.93	100.00
B2	Ga-Mashishimale	72.48	2.15	0.20	3.69	9.47	56.41	26.80	1.28	0.00	100.00
B2	Mashishimale	74.85	0.00	0.00	0.00	0.00	68.85	31.15	0.00	0.00	100.00
B2	Ba Shai-Ditlou	81.53	0.00	0.00	10.34	20.69	27.59	41.38	0.00	0.00	100.00
B3	Ba Phalaborwa Ba Nakome	67.86	5.56	0.88	6.73	8.48	35.67	41.52	1.17	0.00	100.00
C	Mahale	91.98	16.98	5.66	11.32	49.06	0.00	16.98	0.00	0.00	100.00
C	Nondweni	95.30	20.00	20.00	0.00	20.00	20.00	20.00	0.00	0.00	100.00
C	Ga-Selwana	95.80	8.16	3.06	19.39	24.49	6.12	25.51	0.00	13.27	100.00
d	Gravelotte SP	61.39	0.00	0.00	48.72	29.49	0.00	14.10	3.85	3.85	100.00

Planning Area	Town/Settlement	On foot as percentage of total	As percentage of total mode of transport excluding on foot								
			By bicycle	By motorcycle	By car as a driver	By car as a passenger	By minibus/taxi	By bus	By train	Other	Total
d	Gravelotte Township SP	16.35	5.00	0.00	1.36	2.73	65.00	25.91	0.00	0.00	100.00
E	Phalaborwa Part 1 SP	21.65	8.59	3.86	49.76	31.14	3.17	1.87	0.48	1.14	100.00
f	Masala	93.49	0.00	0.00	21.43	21.43	0.00	57.14	0.00	0.00	100.00
G	Letaba NU	90.72	14.33	6.74	11.80	33.99	10.96	11.52	0.84	9.83	100.00
G	Lulekani NU	53.07	1.31	0.00	25.76	47.16	11.79	12.66	0.00	1.31	100.00
G	Namakgale NU	83.79	0.00	0.00	12.77	59.57	27.66	0.00	0.00	0.00	100.00
G	Phalaborwa NU	68.76	4.34	12.76	20.41	48.98	5.10	4.59	0.00	3.83	100.00
G	Die Eiland SP	70.00	25.00	0.00	25.00	25.00	25.00	0.00	0.00	0.00	100.00
G	Letaba Ranch SP	80.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	100.00
g	Murchison SP	49.04	0.00	0.69	26.12	16.15	2.58	53.44	1.03	0.00	100.00
Total	NP334: Ba Phalaborwa	63.36	4.18	1.81	20.36	16.76	24.31	30.67	0.72	1.18	100.00

Source: Census 2001

The IDP states that the majority of people in the Municipal area do not own and use private transport. They rely on public transport to commute in and out of town on a daily basis. **However there is no link between taxi and bus services as the two major forms of public transport.**

There is therefore a need for an inter-modal public transport system. This will require the construction of integrated bus and taxi ranks at strategic points in the municipal area.

From the table above the percentage of people using busses and taxis in 2001 is 30.7% and 24.31% respectively.

From the 2010/2011 IDP the number of people using bus and taxis in 2008 was 6144 and 7405 respectively. This figure seems low in comparison to the figures obtained in section 5.2 and the 2001 census. For the purpose of this report the 2001 census figures will be assumed.

In order to address the need as indicated in the IDP, new inter-modal public transport systems are required that will ensure:

a). **Organised access to public transport**
b). **Safer conditions at terminals**
c). **Integration between the 2 modes of transport**
d). **Concentration of commuters that will stimulate the economy and will lead to the development of small businesses and will create jobs**
e). **More effective loading of passengers and therefore the reduction in waiting time (more passenger satisfaction)**

It is proposed that 2 bus and taxi ranks with hawkers facilities be established at strategic points in Namakgale and Lulekani. The bus/taxi rank with hawkers will only be the first phase and it is envisaged that the transportation hub will grow with the addition of shops, carwash and organised hawkers.

ties specifically if it is grown into a larger business hub will nd will be a valuable building block in the urban renewal

Given the high levels of unemployment in the area, valuable employment opportunities associated with the construction of the bus and taxi rank and hawkers facilities will be created.

The position of the bus and taxi rank and hawkers facilities will be determined through surveys and interaction with stakeholders.

3. Project vision and objectives

3.1 Project vision

The project vision is to create a sustainable intermodal Public transport facility (bus and taxi rank and hawkers facilities) that can serve the transportation needs of specifically Namakgale and Lulekani as well as other Ba-Phalaborwa communities. The facility must also stimulate economic growth with the addition of small business at the intermodal facility and also create temporary and permanent jobs.
The project will form a very important building block (sense of being) in the overarching urban renewal strategy.

3.2 Project objectives

The main objectives of the project are to:

- Construct an intermodal Public transport facility (bus and taxi rank terminal) in Namakgale and Lulekani at the identified positions. The terminal will form a key component of the daily transporting of local residence to and from their workplace. The terminal will be constructed in phases as follows:
    - Phase 1:
        - Entrance and exit , pickup and drop off zones
        - Parking and holding area
        - Public ablution facilities
        - Hawkers facilities
        - Offices
    - Phase 2:
        - Increase parking and holding areas and pick up and drop off zones
        - Carwash
        - Other retail facilities (eg filling station)
        - Mobile phone centre/air-time outlet,
        - Small fresh produce outlets,
        - Hairdressers,
        - Cooked food vendors,
        - Meat vendors,
        - Tailors,

alls,

- The taxi and bus rank will improve the current public transport system and will increase local passenger satisfaction and decrease public transport customer fatigue
- The taxi rank will stimulate other local economic development (more feet)
- Improve monitoring and regulating of taxi and bus operations.
- Improve safety at taxi and bus ranks
- The project will enhance safety, security and cleanliness
- Enhance on the image of the identified areas with the potential to change peopleõs lifestyle through an entrenched safety and security in the areas identified.
- Create a sense of pride and being
- The project is an important building block in the overall urban renewal strategy

4. Project scope (Phase 1)

The project will consist of the construction of 2 intermodal Public transport facilities (bus and taxi rank terminals) in Namakgale and Lulekani. The preliminary identified positions of the facilities can be seen on the attached map in Annexure A.

- Safe access (entrance and exit) to main roads
- Bus and taxi stops with Pick up areas and Drop off areas
- Bus terminal
- Area for long distance taxis
- Holding and Parking areas
- Public transport interchange facilities
- Hawkers facilities
- Ablution facilities
- Office

5. Status Quo

5.1 General

There are currently no similar intermodal Public transport facilities in Namakgale and Lulekani, that also creates the opportunities for other local economic development opportunities and activities like shops, carwashes, filling station, etc.

A preliminary layout of the high, medium and low volume taxi and bus routes are depicted in Annexure B. The information will be confirmed and refined through stakeholder interactions (bus companies and taxi associations). Calculation of daily vehicle and passenger trips will also be included in the transportation study that will be included in the urban renewal strategy (to be finalised in April 2012).

Challenges experienced on a daily basis are as follows:

nd bus services as the two major forms of public transport. completion between the 2 modes to the detriment of the passengers

- The area earmarked for the development of a PTI in Phalaborwa is currently undeveloped
- The access to existing the bus and taxi stops and terminals are unsafe (will require re-configuration and control).
- Current operations appear to be basically chaotic and will require a lot of organization and self-discipline to move into a proper public transport system with appropriate facilities.
- The basic need of taxi holding areas when they are not serving customers.
- The current bus and taxi rank facilities in Gravelotte, Namakgale, Lulekani, Makhushane, Mashishimale, Benfarm and Matiko-Xikaya are temporary and without the necessary infrastructural facilities like toilets and hawkers stalls.
- The existing temporary taxi rank in the identified areas are not demarcated, formalized and marked to maintain an orderly transport and traffic flow.
- The mushrooming of hawkers around taxi ranks makes the areas unclean and difficult to maintain.

5.2 Taxi and bus operators

Existing operators in the Ba Phalaborwa area are as follows:

Existing operators	
Mode	**Operator Name**
Taxi	Phalaborwa long distance
	Lulekani Taxi Association
	Phalaborwa Taxi Association
Bus	Mega Bus
	Great North bus

Preliminary information on taxis and buses and passengers transported daily can be seen below:

Mode	Name	Approximate numbers of taxis and busses	Average Loads per day (high volume routes)	Average Passengers per taxi /bus	Passengers Transported daily
Taxi	Phalaborwa long distance	200	7	13	18 200
	Lulekani Taxi Association	90	7	13	8 190
	Phalaborwa Taxi Association	400	7	13	36 400
Bus	Mega Bus	6	3	65	1 170
	Great North bus	40	3	65	7 800
Total					**71 760**

The routes travelled can be seen below (also see Annexure B for travel routes).

Routes travelled			
No	**From**	**To**	**Volumes**
1	Namakgale	Phalaborwa	High
	Phalaborwa	Namakgale	
2	Namakgale	Lulekani	Medium
	Lulekani	Namakgale	
3	Namakgale	Tzaneen	Low
	Tzaneen	Namakgale	
4	Namakgale	Giyani	Low
	Giyani	Namakgale	
5	Namakgale	De Ocks	Low
	De Ocks	Namakgale	
6	Namakgale	JHB	Low
	JHB	Namakgale	
7	Namakgale	Arcornhoek	low
	Arcornhoek	Namakgale	
8	Phalaborwa	Maseke	Medium
	Maseke	Phalaborwa	
9	Mashishimale	Phalaborwa	Medium
	Phalaborwa	Mashishimale	
10	Makushane	Phalaborwa	Medium
	Phalaborwa	Makushane	
11	Lulekani	Phalaborwa	High
	Phalaborwa	Lulekani	
12	Lulekani	Giyani	Low
	Giyani	Lulekani	
13	Lulekani	Arcornhoek	Low
	Arcornhoek	Lulekani	
14	Lulekani	Namakgale	Medium
	Namakgale	Lulekani	
15	Lulekani	Tzaneen	Low
	Tzaneen	Lulekani	
16	Lulekani	JHB	Low
	JHB	Lulekani	

5.3 Demographics

The demographic information from a house count conducted for this study can be seen below.

		use Count Total	Persons per stand	Total
A2	Ben Farm	2477	4	9908
A1	Humulani	2464	4	9856
A1	Kharula	1373	4	5492
A1	Lulekani A & B	1382	4	5528
A1	Matiko Xikaya	3289	4	13156
B1	Ga-Makhushane	1833	4	7332
B1	Namakgale	10294	4	41176
B2	Mashimale R1	636	4	2544
B2	Mashimale R2	1024	4	4096
B2	Mashimale R3	1792	4	7168
B3	Maseko	752	4	3008
C	Mahale	526	4	2104
C	Gaselwane	1674	4	6696
C	Nondweni	228	4	912
D	Gravelotte			990
E	Phalaborwa			25887
F	Prieska	162	4	648
Total		**27316**	**4**	**146501**

Source: Developed Stand Counts Laduma TAPP on 2009 Aerial Photography

5.4 Socio Economics

5.4.1 General

Socio Economic information is important as it assist the planning and design processes. The information below will be used by the planners to ensure that the infrastructure developed are in line with the socio economic landscape of BPLM.

5.4.2 Gender Distribution

The table below indicated the distribution of gender within the Planning areas.

Planning Area	Place	Male	Female	Total	% Males	% Females
0	NP334: Ba Phalaborwa	64124	66968	131092	48.9	51.1
A1	Humulani	14620	16606	31226	46.8	53.2
A2	Ben Farm	4720	4934	9654	48.9	51.1
B1	Ga-Makhushane	5260	5739	10999	47.8	52.2
B2	Namakgale	16518	16825	33343	49.5	50.5
B2	Ga-Mashishimale	5234	5678	10912	48.0	52.0
B2	Mashishimale	539	587	1126	47.9	52.1
B2	Ga-Mashishimale	192	219	411	46.7	53.3
B3	Ba Phalaborwa Ba Nakome	1262	1319	2581	48.9	51.1
C	Mahale	705	840	1545	45.6	54.4
C	Masala	182	207	389	46.8	53.2
C	Nondweni	287	365	652	44.0	56.0
C	Ga-Selwana	2098	2471	4569	45.9	54.1

		Male	Female	Total	% Males	% Females
		220	98	318	69.2	30.8
D	Gravelotte Township SP	250	168	418	59.8	40.2
E	Phalaborwa Part 1 SP	6590	6348	12938	50.9	49.1
G	Letaba NU	2762	2906	5668	48.7	51.3
G	Lulekani NU	436	255	691	63.1	36.9
G	Namakgale NU	188	166	354	53.1	46.9
G	Phalaborwa NU	1059	691	1750	60.5	39.5
G	Die Eiland SP	23	19	42	54.8	45.2
G	Letaba Ranch SP	19	11	30	63.3	36.7
G	Majeje SP	0	0	0	0.0	0.0
G	Ruskamp	27	29	56	48.2	51.8
G	Murchison SP	931	488	1419	65.6	34.4

Source: Census 2001

From the above table, it is evident that females are dominant in all areas indicating a strong absence of males in the western areas indicating migrant workers. **This is important as it seem to indicate that more females make use of local public transport which needs to be taken into consideration with the design of the facility as well as the future retail developments.**

5.4.3 Age Distribution

The age distribution in 2001 within the various Study Areas are as follows:

Planning Area	PLACE NAME	0-19	20-59	60+	Total
	NP334: Ba Phalaborwa	45.0	50.6	4.4	100.0
A1	Humulani	52.1	43.8	4.1	100.0
A2	Ben Farm	48.6	47.4	4.0	100.0
B1	Ga-Makhushane	45.5	49.9	4.6	100.0
B2	Ga-Mashishimale	49.6	44.7	5.8	100.0
B2	Mashishimale	51.6	43.0	5.4	100.0
B2	Namakgale	42.4	54.4	3.1	100.0
B2	Ga-Mashishimale	46.8	48.0	5.3	100.0
B3	Ba Phalaborwa Ba Nakome	49.6	45.1	5.3	100.0
C	Ga-Selwana	54.8	38.5	6.7	100.0
C	Mahale	58.7	35.9	5.4	100.0
C	Masala	63.8	30.3	5.9	100.0
C	Nondweni	60.2	35.2	4.6	100.0
D	Gravelotte SP	17.3	77.7	5.0	100.0
D	Gravelotte Township SP	26.6	71.7	1.7	100.0
E	Phalaborwa Part 1 SP	33.7	60.0	6.3	100.0
G	Die Eiland SP	9.1	90.9	0.0	100.0
G	Letaba NU	35.4	61.1	3.5	100.0
g	Letaba Ranch SP	7.9	81.6	10.5	100.0
G	Letaba Ranch SP	18.8	59.4	21.9	100.0
G	Lulekani NU	13.3	76.7	10.0	100.0
G	Murchison SP	24.8	72.1	3.0	100.0
G	Namakgale NU	11.6	82.3	6.1	100.0
G	Phalaborwa NU	22.5	73.2	4.3	100.0
G	Ruskamp	18.5	81.5	0.0	100.0

Source: Census 2001

From the above table it is evident that:

- Youths in the age group 0-20 years within the municipal represent 45% of the population. The western areas experience however higher contributions. The relatively

n the area provides huge pressure on the Ba Phalaborwa chools and the number of local young people who have nd are looking for jobs.

- The economic active age groups (20-60 years) represent 50.6 % of the population of Ba Phalaborwa. The size of this group provides pressure on the local economy to provide jobs
- The percentage of elderly people (4.4 % for Ba Phalaborwa) does not indicate a tendency for elderly people to settle in the area after retirement.

5.4.4 Household Income

The distribution of income in 2001 within the various Study Areas can be seen in the table below.

PLANNING AREA	PLACE NAME	No income	R1 - R4 800	R4 801 - R 9 600	R9 601 - R 19 200	R19 201 - R 38 400	R38 401 - R 76 800	R76 801 - R153 600	R153 601 - R307 200	R307 201 - R614 400	R614 401 - R1 228 800	R1 228 801 - R2 457 600	R2 457 601 and more	Not applicable (institutions)	Total
A1	Humulani	35.9	9.2	14.0	14.8	13.9	7.5	3.1	0.8	0.4	0.1	0.2		0.0	100.0
A1	Ruskamp		12.5		12.5	62.5	12.5	12.5							100.0
A2	Ben Farm	31.7	9.6	16.2	18.2	16.1	6.0	1.4	0.1		0.1	0.1		0.5	100.0
B1	Ga-Makhushane	26.9	8.3	19.2	23.1	16.1	5.4	0.7						0.2	100.0
B1	Namakgale	22.4	6.1	10.4	15.3	21.9	15.9	6.0	1.3	0.2	0.1	0.2	0.1	0.1	100.0
B2	Ga-Mashishimale	24.0	11.1	21.4	21.2	16.2	3.4	2.1	0.4	0.2					100.0
B2	Mashishimale	20.4	7.1	23.2	22.3	21.3	5.7								100.0
B2	Ba Shai-Ditlou	60.7	8.4	11.2	7.5	5.6	2.8	2.8							100.0
B3	Ba Phalaborwa Ba Nakome	24.8	10.8	25.9	22.4	11.9	2.9	0.6							100.0
C	Mahale	45.6	18.6	18.6	11.3	4.5	0.8			0.8					100.0
C	Nondweni	49.4	12.3	17.5	14.3	4.5	1.9								100.0
C	Ga-Selwana	45.8	14.4	22.0	10.5	4.7	1.8	0.6							100.0
D	Gravelotte SP	4.2	11.9	35.1	15.5	7.7	13.1	8.9	4.2						100.0
D	Gravelotte Township SP	6.1	4.1	8.2	29.0	49.8	2.4								100.0
E	Phalaborwa Part 1 SP	4.3	1.0	3.4	4.3	7.3	18.9	28.9	22.8	6.3	1.5	0.7	0.2	0.4	100.0
F	Masala	41.9	20.9	19.8	8.1	3.5	3.5								100.0
G	Letaba NU	3.2	51.1	31.6	10.1	2.7	0.5	0.7			0.1				100.0
G	Lulekani NU	2.1	22.1	27.5	16.1	16.4	7.0	5.2	2.3	1.0					100.0
G	Namakgale NU		26.9	37.3	18.9	5.5	4.5	1.5		3.0				1.5	100.0
G	Phalaborwa NU	5.9	21.7	34.1	20.7	12.1	1.7	1.8	0.8		0.5		0.3		100.0
G	Die Eiland SP			11.1	29.6	40.7		14.8							100.0
G	Letaba Ranch SP				25.9	70.4									100.0
G	Murchison SP	1.9	4.0	2.9	39.8	32.0	12.5	4.6	1.9	0.4		0.4			100.0
	NP334: Ba-Phalaborwa	22.9	11.0	15.3	15.8	15.4	9.4	5.8	3.0	0.8	0.2	0.2	0.1	0.1	100.0

Source: Census 2001

According to the above statistics it is clear that 23% of households in Phalaborwa have no income.

employment

Formal employment versus unemployment: Ba-Phalaborwa Municipality

Race	Employed	Unemployed	Not economically active	Unspecified	Institutions	Unemployment Rate
Black	27033	14485	32378	977	1654	34.9
Coloured	130	56	130	0	11	30.1
White	3409	263	1289	136	97	7.2
Total	30572	14804	33797	1113	1762	32.6

6. Demand

In Annexure B the routes travelled by taxis and busses with the high, medium and low volume routes can be seen. **It can be seen that the 2 proposed intermodal Public transport facilities (bus and taxi rank and hawkers facilities) will be serving the high volume routes.**

As indicated above the demand for the intermodal facility was already expressed in the IDP. The challenges currently faced are:

- The majority of people in the Municipal area do not own and use private transport.
- People rely on public transport to commute in and out of town on a daily basis
- Currently there is no link between taxi and bus services as the two major forms of public transport
- Passenger safety
- Passenger satisfaction
- Additional facilities at transport hub to serve passengers

7. Detailed project description

7.1 Location and site description

The proposed location for the bus and taxi rank and hawkers facilities can be seen in Annexure A.

Namakgale

The site is North of Namakgale exactly at the turn off to Namakgale from the R71. The site is situated on the South Western quadrant of the intersection. The site area for phase 1 is approximately 2.1 ha and is approximately 400m from the urban edge of Namakgale.

Lulekani

rn side of Lulekani almost at the entrance to Lulekani B. the site can be accessed via the R71 turning off to Lulekani and travelling some 5.5km towards Lulekani. The site is situated on the Western side of the road into Lulekani. The site area of phase 1 is approximately 2.1 ha.

The selection of the sites was based on the following criteria:

- Commuter information and travelling patterns
- Site availability
- Availability of services
- EIA requirements
- Location
- Accessibility
- Current zoning
- Compatible neighbours
- Future expansion potential

7.2 Project detail arrangements

A plan of the proposed bus and taxi terminals can be seen in Annexure B. The project essentially consists of the following:

Phase 1	
No.	**Item**
1	Slip lanes with Entrance and exit
2	Pick up and drop off zones
3	Parking area
4	Ablution facilities
5	Offices
6	Hawkers facilities

7.3 Critical success factors of project

7.3.1 IMPORTANT MARKET AND SUCCESS ELEMENTS

There are a number of critical aspects that plays a vital role in the success of a Taxi and bus Rank, these are:

- ✓ Location
- ✓ Accessibility
- ✓ Mobility Networks
- ✓ Formal/Informal retail facilities

- ✓ Infrastructure

The abovementioned elements are critical success factors and the lack of even one such element could potentially affect the success of the taxi and bus rank.

7.3.2 GENERIC SUCCESS FACTORS

A taxi and bus rank creates a market for local informal traders to sell their goods and services, the design and layout of the taxi and bus rank will influence the ability of traders to facilitate a successful market environment. The taxi rank should include the following services in order to cater for commuter demands at the rank:

- ✓ Mobile phone centre/air-time outlet,
- ✓ Small fresh produce outlets,
- ✓ Hairdressers,
- ✓ Cooked food vendors,
- ✓ Meat vendors,
- ✓ Tailors,
- ✓ Clothes and shoes stalls,

The designed stalls at the taxi rank could be rented out to the formal/informal traders at a minimal fee in order to maintain the set facilities and taxi rank.

7.4 Design criteria

7.4.1 WATER DESIGN CRITERIA

The design standards of the PBLM as well as any other governing authority will be followed in conjunction with the ñGuidelines for Human Settlement Planning and Designò as applicable. The design criteria to be used in the final design of the water services are summarized below:

Table 3 - Water Supply - Design Standards

Summer Peak Factor (SPF)	1,5
Daily Peak Factor	2,5
Design Peak Flow Rate (DPFR) for domestic flows	GAADD x SPF x DPF
Maximum velocity	1,2 m/s
Minimum residual head under peak flow conditions	25 m
Maximum static head	90 m

nder conditions of	1,5m/s
Pipe type	uPVC pressure pipes to SABS 966 part 1
Fire flow at any one hydrant under the condition of domestic peak flows	15 ăs
Fire flow	SABS 090 Low Risk Group 1
Minimum pipe diameter	75mm Ø
Minimum pipe class	Class 9
Duration of fire flow	2 hrs
Minimum residual head (fire plus domestic peak flow)	7m
Maximum linear velocity under conditions of fire fighting	2,0m/s
Minimum depth of cover	1.0m

7.4.2 SEWERS

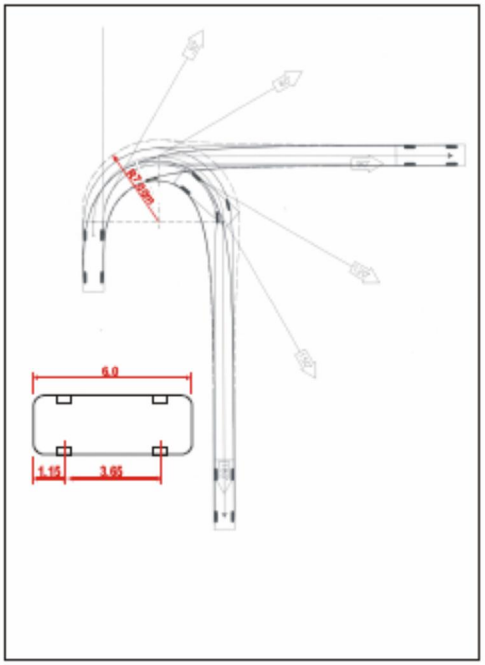
The design standards of the BPLM, as well as any other governing authority will be followed in conjunction with the ñGuidelines for Human Settlement Planning and Designò. The sewer reticulation system will be designed using commercial type uPVC piping according to S.A.B.S. 1601.
Conventional sewer manholes of pre-cast concrete ring construction will be provided with frames and covers.

Average Annual Daily Flow (AADF)	80% of water supplied
Peak Factor (PF)	3.5
Minimum pipe diameter	110 mm
Minimum flow velocity	0.7m/s (full flow)
Peak design flow	Full bore capacity of pipe
Allowance for extraneous flows	15%
Spacing of the manholes	80m maximum distance and at all changes in gradient or direction
Septic tank	ñGuidelines for Human Settlement Planning and Designò

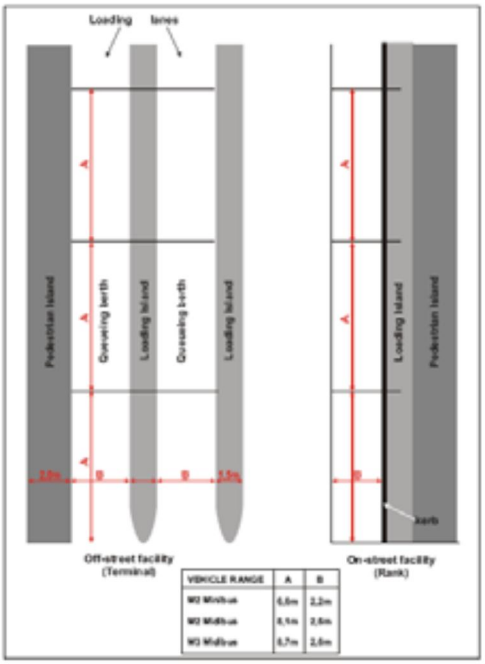
7.4.3 TAXI TERMINAL, ROADS AND PARKING AREAS

1. Facilities size to accommodate waiting/loading passengers at specified level of service
2. One-way movements are safer and easier to control than two-way
3. All vehicle movement should be forward
4. Minimise pedestrian/vehicle conflicts; Clearly defined areas for queuing and boarding, separated from vehicles by kerbs; can use raised walkways to give passenger right-of-way
5. Separate off-loading area is preferable
6. Make provision for informal trading because they will come
7. Amenities (toilets, security, telephones, benches)

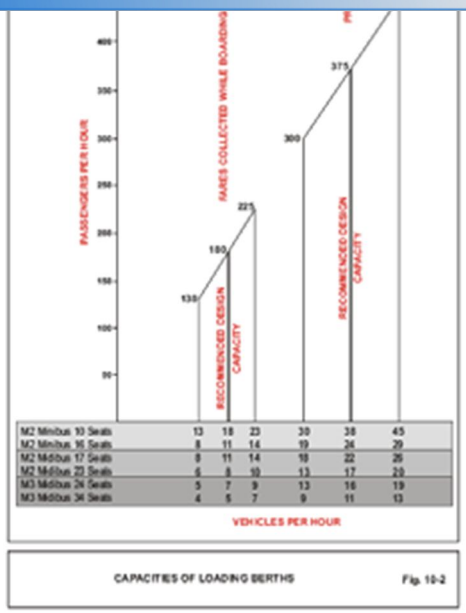
The entrance and exit to the sites will be adequately designed for the appropriate design vehicles (taxis, busses). Slip lanes will be designed for safe access and exiting of the sites. Parking and holding facilities will be developed in terms of recognised design standards.



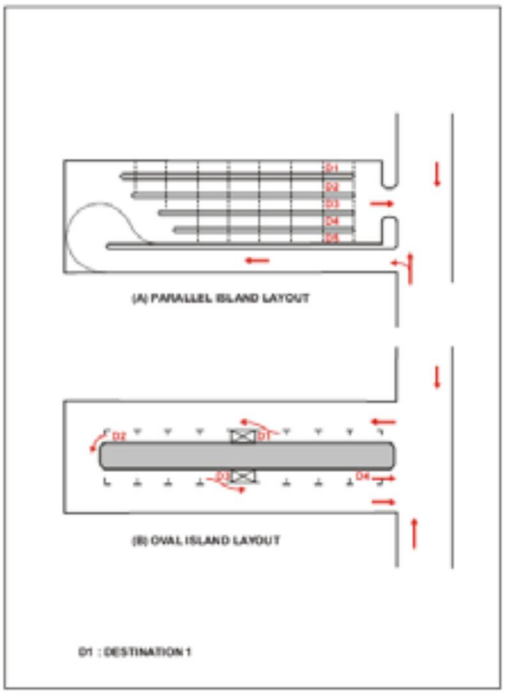
TURNING TEMPLATE - M2 MINIBUS Fig. A

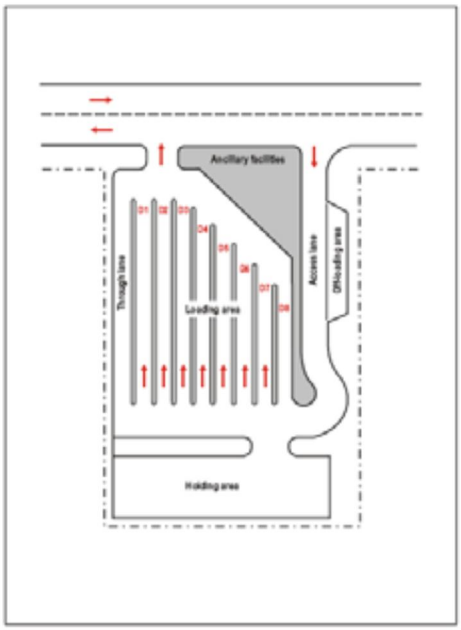


MINIMUM LOADING AREA DIMENSIONS Fig. 10-1



CAPACITIES OF LOADING BERTHS Fig. 10-2





AN EXAMPLE OF A MINIBUS / MIDIBUS TERMINAL LAYOUT Fig. 11-2

All roads infrastructure will be designed in accordance with the following standards:

- Guidelines for Human Settlement Planning and Design (Red Book)
- Guidelines for the Provision of Engineering Services (Blue Book)

All storm water infrastructures will be designed in accordance with the following standards:

- Guidelines for Human Settlement Planning and Design (Red Book)
- Guidelines for the Provision of Engineering Services (Blue Book)

Minimum pipe size	450mm Ø
Minimum pipe gradient	1/150 = (0,67%)
Outlet structures	Designed to limit soil erosion

The storm water will be channeled from the parking areas with adequate slopes and the road prism to side channel inlets (culverts). The water will be piped to the closest natural watercourse.

7.5 Phasing of development and future additions pending outcome of urban renewal

- Phase 1:
  - Entrance, pickup and drop off zones
  - Parking / holding area
  - Public ablution facilities
  - Hawkers facilities
  - Offices
- Phase 2:
  - Increase parking and pick up and drop off zones
  - Carwash
  - Other retail facilities (eg. filling station)
  - Mobile phone centre/air-time outlet,
  - Small fresh produce outlets,
  - Hairdressers,
  - Cooked food vendors,
  - Meat vendors,
  - Tailors,
  - Clothes and shoes stalls,

7.6 Institutional arrangements

7.6.1 Funding and implementation

- National Treasury ï funding agent
- BPLM ï implementing agent

7.6.2 Operation and maintenance

companies and taxi associations, be responsible to operate

It is anticipated that initially the operation and maintenance of the facility will be part of BPLM roads yearly O + M budget.

Future service contributions by developers will be used as capital to extend the services (roads, parking, water and sanitation).

Ultimately the monthly income obtained from the hawkers, rates and taxes, levies, must be able to sustain the developments.

The estimated number of staff to operate and maintain each facility is as follows:

Project start up (phase 1)

Position	No.	Allocation	Function
Cleaners	1	Full time	Cleaning
Security	1	Full time	Security

7.7 Design team and procurement

7.7.1 Design team

Discipline	Professional support required	Procurement method
Architectural drawings and details	Architects	Open tender
Structural and civil engineering	Civil engineer	Open tender
Electrical design	Electrical engineer	Open tender
Compile SoQ for tendering	Quantity surveyor	Open tender
Mechanical (if required)	Mechanical	Open tender

7.7.2 Construction

An open tender process will be followed for appointment of the contractor, as the project cost will be above R500 000. The CIDB guidelines and regulations will be followed as far as practically possible.

7.8 Availability of services

7.8.1 Water

The settlements of Namakgale and Lulekani are serviced mainly with house connections. Water is available close to the identified sites. The water supply can be regarded as reputable with minimum breakages in supply.

	Municipality
Water services provider (bulk)	Mopani District Municipality
	Lepelle Northern Water Board
Water services provider (retail)	Ba-Phalaborwa LM

The planned facility will be connected to the existing water reticulation system with a metered connection. No on site water storage will be required.

Estimated water demand

Namakgale						
Facility / Users	**Population**	**% using bus or taxi**	**Commuters through terminal**	**Area (Sqm)/ Number**	**Water Demand**	**AADD (l/d)**
Hawkers facility and office	NA	NA	NA	250	400l/d per 100sqm	1000
Retail (phase 2)	NA	NA	NA	500	400l/d per 100sqm	2000
Commuters						
Namakgale	41176	87%	35658	Na	10l/p/d	356584
Ga Mashishimale	6904	79%	5447	Na	10l/p/d	54473
Total						**414057**

Lulekane						
Facility / Users	**Population**	**% using bus or taxi**	**Commuters through terminal**	**Area (Sqm)/ Number**	**Water Demand**	**AADD (l/d)**
Hawkers facility and office	NA	NA	NA	250	400l/d per 100sqm	1000
Retail (phase 2)	NA	NA	NA	500	400l/d per 100sqm	2000
Commuters						
Lulekane	5528	25%	1354	Na	10l/p/d	13544
Matiko Xikaya A	13156	25%	3289	Na	10l/p/d	32890
Humulani	9856	75%	7392	Na	10l/p/d	73920
Total						**123354**

f the planned facilities are 0.414Mǎd and 0.123Mǎd for Namakgale and Lulekani respectively (all phases).

7.8.2 Sewer

The settlement of Namakgale and Lulekani is serviced mainly with full borne sanitation, with sewer reticulation lines and main outfall lines gravitating to the STW. The sewerage generation of the proposed facility is regarded as minimal and will not impact on the STW capacity. The facility in Lulekani will be connected to the existing sewerage reticulation network while the proposed facility in Namakgale will be serviced by a small package plant (phase1). The Namakgale terminal will be connected to the water borne sewage system when the next phases are developed. The daily sewage outflow is estimated as 80% of the AADD.

7.8.3 Roads

The sites are situated on secondary roads in the Namakgale and Lulekani settlements and no specific external approvals or requirements (apart from BPLM) for access to the properties are required.

The access roads to the developments do not need upgrading.

7.8.4 Waste disposal

Waste disposal will be done by BPLM as part of the waste disposal service for Namakgale and Lulekani which is once per week. The waste will be disposed at the waste disposal facilities. The initial waste stream from the developments is not expected to be large. Once the facilities are extended the waste will be more significant and a separate holding facility for waste will be constructed on site.

7.8.5 Electricity supply

The settlements of Namakgale and Lulekani are fully electrified and electricity is supplied by the BPLM. The expected demand of the taxi and bus ranks are low, and will not impact on the overall demand of the settlements. Adequate procedures for connection to the existing electrical reticulation will be followed.

8. Development impact

- The taxi and bus rank will improve the current public transport system and will increase local passenger satisfaction and decrease public transport customer fatigue
- The taxi rank will stimulate other local economic development (more feet)
- Improve monitoring and regulating of taxi and bus operations.
- Improve safety at taxi and bus ranks
- Create a sense of pride and being
- The project is an important building block in the overall urban renewal strategy
- Job creation

Item	Programme																			
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20
Compile status quo information																				
Identify all stakeholders (taxi associations and bus companies)																				
Meeting with stakeholders to confirm status quo and needs																				
Preliminary design report																				
Approval of preliminary design report																				
EIA																				
Architect Plans, design																				
Approval by BPLM																				
Tender process																				
Tender evaluation and recommendation																				
Approved by LM																				
Appointment																				
Construction																				
Overall project management																				

10. Estimated Project costs

The estimated project costs can be seen below. The project construction costs are estimated at R 6.84 M for both taxi ranks (including Ps and Gs, Contingencies, Escalation, VAT)

Item	Estimated cost
Project costs	R 6 840 000
Professional fees @ 17.56%	R 1 201 000
Total	**R 8 041 000**

Estimate qualifications are as follows:

1. The elemental system of construction was used as base to do the estimates.
2. Estimates are based on the attached preliminary drawings for each project
3. The estimates are indicative of current replacement costs and should only be used to determine budgets for the development of each project.
4. No allowances were made for land cost and land formalization procedures.
5. Allowance for professional fees is as per the current norms and standards.
6. It was assumed that ñormalòfounding conditions are applicable for all buildings.
7. No allowance was made for special foundations and blasting of rock, etc.
8. All external works (pathways, road works, fencing, etc.) were measured as per the layout drawings.

ELEMENTAL ESTIMATE OF CONSTRUCTION COST - TAXI RANK

Code	Description	Cost R	Quantity	Unit	Cost per Unit	Admin Block	Toilet block	Hawkers Facilities	Cost %
						1	1	1	
1	**PRIMARY ELEMENTS**	**1 228 660.00**				**5 462**	**6 857**	**5 814**	
						273 100	**548 570**	**406 990**	
	Foundations	115 920.00	184	m	630.00	40	77	67	**3.99%**
	Ground Floor Construction	52 000.00	200	m²	260.00	50	80	70	**1.79%**
	External Envelope (incl. doors, windows, finishes, etc)	509 760.00	354	m²	1 440.00	90	150	114	**17.53%**
	Roofs - Thatch	-	-	m²	700.00	-			**0.00%**
	Roofs - Sheeting	80 000.00	200	m²	400.00	50	80	70	**2.75%**
	Internal Divisions	81 180.00	198	m²	410.00	30	81	87	**2.79%**
	Floor finishes	30 000.00	200	m²	150.00	50	80	70	**1.03%**
	Internal wall finishes (incl. doors, etc)	168 300.00	198	m²	850.00	30	81	87	**5.79%**
	Ceilings & Soffits	28 000.00	200	m²	140.00	50	80	70	**0.96%**
	Fittings	2 500.00	50	m²	50.00	50			**0.09%**
	Electrical Installation	70 000.00	200	m²	350.00	50	80	70	**2.41%**
	Mechanical Installation	-	-	m²	900.00	-		-	**0.00%**
	Internal Plumbing	91 000.00	14	No	6 500.00	2	12	-	**3.13%**
2	**SPECIAL INSTALLATIONS / EXTERNAL WORKS**	**1 263 150.00**							**43.45%**
	Earthworks	61 050.00	6 105	m²	10.00				**2.10%**
	Soil drainage	30 000.00	100	m	300.00				**1.03%**
	Water supplies	21 750.00	150	m	145.00				**0.75%**
	Boundary, Screen and Retaining walls, Fencing	-		m	750.00				**0.00%**
	Paving, walkways, etc	333 000.00	1 850	m²	180.00				**11.45%**
	Roadworks, minor earthworks	690 000.00	2 300	m²	300.00				**23.73%**
	Ancilliary Buildings (Under cover bays)	110 000.00	1	no	110 000.00				**3.78%**
	Landscaping, irrigation, etc	13 000.00	200	m²	65.00				**0.45%**
	Fire Services	4 350.00	3	no	1 450.00				**0.15%**
4	**PRELIMINARIES AND GENERAL**	**276 867.78**							**9.52%**
5	**CONSTRUCTION COST SUB-TOTAL**	**2 768 677.78**							**95.24%**
6	**CONTINGENCY ALLOWANCES**	**138 433.89**							
	PRICE AND DETAIL DEVELOPMENT (say 2.5%)	69 216.94							**2.38%**
	BUILDING CONTRACT CONTINGENCIES (say 2.5%)	69 216.94							**2.38%**
7	**ESTIMATE OF CURRENT CONSTRUCTION COST (EXCLUDING VAT) NOV. 2011**	**2 907 111.67**							**100.00%**
8	**ESCALATION**	**93 418.90**							
	PRE-TENDER ESCALATION (5 Mnths)	34 903.51							**1.20%**
	CONTRACT ESCALATION (11 Mnths)	58 515.39							**2.01%**
9	**VALUE ADDED TAX @ 14%**	**420 074.28**							**14.45%**
10	**ESTIMATE OF ESCALATED CONSTRUCTION COST AT CONTRACT COMPLETION DATE**	**R 3 420 604.84** say							
	INCL. VALUE ADDED TAX	**R 3 420 000.00**	**200.00**	**m²**					**117.66%**

Annexure A

Annexure B

Annexure C

Annexure D