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SOCIAL IMPACT ASSESSORS

Social Scoping Study for the Proposed Development of Portions of the Farm Waterval 5 IR

Draft Report

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1. INTRODUCTION

The Waterval Islamic Institute intends to develop part of the farm Waterval 5 IR, also known as Mia's Farm and Jukskei View Extension 21, by building a number of residential units and providing associated amenities such as access and internal roads, infrastructure for service provision, as well as community and commercial facilities and green and open areas. The land, which is the focus of the development, falls within the City of Johannesburg Metropolitan Municipality and the Midrand Local Municipality and is situated on the wedge of ground between the Allandale Road (M39) (K58) and the K60 Route, eventually crossing the K60 Route. It has, running along its southerly boundary the proposed Gautrain route while the K113 Route runs, from east to west through the proposed development.

As this proposed development is a listed activity in terms of the Environmental Impact Assessment (EIA) Regulations, as promulgated under section 21, 22 and 26 of the Environment Conservation Act 73 of 1989, it is subject to an environmental study of which this social impact assessment forms part. Consequently, this social study will focus on the social impacts as well as on certain socio-economic impacts that may arise due to the proposed development. In order to achieve this, and to provide background, attention is first given to the demographics of the area, commencing at the provincial level and then moving on to the district and local municipal levels. The greatest focus is placed on the municipal and in particular the ward levels. Following this, attention is then turned towards identifying and assessing the various social and socio-economic impacts, both positive and negative, that are likely to emerge as a direct or indirect result of this proposed project. Finally, and where appropriate, various mitigation measures are suggested.

2. DEMOGRAPHIC BACKGROUND

This discussion is based on data collected by Statistics South Africa during the 2001 Census and adjusted to incorporate the new municipal demarcation boundaries which came into effect on 09 December 2006. It must be noted that although Stats SA is the only source of demographic data recognized by the Government it is somewhat outdated and, as Andrew Boraine points out (Davie, 2004) the 2001 Census contains a 16% undercount. Apart from this there has been extensive population growth in the country since the 2001 Census as will be indicated below.

2.1 Gauteng

The proposed project is to take place in the Province of Gauteng, a province that accommodates 3 of the 6 metropolitan or category A municipalities in the country apart from a further 3 district municipalities. Under these district municipalities are 9 local municipalities. The 3 metropolitan municipalities are City of Johannesburg (JHB), City of Tshwane (TSH), and Ekurhuleni (EKU) metropolitan municipalities. The district municipalities are Sedibeng (DC42), West Rand (DC46) and Metsweding (DC48). All of which are illustrated by means of the map in figure 2.1 below.

Figure 2.1 Map of Gauteng

Source: Demarcation Board http://www.demarcationboard.org.za

Gauteng, geographically the smallest province in South Africa, covers only about 1,4% of the entire land area of South Africa and, at the time of the 2001 Census, had a population of 8.8 million, resulting in a population density of 519,53/km² (Demarcation Board, 2007). Notwithstanding its size, the Province contributes 38%

of the gross domestic product (GDP), and 60% of the fiscal revenue of the entire country, making Gauteng the economic hub of South Africa.

Gauteng is also demographically the fastest growing province in the country having shown a population growth rate of 20% between the 1996 and 2001 Censuses (Stats SA, 2002) and the population is estimated to have reached 9,6 million in 2006 (Mid-year population estimates, Statistics South Africa 2006) indicating a population growth rate of 9.1% between 2001 and 2006. The State of the Cities report (2004) predicts that the population of Gauteng will reach 14.5 million by the year 2015. A caveat is, however, that the increasing prevalence of HIV and AIDS may have an effect on the population growth rate, slowing it somewhat. Nevertheless, the population of Gauteng is fast approaching that of KwaZulu-Natal which, after boundary readjustments, stood at 9.9 million in 2006. By the 2011 Census it is likely that Gauteng will accommodate the greatest share of the South African population.

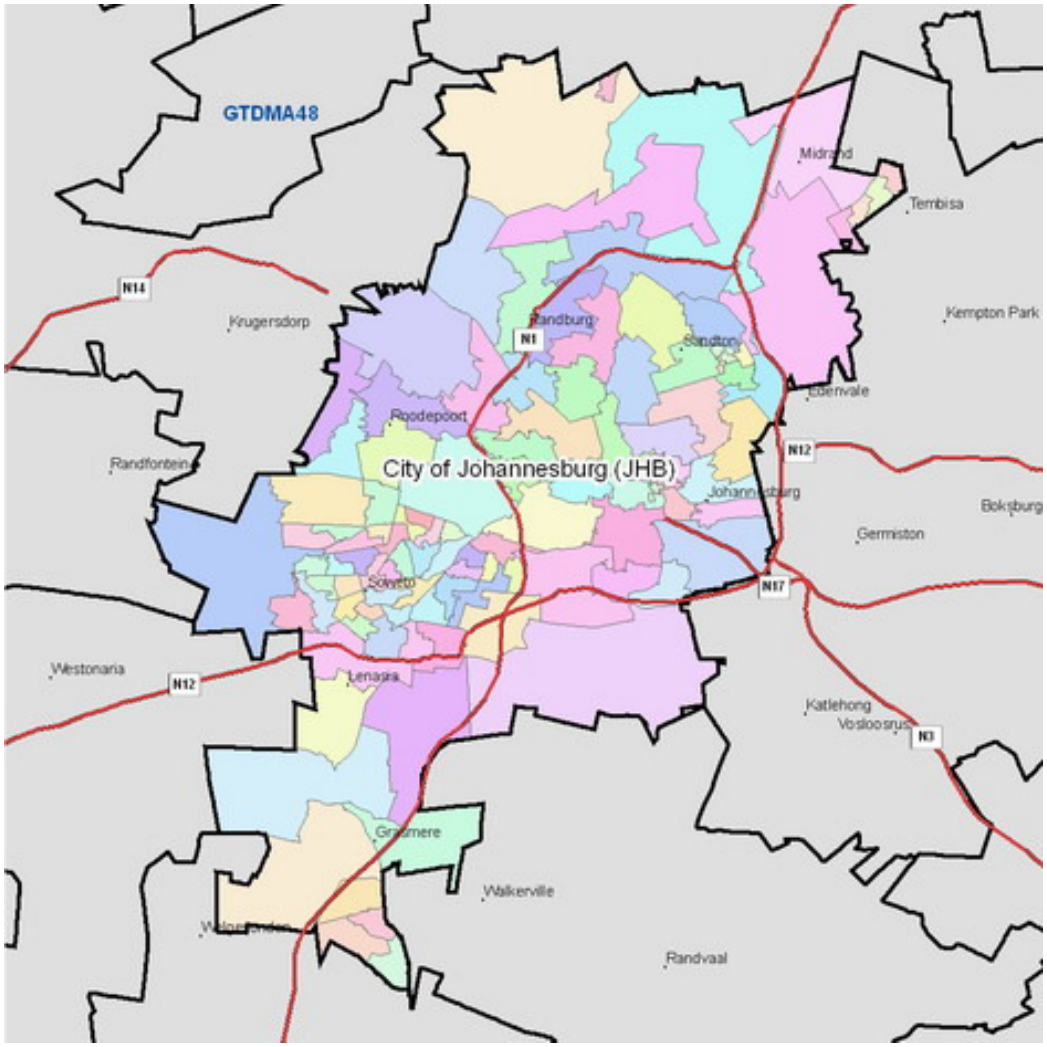
The district within which the proposed project falls is the City of Johannesburg Metropolitan Municipality which, on a demographic basis, is the largest and most densely populated municipality in South Africa. The demographics of the City of Johannesburg (JHB) will be presented below.

2.2 City of Johannesburg Metropolitan Municipality

The City of Johannesburg is located in Central Gauteng and, according to the Demarcation Board (www.demarcationboard.org.za), consists of 109 wards spread over a geographical area of 1644,9590 km^2. A map of the City of Johannesburg indicating these wards is provided in figure 2.2 below. With a population of 3,2 million (Stats SA, Census 2001) the average population density of the city is 1 962 people per 1 km^2. This makes the City the largest city in the country, containing 7,2% of the entire South African population.

Not only is the City the largest city in the country but it is also " …the largest local economy in South Africa, which contributed an estimated 17% of the country's total economic output in 2003" (City of Johannesburg Integrated Development Report, 2006/11:5).

Figure 2.2 Map of the City of Johannesburg Metropolitan Municipality



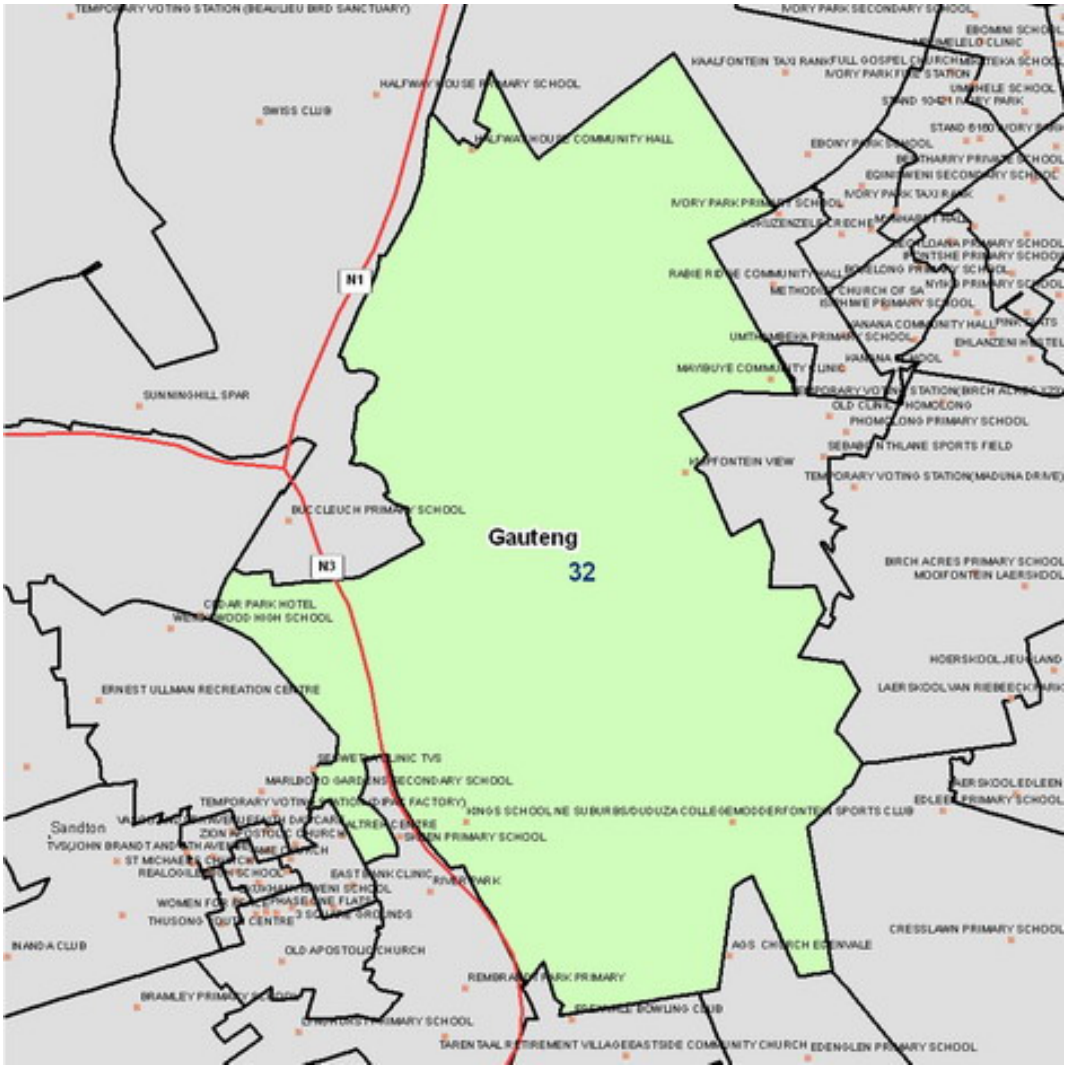
Source: Demarcation Board http://www.demarcationboard.org.za

The farm Waterval 5 IR (Mia's Farm) where the proposed project is to be built stretches across two of the 109 wards of the City of Johannesburg. These wards are Ward 32 and Ward 93 and each will briefly be described below.

2.2.1 Ward 32

Ward 32 is situated towards the north of Johannesburg and covers a geographical area of 82,306 km^2. It lies to the east of the N1 and N3 in the region of the Buccleuch Interchange as is illustrated by figure 2.3 below.

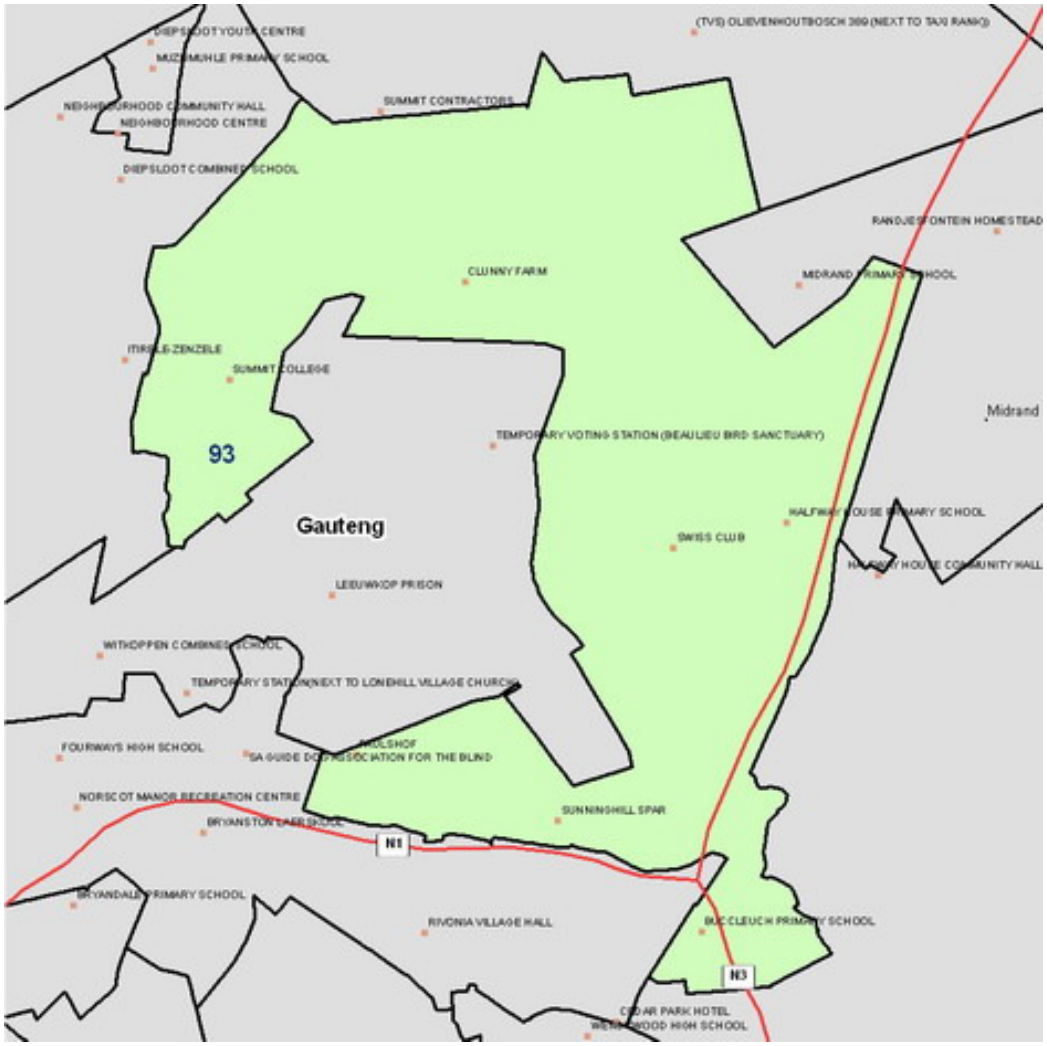
Figure 2.3 Map of Ward 32



2.2.2 Ward 93

Ward 93 covers a geographical area of 83,952 km^2 and lies to the north of the N1 and northwest of the N3 highway. An illustration of Ward 93 is given in figure 2.4 below.

Figure 2.4 Map of Ward 93



Attention will now be turned towards a demographic description of the City of Johannesburg and the wards in which the proposed project is situated.

2.2.3 Demographic description

As the City of Johannesburg stretches over a wide area and the proposed project lies towards the northern boundaries of this region, focus will be placed on the wards in which the proposed project is situated. In order to provide a demographic background against which to assess the social impacts of the proposed project attention will be placed on wards 93 and 32. The demographics of these wards will be compared to those of the City of Johannesburg.

According to Statistics South Africa (Census, 2001) Johannesburg has a population of 3,2 million people distributed amongst just over 1 million households spread across the entire municipal region. In respect of each of the wards there are 26,6 thousand people living in ward 32 and 33,4 thousand in ward 93.

- Gender

Although on a national and provincial level men marginally outnumber women, the City of Johannesburg shows an equal distribution, at 50%, amongst both men and women. On a numerical basis, the discrepancy between the overall population count of 3,2 million and the 3,04 million indicated below is due to a number of respondents not indicating their gender as male or female for various reasons.

At ward level, Ward 32 has a marginally higher number of males at 52,3%, than females at 47,7%. In Ward 93 the reverse is apparent with 51,5% of the population comprising of females and 48,5% of males. In Table 2.1 below a comparison is given of the gender distribution within the Johannesburg Metropolitan Municipality and in both wards 32 and 93.

Table 2.1 Gender distribution

Gender	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
Female	1524410	50,0	12692	47,7	17225	51,5
Male	1522661	50,0	13939	52,3	16199	48,5
Total	**3047071**	**100**	**26631**	**100**	**33424**	**100**

Source: Stats SA (Census, 2001)

- Population grouping

On the basis of population grouping, black Africans account for 73,5% of the population of the City of Johannesburg, followed by whites at 16%, coloureds at 6,4% and Indians/Asian at 4,2%.

At ward level, 91,6% of the population of Ward 32 and 35,2% of the population of Ward 93 are black Africans. Whites account for 6,9% in Ward 32 and 54,6% in Ward 93. In Ward 32 the percentage of coloureds is 0,6% and Indians/Asian 0,9% while in Ward 93 the population comprises 1,8% coloured and 8,4% Indian/Asian. The distribution of population groups within the municipal area is compared against that in wards 32 and 93 in table 2.2 below.

Table 2.2 Population group

Population Groups	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
Black African	2369767	73,5	24391	91,6	11749	35,2
Coloured	206246	6,4	157	0,6	594	1,8
Indian or Asian	134109	4,2	244	0,9	2820	8,4
White	515184	16,0	1839	6,9	18262	54,6
Total	**3225306**	**100**	**26631**	100	**33425**	100

Source: Stats SA (Census, 2001)

- Language groups

25,5 % of people living in Johannesburg speak IsiZulu, while 19,5% speak English, 11% speak Sesotho and 8,1% are Afrikaans speaking. In Ward 32, at 25,5%, Sepedi is spoken by most people followed by IsiZulu and IsiXhosa at 15,9% and 15,7% respectively. The vast majority of the population of Ward 93, 61,6% speak English.

In table 2.3 a breakdown of all 11 official language groups spread across the Johannesburg Metropolitan Municipality is compared to the languages spoken in wards 32 and 93.

Table 2.3 Language group

Language Groups	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
Afrikaans	260820	8,1	381	1,4	2333	7,0
English	627531	19,5	2052	7,7	20584	61,6
IsiNdebele	28782	0,9	356	1,3	374	1,1
IsiXhosa	247863	7,7	4194	15,7	1219	3,6
IsiZulu	822177	25,5	4229	15,9	2614	7,8
Sepedi	240653	7,5	6790	25,5	1740	5,2
Sesotho	354050	11,0	1517	5,7	1082	3,2
Setswana	293355	9,1	1367	5,1	1592	4,8
SiSwati	31284	1,0	485	1,8	208	0,6
Tshivenda	86501	2,7	680	2,6	401	1,2
Xitsonga	189748	5,9	4468	16,8	431	1,3
Other	42537	1,3	111	0,4	847	2,5
Total	**3225301**	**100**	**26630**	**100**	**33425**	**100**

Source: Stats SA (Census, 2001)

- Employment status

In 2001 the official unemployment level in Johannesburg was placed at 27,3 % and by 2002 it had increased to 31,9% (Labour Force Survey of 2002 in City of Johannesburg Integrated Development Report, 2006/11:5). According to the City of Johannesburg Integrated Development Report (2006/11:5) "[a]lthough employment

increased in the last Mayoral Term (2001 to 2006), the fact that the population increased significantly means that the absolute number of unemployed people also increased, owing largely to the in-migration of large numbers of work-seekers."

Based on data provided during the 2001 Census (Stats SA, 2001), which is the most recent available official data at ward level, the unemployment rates in wards 32 and 93 are vastly different. Ward 32 shows a higher unemployment rate than is the case across the City of Johannesburg which stands at 34,1% compared to 27,3% and is much higher than that of Ward 93 which stands at 4%. The employment status, across Johannesburg and in Wards 32 and 93 are illustrated below in accordance with data collected during the 2001 Census (Stats SA, 2001).

Table 2.4 Employment status

Employment Status	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
Employed	1085354	45,8	9165	46,0	20395	78,0
Unemployed	646923	27,3	6796	34,1	1034	4,0
Not Economically Active	639988	27,0	3955	19,9	4713	18,0
	2372265	**100**	**19916**	**100**	**26142**	**100**

Source: Stats SA (Census, 2001)

It is important to note that for some time there has been controversy surrounding unemployment figures in the country and that the official definition of unemployed used by Stats SA (2007:xxiv) **excludes** persons who indicated that they were unemployed but who had not taken active steps to find work in the four week period leading up to the interview. In effect this definition excludes discouraged work-seekers from being counted as unemployed. Stats SA (2007:xx) places the percentage of discouraged workers in South Africa at 10,7% in 2006 slightly down on the 11,2% of 2005 and only slightly higher than the 10,6% in 2001. Although the Labour Force Survey indicates unemployment levels at the national and provincial levels, at this point no data is available at the municipal level.

- Education

With reference to education in the City of Johannesburg, 28,7% of adults have a Std 10/Grade 12 qualification, 13,8% have a Technikon or University level of education, 15,5% at least some primary level of education while 7,2% are illiterate.

Placing focusing on the wards, Ward 32 has the lowest level of education, lower on average than that of Johannesburg and much lower than that of Ward 93 which in

turn has a higher level of education than the entire City of Johannesburg. 10,8% of the population of Ward 32 have no schooling against the 7,2% of Johannesburg and only 3,2% of Ward 93. On the other hand, 75,3% of the population of Ward 93 have a Standard 10/Grade 12 or higher level of education while only 33,6% of the population of Ward 32 have a similar level of education. Across Johannesburg, 42,5% of the population has a Std10/Grade 12 or higher level of education. This data is presented in greater detail in table 2.5 below.

Table 2.5 Education

Education	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
No schooling	161478	7,2	1999	10,8	781	3,1
Some primary	224656	10,1	2335	12,6	1162	4,6
Complete primary	119353	5,4	1322	7,2	590	2,3
Some secondary	777251	34,9	6603	35,8	3693	14,7
Std 10/Grade 12	638762	28,7	4682	25,4	7453	29,7
Higher	307346	13,8	1522	8,2	11457	45,6
Total	**2228846**	**100**	**18463**	**100**	**25136**	**100**

Source: Stats SA (Census, 2001)

At the institutional level 5,4% of the population of Johannesburg have attended either a technikon or a university. At ward level while 10,7% of the population of Ward 93 have attended either a technikon or university only 2,5% of the population of Ward 32 have done so.

- Age

On the basis of age 42,4% of the population of Johannesburg are 24 years of age or under while 6,3% are 60 years or older. 73,2% fall within the economically active age group of 15–64 years old.

At ward level, in Ward 32, 43,8% of the population are 24 years of age or younger and 2,3% are 60 years or older, while in Ward 93 the corresponding figures are 33,6% and 4,9% respectively. In Ward 32, 74,6% of the population fall within the economically active age group of 15–64 years while in Ward 93, 77,9% of the population fall within that economically active age grouping. Table 2.6 provides a comparison of the different age groups amongst the various populations under discussion.

Table 2.6 Age

Age	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
0-4	265527	8,2	2746	10,3	2469	7,4
5-9	234935	7,3	2006	7,5	2031	6,1
10-14	232872	7,2	1666	6,3	1900	5,7
15-19	263123	8,2	1749	6,6	1889	5,7
20-24	370445	11,5	3507	13,2	2927	8,8
25-29	406977	12,6	4212	15,8	5031	15,1
30-34	329469	10,2	3421	12,8	4532	13,6
35-39	279468	8,7	2596	9,7	3496	10,5
40-44	231268	7,2	1685	6,3	2731	8,2
45-49	178236	5,5	1176	4,4	2163	6,5
50-54	135900	4,2	771	2,9	1532	4,6
55-59	94484	2,9	480	1,8	1082	3,2
60-64	71211	2,2	270	1,0	666	2,0
65-69	48110	1,5	140	0,5	379	1,1
70-74	35309	1,1	95	0,4	273	0,8
75-79	23289	0,7	53	0,2	153	0,5
80 and over	24678	0,8	58	0,2	170	0,5
Total	**3225301**	**100**	**26631**	**100**	**33424**	**100**

Source: Stats SA (Census, 2001)

- Occupation

A large proportion of Ward 93 residents 42,6% are either professionals or senior officials. In contrast only 10,8% of Ward 32 residents fill professional or senior positions while 43,8% fill 'other' and elementary occupations. A list of occupations across the Johannesburg Municipal region and in respect of both Wards 32 and 93 is provided in table 2.7 below.

Table 2.7 Occupation

Occupation	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
Senior Officials	86997	7,9	392	4,3	3467	17,0
Professionals	115637	10,5	597	6,5	5221	25,6
Tech/Assoc Prof	105925	9,6	510	5,6	2577	12,6
Clerks	148585	13,5	811	8,8	2146	10,5
Service workers	139767	12,7	1148	12,5	1434	7,0
Skilled agric work	5832	0,5	130	1,4	174	0,9
Other	119619	10,9	1608	17,5	592	2,9
Elementary occupations	223337	20,3	2408	26,3	3183	15,6
Occupations NEC	81111	7,4	648	7,1	1365	6,7
Plant Operators	72593	6,6	915	10,0	236	1,2
Total	**1099403**	100	**9167**	100	**20395**	100

Source: Stats SA (Census, 2001)

- Personal income

At 61,5% Ward 32 has a higher percentage of its population having no income than is the situation across Johannesburg which has 59% of the population having no income. A relatively low percentage, 35%, of the Ward 93 population has no income while 34,5% of the population of Ward 93 earn in excess of R6 400 pm compared to 17,5% in Johannesburg and 2,8% in Ward 32. Clearly the population of Ward 93 are significantly higher earners than the population of Ward 32. The level of personal income is indicated in table 2.8 below.

Table 2.8 Personal income

Personal income	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
No income	1902366	59,0	16388	61,5	11696	35,0
R1 - R400	109153	3,4	963	3,6	556	1,7
R401 - R800	245944	7,6	1640	6,2	1692	5,1
R801 - R1 600	309944	9,6	3630	13,6	2793	8,4
R1 601 - R3 200	243863	7,6	2073	7,8	1654	4,9
R3 201 - R6 400	179215	5,6	878	3,3	3402	10,2
R6 401 - R12 800	121892	3,8	557	2,1	4986	14,9
R12 801 - R25 600	67292	2,1	314	1,2	3978	11,9
R25 601 - R51 200	28813	0,9	133	0,5	1891	5,7
R51 201 - R102 400	8970	0,3	28	0,1	389	1,2
R102401-R204800	5044	0,2	23	0,1	233	0,7
R204 801 or more	2808	0,1	0	0,0	154	0,5
Total	**3225304**	**100**	**26627**	**100**	**33424**	**100**

Source: Stats SA (Census, 2001)

- Household income

A similar trend, as discussed above, is evident in respect of household income. Where 18,7% of households in Johannesburg have no income the percentage in Ward 32 is somewhat higher at 22,9% in Ward 32 and significantly lower in Ward 93 at 3,8%. At the upper end of the scale 21,2% of households in Johannesburg, 10,7% of the households in Ward 32 and 73,4% of those in Ward 93 have a houshold income in excess of R76 800 pm. Table 2.9 provides a breakdown of household income throughout Johannesburg as well as in Wards 32 and 93.

Table 2.9 Household income

Household income	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
No income	196685	18,7	2142	22,9	520	3,8
R1 - R4 800	43627	4,2	377	4,0	233	1,7
R4 801 - R 9 600	114643	10,9	847	9,1	837	6,1
R9 601 - R 19 200	185263	17,6	2244	24,0	1512	11,0
R19 201 - R 38 400	167586	16,0	1792	19,2	916	6,7
R38 401 - R 76 800	120624	11,5	948	10,1	1090	7,9
R76 801 - R153 600	90237	8,6	435	4,7	1984	14,4
R153601-R307200	70778	6,7	318	3,4	3091	22,5
R307201-R614400	39612	3,8	168	1,8	2425	17,6
R614401-R1228800	12202	1,2	52	0,6	748	5,4
R1228801-R2457600	4802	0,5	14	0,1	209	1,5
R2 457 601 , more	3419	0,3	12	0,1	184	1,3
Not Applicable	744	0,1	1	0,0	6	0,0
Total	**1050222**	**100**	**9350**	**100**	**13755**	**100**

Source: Stats SA (Census, 2001)

- Household size

11,7% of households in Johannesburg consist of 7 or more individuals while the corresponding percentage is 3,2% in Ward 32 and 0,4% in Ward 93. The high percentage of single households in Ward 32 that distorts this data is possibly due to hostel type single accommodation that falls within this ward. An indication of the distribution of household size is provided below in table 2.10.

Table 2.10 Household size

Household size	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
One	264076	25,1	2257	24,1	4364	14,2
Two	250613	23,9	2475	26,5	4259	13,9
Three	174623	16,6	1786	19,1	2178	7,1
Four	148788	14,2	1307	14,0	1761	5,7
Five	89432	8,5	744	8,0	751	2,4
Six	51595	4,9	385	4,1	282	0,9
Seven	28727	2,7	198	2,1	99	0,3
Eight	16292	1,6	91	1,0	30	0,1
Nine	9726	0,9	57	0,6	15	0,0
Ten and over	16352	1,6	50	0,5	20	0,1
Total	**1050224**	**100**	**9350**	**100**	**30662**	**100**

Source: Stats SA (Census, 2001)

- Number of rooms

There are a proportionately high percentage of one room households in Ward 32 at 44% which again could be an indication of hostel type or informal accommodation. In Johannesburg 29,1% of the population and in Ward 93 15,5% of the population reside in one room accommodation. Ward 93 has the highest percentage of households residing in houses with seven or more rooms at 25,8%, compared to 15,1%, throughout Johannesburg and 6,5%, in Ward 32. The number of rooms per household is illustrated in table 2.10 below.

Table 2.11 Number of rooms

Number of rooms	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
One	305131	29,1	4113	44,0	2139	15,5
Two	127907	12,2	1676	17,9	726	5,3
Three	96063	9,1	1245	13,3	1235	9,0
Four	187809	17,9	1195	12,8	3009	21,9
Five	101609	9,7	285	3,0	1724	12,5
Six	73228	7,0	225	2,4	1393	10,1
Seven	47361	4,5	106	1,1	964	7,0
Eight	28696	2,7	75	0,8	751	5,5
Nine	17543	1,7	54	0,6	462	3,4
Over Ten	22058	2,1	114	1,2	644	4,7
Not Applicable	42820	4,1	260	2,8	709	5,2
Total	**1050225**	**100**	**9348**	**100**	**13756**	**100**

Source: Stats SA (Census, 2001)

- Tenure status

With regard to tenure status, at 31,7%, most households in Johannesburg rent accommodation with 24,1% having fully paid for the accommodation that they own. In Ward 32, however, most households, 30,9%, occupy rent-free accommodation. This is often an indicator of a relatively high prevalence of hostel type or informal accommodation in the area. 42,9% of households in Ward 93 reside in accommodation that is owned but is not fully paid up. This is an indication of a comparatively newly developed area where some home owners still have mortgage obligations. The tenure status of households across Johannesburg and in Wards 32 and 93 are illustrated in table 2.12.

Table 2.12 Tenure status

Tenure status	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
Owned, Fully Paid	253605	24,1	1796	19,2	1784	13,0
Owned, Not Paid	221708	21,1	2408	25,7	5903	42,9
Rented	332458	31,7	2001	21,4	3309	24,0
Occupied rent-free	198969	18,9	2886	30,9	2049	14,9
Not applicable	43487	4,1	261	2,8	715	5,2
Total	**1050227**	**100**	**9352**	**100**	**13760**	**100**

Source: Stats SA (Census, 2001) Source: Stats SA (Census, 2001)

- Mode of transport

Across the Johannesburg Municipal Metropolitan 17,3% of the population travels on foot while 12,8% travel by minibus/taxi, 10,5% by car as the driver and 6,9% by car as the passengers. In Ward 32, 21,1% of the population travel by minibus/taxi, while 15,2% travel by foot, 6,5% by car as the driver and 5,3% by car as a passenger. In Ward 93, the motor car is by far the most common mode of transport. 40,5% of the population of Ward 93 travel by car as the driver while 18,1% travel by car as the passenger, 9,4% travel on foot and 4,1% travel by minibus/taxi. Table 2.13 provides a comparative illustration of the mode of transport in the region.

Table 2.13 Mode of transport

Mode of transport	Johannesburg		Ward 32		Ward 93	
	N	%	N	%	N	%
Not applicable	1495549	46,4	13190	49,5	8318	24,9
On foot	558735	17,3	4054	15,2	3089	9,2
Bicycle	10425	0,3	117	0,4	139	0,4
Motorcycle	9358	0,3	45	0,2	290	0,9
Car as a driver	338641	10,5	1742	6,5	13526	40,5
Car passenger	222684	6,9	1404	5,3	6058	18,1
Minibus/taxi	411646	12,8	5611	21,1	1368	4,1
Bus	79266	2,5	150	0,6	233	0,7
Train	87095	2,7	255	1,0	71	0,2
Other	11905	0,4	62	0,2	332	1,0
Total	**3225304**	**100**	**26630**	**100**	**33424**	**100**

Source: Stats SA (Census, 2001)

- Energy source

The energy sources used by households, for cooking, heating and lighting in the Johannesburg Municipal region and in the two wards under discussion are now addressed. In Johannesburg 78,5% of households make use of electricity for

cooking while 17,5% make use of paraffin. The situation in Wards 32 and 93 starkly contrast each other. In Ward 32 only 44,7% of households use electricity for cooking and 51% use paraffin, while in Ward 93, 94,1% use electricity and 2,9% gas for cooking. This trend also holds true in respect of the energy used for heating and lighting.

As far as heating is concerned, 77,2% of households in Johannesburg use electricity while 10,8% use gas. In Ward 32, 43,1% use electricity for heating and 43,2% paraffin, while in Ward 93, 89,7% use electricity and 5,2% gas for heating.

With respect to lighting 85,1% of Johannesburg households, 64,9% of households in Ward 32 and 84,7% in Ward 93 use electricity. Candles, the next highest source of energy for lighting are used by 11,1% of households throughout Johannesburg 31,8% in Ward 32 and 1,3% in Ward 93.

- Other household indicators

As far as the other household indicators consisting of water, toilet facilities, and refuse removal are concerned a similar trend is found as was the situation with energy sources. While 25% of households across Johannesburg have access to a direct source of water within their dwellings only 12,9% have this access in Ward 32 while 41,6% have it in Ward 93.

82,3% of households across the Johannesburg Municipal region have access to a flush toilet system, while in Ward 34 only 64,1% have a flush toilet facility and 24,6% still rely on the bucket latrine system. In Ward 93, 85,0% of households have a flush toilet system.

In Johannesburg 90,9% of households have their refuse collected once a week while in Ward 32 93,2% of households enjoy a weekly refuse removal facility as do 94,3% of Ward 93 households.

It is against the geographical and demographic background provided above that the situation regarding the wards in which the proposed project may take place will now be considered.

3 DISCUSSION

When compared to each other and the situation across the Johannesburg Metropolitan Municipality, it can clearly be seen that each of the wards in which the proposed project is situated fall at opposing ends of the economic spectrum. Although Ward 32 is not the poorest area in Johannesburg it ranks amongst the poorer regions within the City. In Ward 32, the official unemployment level is at 46%. A total of 61,5% of the population and 22,9% of households have no income and 10,8% of the population have no schooling.

The corresponding indicators across the City of Johannesburg are official unemployment levels of 45,8%, 59% of the population and 18,7% of households with no income and 7,2% of the population having no schooling. In Ward 93 the situation is starkly different as only 4% of the population is officially unemployed, 35% of the population and 3,8% of households have no income and 3,1% of the population have no schooling.

A perusal of all other indicators addressed above will also highlight some degree of poverty amongst Ward 32 residents and a high level of affluence amongst those residing in Ward 93. It is likely that such contrasting conditions will result is varying social impacts that will need to be considered. However, before attempting this attention will now be given to the methodology that will be employed during the social impact assessment process.

4 ASSESSMENT OF SOCIAL IMPACTS

Attention is now turned towards the impact assessment technique utilised during this study following which the probable social impacts attached to the proposed project will be considered.

4.1 Impact Assessment Technique

The Social Impact Assessment (SIA) aims to ascertain the nature, extent, duration, probability, significance and status of identified impacts that may arise as a result of the proposed Waterfall Wedge project. This analysis must, however, remain consistent with the assessment criteria applied by other specialist studies in respect of the broader EIA. Towards this end the criteria, as laid out below, are employed.

4.1.1 Extent

This indicates the special area that may be affected by the impact and further describes the possibility that adjoining areas may be impacted upon. This includes four classes that are listed as follows:

- Local – Extending only as far as the site
- Limited – Limited to the site and its immediate surrounds
- Regional – Extending beyond the immediate surrounds to affect a larger area
- National or International

4.1.2 Duration

This refers to the period of the time that the impact may be operative for (i.e. the lifetime of the impact). This includes the following four classes that are listed as follows:

- Short – 0 - 5 years
- Medium – 5 - 15 years
- Long – > 15 years and/or where natural processes will return following the cessation of the activity or following human intervention
- Permanent – Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient

4.1.3 Intensity

This indicates whether the impact is likely to be destructive or have a lesser effect. Three such classes of intensity are defined and these are listed as:

- Low – Where natural, cultural and social functions and processes are not affected by the development
- Medium – Where natural, cultural and/or social functions and processes are affected by the development but can continue in a modified way
- High – Where natural, cultural and/or social functions and processes are altered to the extent that it will temporarily or permanently cease

4.1.4 Probability

This refers to the likelihood of the impact actually occurring. The following four classes are used to describe the probability of the impact:

- None – The impact will not have an influence on the decision and requires no mitigation
- Medium – The impact is likely to have an influence on the decision and requires mitigation
- High – Mitigation is required and this may not be sufficient to ensure that the environment is not detrimentally affected by the proposed development

4.1.5 Significance

The significance of the impact (i.e. whether it will lead to a marked change in the environment or not) is determined through a synthesis of the aspects produced in terms of their nature, intensity, extent and probability. Four classes of significance exist:

- None – The impact will not have an influence on the decision and requires no mitigation
- Low – Where it is likely to have an influence on the decision and requires mitigation
- Medium – Where it should have an influence on the decision unless it is mitigated
- High – Where it would influence the decision regardless of any possible mitigation

4.1.6 Status

Status indicates whether the impact has either positive or negative consequences.

It must be noted that the project will unfold over a series of stages that can be categorised into the following chronological sequence of events, the pre-construction, construction and operational phases. In considering the social impacts below, this assessment will take each of these phases into account. Based on the above description, the various potential social impacts will now be identified and assessed.

4.2 Social Impacts

Three project phases incorporating planning, construction and the operational phases can be identified. During the planning phase the nature of the project is such that little or no significant social impacts can be expected. Consequently, attention will focus on two of these phases namely the construction and operational phases of the project.

4.2.1 Construction phase

Construction is expected to take place over a period of five years at a rate of some 800 housing units per annum. During the construction phase of the project the major social impacts are likely to be traffic disruption, crime and deviant behaviour and job creation. Each of these will be addressed in greater detail below.

- Traffic disruption

It has been well documented that the road systems in the area of the proposed project are currently under pressure (Gauteng Transport Network Integration Process, 2006; Sunday Times, 1st October, 2006; Transportation and Traffic Technology Africa (Pty) Ltd, 2007). It is most likely that this congestion will be aggravated during the construction phase of the project as construction and delivery vehicles move in and out of the construction site. Such an increase in heavy traffic in the area could also pose an increased risk to public health and safety due to increased noise levels, the potential for road accidents and increased air pollution caused through the generation of dust and vehicle fumes.

It is likely that this impact, which is negative, will be limited to the site and its immediate surrounds. While the probability of it occurring is high the duration is short-term and the intensity and significance medium.

- Job creation

During construction, the project is likely to result in the creation of some 5 000 jobs over a five year period. These jobs are construction related with the majority ranging between skilled artisans and unskilled workers. The majority of these jobs will be at the unskilled level and can be sourced locally.

This impact is positive and is likely to extend beyond the immediate surrounds of the project to affect a larger area at the regional level. The probability of this occurring is high the duration is short-term and the intensity and significance is medium.

- Crime and deviant behaviour

The influx of workers often draws with it an opportunistic element that feeds off the increase in money and temporary nature of the situation. At a rate of some 5 000 workers over the construction period it is likely that, if not carefully managed, there could be an increase in crime and deviant behaviour such as prostitution and drug taking in the area, which would pose a threat to public safety. It is also likely that, if not carefully policed, this impact will remain for a longer period than just over the construction phase. This risk exists due to the fact that once criminal and deviant networks have been established they tend to take some time to dissipate even though the initial reason that drew them to the area may have ceased.

This impact is negative and is likely to extend beyond the immediate surrounds of the project and affect a larger area at the regional level. The probability of this occurring is medium the duration is short-term and the intensity and significance is also medium. Attention will now be turned towards the operational phase of the project.

4.2.2 Operational phase

During the operational phase of the project the range of impacts likely to occur include traffic disruption, crime, disruption to access routes, job creation and housing. Each of these issues will now be addressed below in more detail.

- traffic congestion

For some years now, traffic congestion around the area of the project has been escalating (Gauteng Transport Network Integration Process, 2006; Sunday Times, 1st October, 2006; Transportation and Traffic Technology Africa (Pty) Ltd, 2007). Although various options are being considered by the authorities to alleviate the situation projects such as the one under discussion here are likely to aggravate the problem. With 3 200 additional residential units plus various business facilities the increase in traffic is likely to be significant. From a social perspective this is likely to lead to traffic congestion and frustration, an increase in travel time and risk of accidents.

In this regard the traffic impact study (Transportation and Traffic Technology Africa (Pty) Ltd, 2007:11-13) found that "[a]*ll of the development traffic will take access on Allandale Road…*" and that " *…the first intersection at Allandale Road – Dane Road intersection, can accommodate approximately 80% of the proposed development's traffic*". The traffic study also suggests that before the 80% capacity is reached that provision for a second access point at the Allendale Road – Alsatian Road intersection is made.

Notwithstanding this the concern is that the provincial routes, K58, K60 and the K110 are either in need of an upgrade, as with the K58, or have as yet not been constructed as is the case with the K60 and K110, and that this project will add to current traffic congestion in the area extending as far as the N1 national route. It must be noted that the N1 national route is currently under severe traffic pressure. In this sense two scenarios can be constructed. The first, scenario – 1, refers to a situation where the necessary upgrades are delayed or not undertaken. The second, scenario – 2, concerns a situation where all planned upgrades are timeously completed.

Scenario 1 – This scenario, which is negative, will at least have a regional affect beyond the immediate surrounds of the project. The duration is likely to extend over the medium term, the intensity will at least be at the medium level and the probability and significance is likely to be high.

Scenario 2 – In the event of all upgrades being completed on time the severity of this impact, which remains negative, is likely to be significantly reduced in the surrounds of the project but will still extend as far as the N1 at a moderate level of severity. The duration is likely to be medium term, the intensity low and the probability and significance medium.

- Crime

The urbanisation of the area and associated in-migration of work-seekers could possibly result in an increase in criminal and deviant activities associated with urbanisation. There is, however, no indication that this activity would exceed 'normal' expectations, nevertheless it should be noted and managed as part of the project.

This impact is likely to have a negative affect on a larger area extending beyond the immediate surrounds of the project to the regional level. The probability of this

occurring is medium the duration is short to medium-term and the intensity and significance is medium.

- Disruption to access routes

The building of enclosed structures on vacant land has the potential to affect existing access routes usually in the form of footpaths that may across that land. A visit to the project site revealed no obvious footpaths in the area, however, any assessment was made extremely difficult by the various paths made by 4x4 vehicles, quad bikes and scramblers in the area.

This is a negative that has a local extent, the duration is of a short-term nature, the intensity is low and the probability and significance is unlikely to have any influence on the decision. Notwithstanding this however, it is important to note that in fencing off a large area this may prove to be inconvenient to pedestrians needing access from various points and that provision needs to be made to reduce such difficulties.

- Job creation

The construction of 3 228 dwellings, together with an education facility, place of worship and business site has the potential to create a number of semi- and unskilled jobs in the area. This in turn, albeit on a somewhat limited basis, will help in addressing unemployment in the region.

In this regard this impact, which is positive, is likely to be at the regional level, the duration is expected to be long-term and the intensity and probability medium. The significance is also likely to be medium.

- Housing

The issue of housing is pertinent in the context of the housing shortage that the country is currently facing. The accent in the country is, however, on low-cost RDP housing with particular emphasis on the poor and integrating the poor into urban and peri-urban areas close to where they can secure work. The urgency of the need to address the housing shortage in peri-urban areas and to provide housing close to peoples places of employment is highlighted in the recently released report "*In Search Of Land and Housing In The New South Africa: The Case Of Ethembalethu*" (World Bank, 2007).

Considering these needs and the memorandum in support of the application for the township Jukskei View Extension 21, also referred to as Waterfall Wedge (Web Consulting, April 2007:7) which stated that the project will contribute towards the achievement of the strategic principles of the City of Johannesburg in the following manner.

> Through the "*Proactive absorption of the poor*" by including "*… low-income housing typologies integrated with middle income housing opportunities in a fully serviced and integrated township that will incorporate these developments into the broader urban fabric.*"
>
> Through the promotion of "*Balanced and shared growth*" by providing "[o]*ffice, commercial, residential and retail development [that] will encourage economic growth*."
>
> By "*Facilitating social mobility*" through the incorporation of "… *a number of housing typologies catering for a range of income earners that will give residents the means by which to 'climb' the 'housing ladder' while ensuring that people are not divorced from their existing social networks*".
>
> By providing an opportunity for "*Settlement restructuring*" through the creation of "… *a compact form and ensur[ing] that areas such as the Greater Ivory Park and Tembisa are drawn into the urban fabric.*"

It would be significant to consider this project as an opportunity to meet certain of the country's housing needs.

This, however, would need to be done in the light of the proposals made by the World Bank (2007:9) project team who suggest

> " *…the following areas for policy and program reform:*
>
> ***1.*** *Overcoming reluctance and resistance by municipalities and prospective neighbors to low-income settlements*
>
> ***2.*** *Making land use planning in municipalities explicitly pro-poor*
>
> ***3.*** *Restructuring the land market*
>
> ***4.*** *Realigning planning processes*
>
> ***5.*** *Designing a land and housing program targeted to peri-urban areas*
>
> ***6.*** *Reengineering program implementations*
>
> ***7.*** *Freeing up and building capacity.*"

If, in some way, the project is able to address certain of these issues its value is likely to be significantly increase.

This impact is likely to be positive and extend to at least the regional level. The duration is expected to be long-term and the intensity and probability both expected to be medium. If the developers are able to meet most of the "Strategic Issues" as listed by Web Consulting (2007:8) and in particular "… *the potential to address social exclusion through urban design that integrates communities across cultural and economic barriers*", the influence on the decision would be medium to high.

All the impacts discussed above are synthesised in table 4.1 below.

Table 4.1 Synthesis of impacts

Nature	Extent	Duration	Intensity	Probability	Significance	Status
Construction phase						
Traffic disruption	Limited	Short-term	Medium	High	Medium	Negative
Job creation	Regional	Short-term	Medium	High	Medium	Positive
Crime & deviant behaviour	Regional	Short-term	Medium	Medium	Medium	Negative
Operational phase						
Traffic disruption Scenario 1 Upgrades delayed or not undertaken	Regional	Medium-term	Medium	High	High	Negative
Traffic disruption Scenario 2 All planned upgrades timeously completed	Regional	Medium-term	Low	Medium	Medium	Negative
Crime	Regional	Medium-term	Medium	Medium	Medium	Negative
Disruption to access routes	Local	Short-term	Low	None	None	Negative
Job creation	Regional	Long-term	Medium	Medium	Medium	Positive
Housing	Regional	Long-term	Medium	Medium	Medium to high	Positive

Attention will now be turned towards the mitigation measures in respect of the various impacts.

4.3 Mitigation Measures

Mitigation measures will now be addressed in accordance with those impacts identified in respect of both the construction and operational phases of the project.

4.3.1 Construction phase

The major social impacts needing mitigation during construction would be traffic disruption, crime and deviant behaviour and job creation. Each of which will receive greater attention below.

- Traffic disruption

A traffic plan needs to be carefully considered and traffic control measures need to be put in place to ensure that traffic disruption is kept to a minimum and that the health and safety of all users is maintained at all times. This plan must be implemented in close conjunction with the appropriate traffic authorities. Periods of extensive disruption need to be communicated to the public by means of appropriate media sources such as regional news papers and radio.

- Job creation

It is important to source as many workers as possible from local communities such as Ivory Park and Tembisa and surrounds. Opportunities for skills development must be created and utilised in an effort to build skills amongst these local communities.

- Crime and deviant behaviour

The cooperation of SAPS and community policing forums must be sort to ensure that crime in the area is adequately managed. The possibility of a satellite police station in the vicinity of the project could be considered. These measures, if properly implemented, are likely to drop the probability of crime occurring to that of low.

4.3.2 Operational phase

The range of social impacts identified as likely to occur during the operational phase of the project are traffic disruption, crime, disruption to access routes, job creation and housing. These issues will now receive greater attention below.

- traffic congestion

The upgrading of the K58 and construction of alternate routes such as the K60 and K110 are all critical in reducing traffic congestion in the area. It would be important for these developments to take place in parallel with the development of the project.

If this occurs the probability and significance of the traffic impact would be reduced to medium.

- Crime

Community policing and close liaison with SAPS is an important factor that should help to reduce crime. It would be important to keep a record of crime in the area and to respond to this on a regular basis.

- Disruption to access routes

If the intention is to fence the development and provide security access points these need to be carefully planned to ensure that people forced to make use of public transport and/or walk have easy access to their destinations.

- Job creation

Job creation during the operational phase of the project is an indirect consequence that is difficult to mitigate. However, what is within the control of the developers is to ensure public transport for workers with adequate provision for bus bays and taxi ranks, strategically positioned to provide workers with easy access to their place of work.

- Housing

Considering the World Bank report (2007), the provision of housing that meets the needs of low and middle income groups as well as assisting in addressing social exclusion by integrating communities across cultural and economic barriers will have value. If, however, this provision can be combined with the absorption of the poor as described in the World Bank report and help to at least overcome some *"… reluctance and resistance by municipalities and prospective neighbors to low-income settlements"* (as put by the World Bank project team) it would certainly carry even greater value.

Taking into consideration the mitigation measures as discussed above the impacts are again synthesised in table 4.2 below. This is done in respect of the changes that these mitigation measures are likely to bring about in respect of their significance of each impact.

Table 4.2 Synthesis of impacts after mitigation

Nature	Status	Significance
Construction phase		
Traffic disruption	Negative	Medium
Job creation	Positive	Medium
Crime & deviant behaviour	Negative	Low
Operational phase		
Traffic disruption	Negative	Medium
Crime	Negative	Low
Disruption to access routes	Negative	None
Job creation	Positive	Medium
Housing	Positive	High

In concluding this report a brief summary will be provided following which the social consequences of abandoning the project, referred to as the 'no-go' option, will be considered.

5. CONCLUSION

On a demographic basis the area in which the proposed project falls is rather mixed with sections that show a high level of household income with low unemployment while others have a low level of household income and high unemployment. The project development site lies within relatively easy reach of those communities needing employment and upliftment and, as such, provides some opportunity for this both during the construction and operational phases of the project.

The project also provides an opportunity to make available low and middle income housing that promotes social integration and social mobility and draws areas such as Ivory Park and Tembisa into the urban fabric. The opportunity also exists to eventually expand the project or undertake a separate project in the area that will have greater focus on the housing needs of poorer communities and moving towards overcoming the reluctance and resistance experiences by these poor communities.

On the negative side there is limited infrastructure in the immediate vicinity of the proposed development, not the least of which are various access routes that would either need to be upgraded or would need to be constructed. Due to this the

potential for traffic disruption during construction and through the operational phase of the project is relatively high. As with many construction sites and certain developments the issue of crime will need to be carefully monitored and controlled.

With regard to the 'no-go' option it is clear that the various opportunities that exist to address the duality of living space that arose during the era of apartheid will be lost, as will the opportunity to provide much needed low, and possibly to a somewhat lesser degree, middle income housing. What will also be lost is the prospect of creating some 5 000 jobs during the construction phase as well as the chance to stimulate the local economy in respect of much needed semi- and unskilled jobs over a longer term period. On the other hand a 'no-go' option will prevent the extra burden that traffic from the project would place on surrounding routes including the currently overburdened N1 route.

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