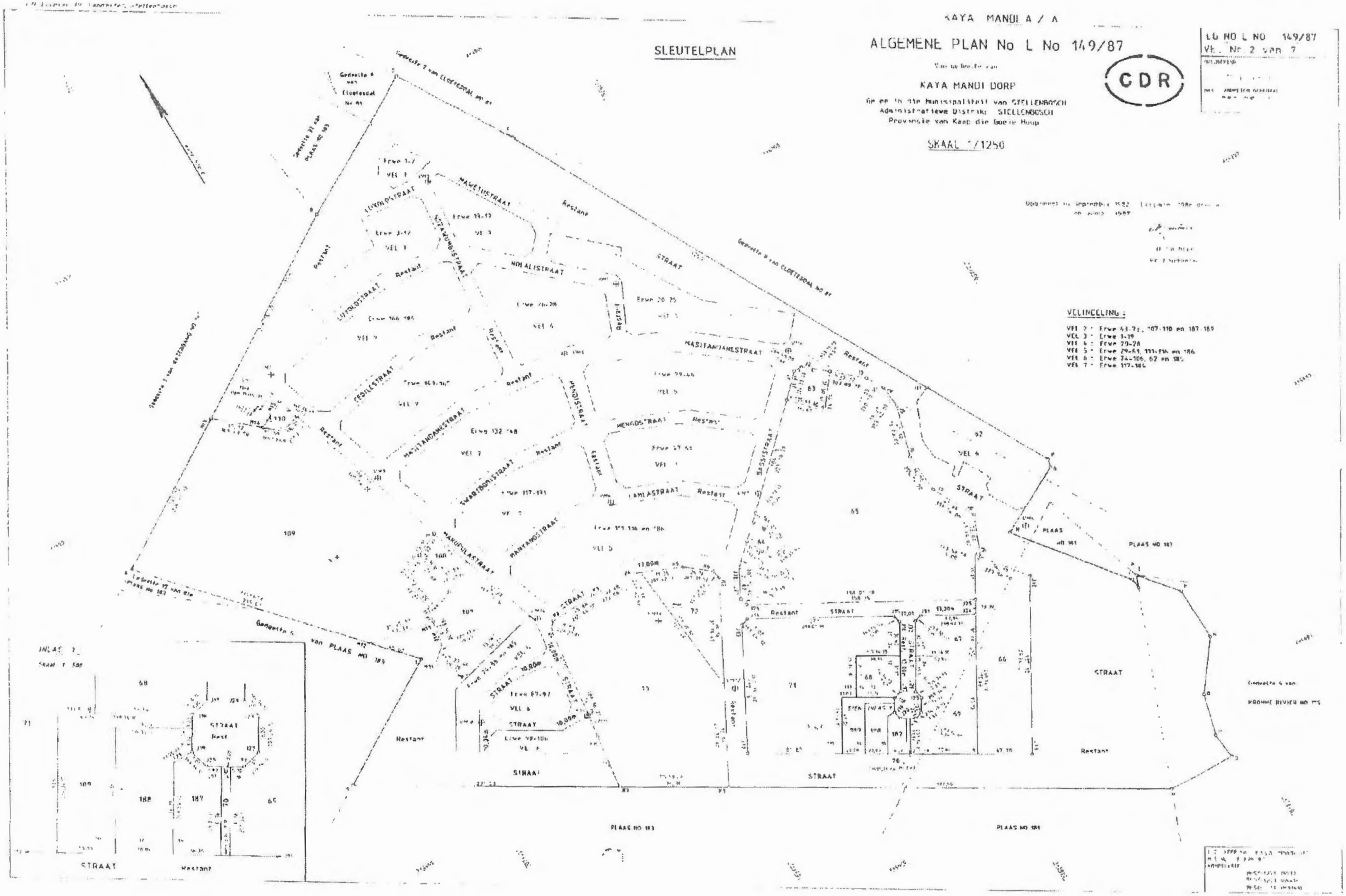
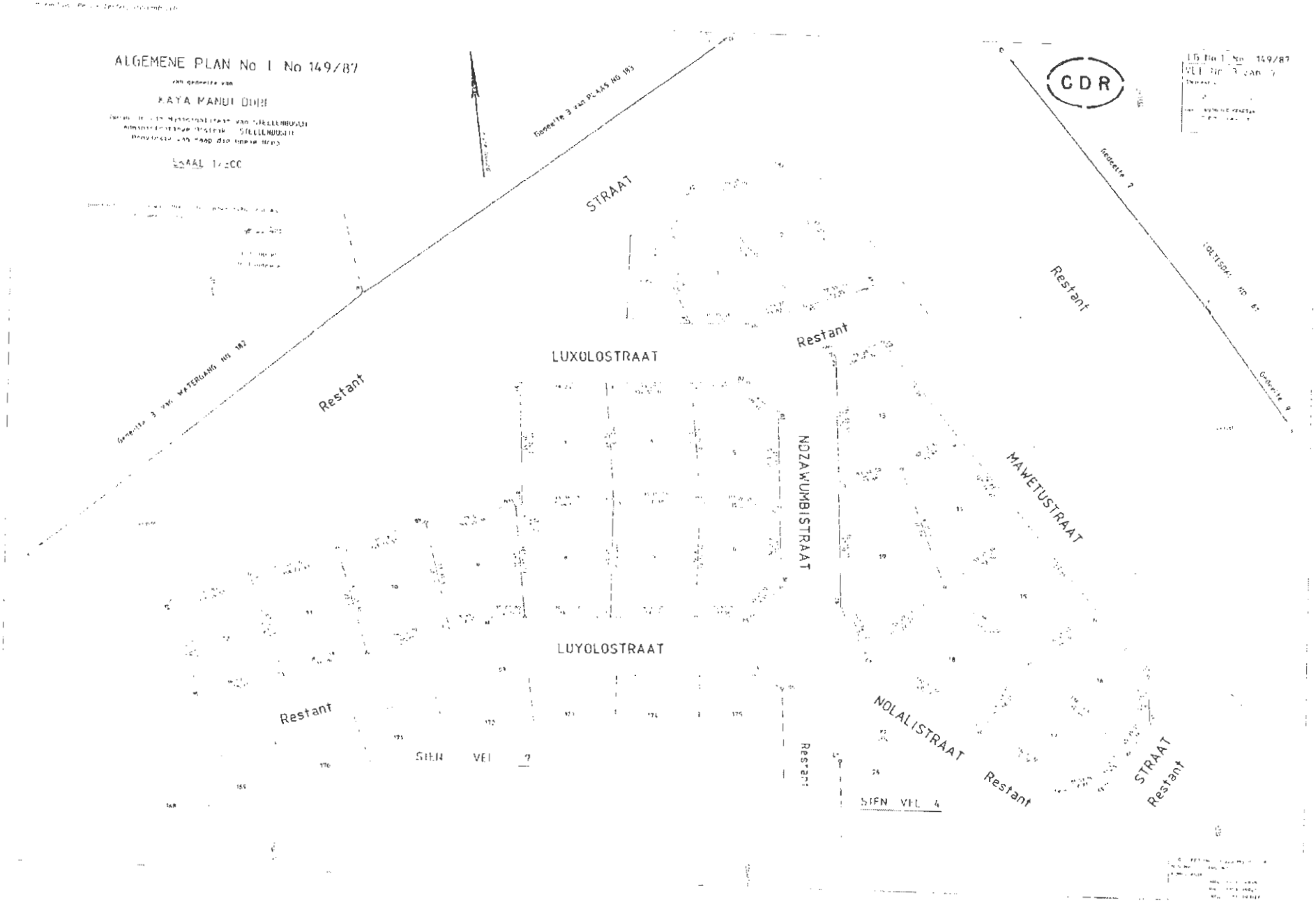
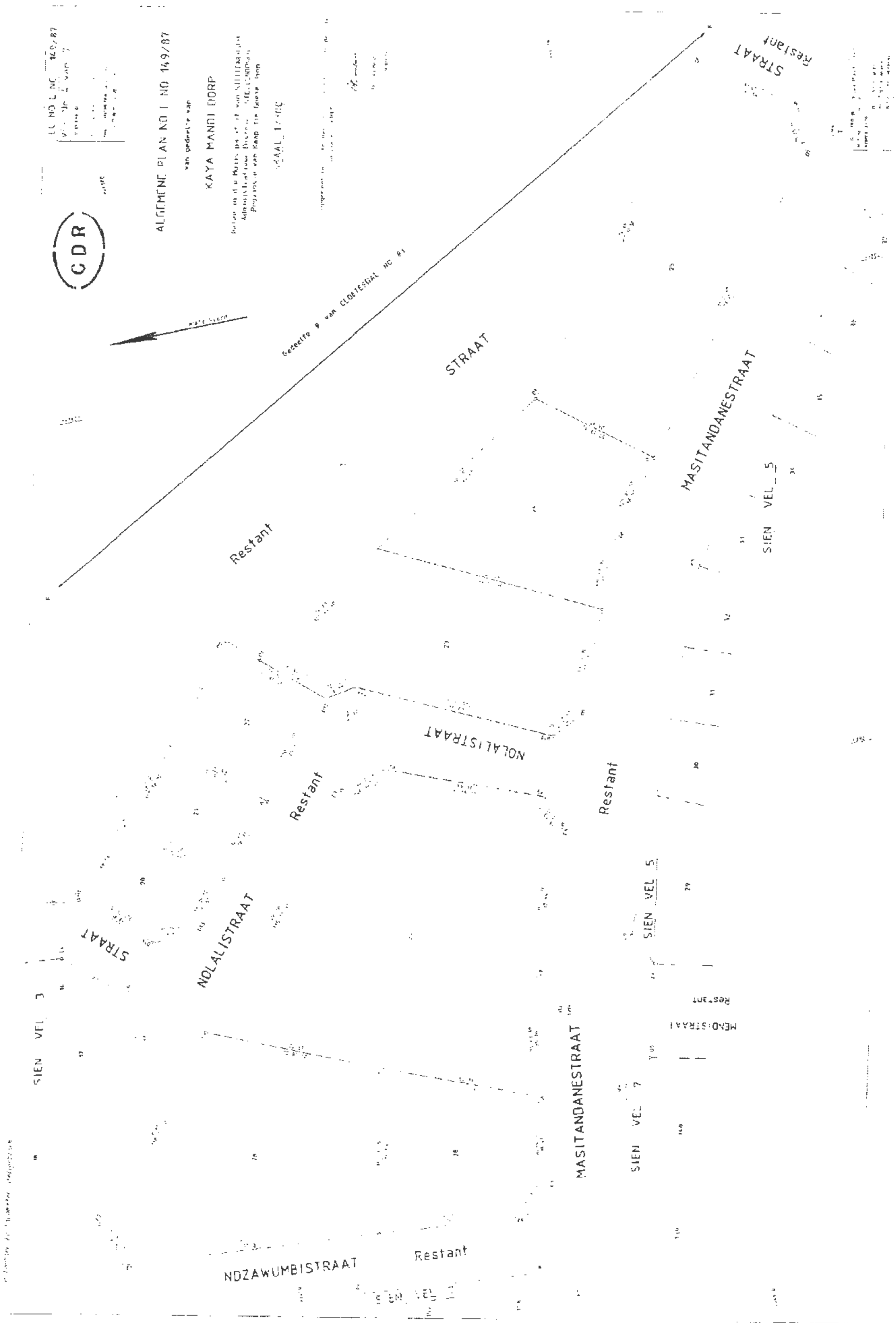
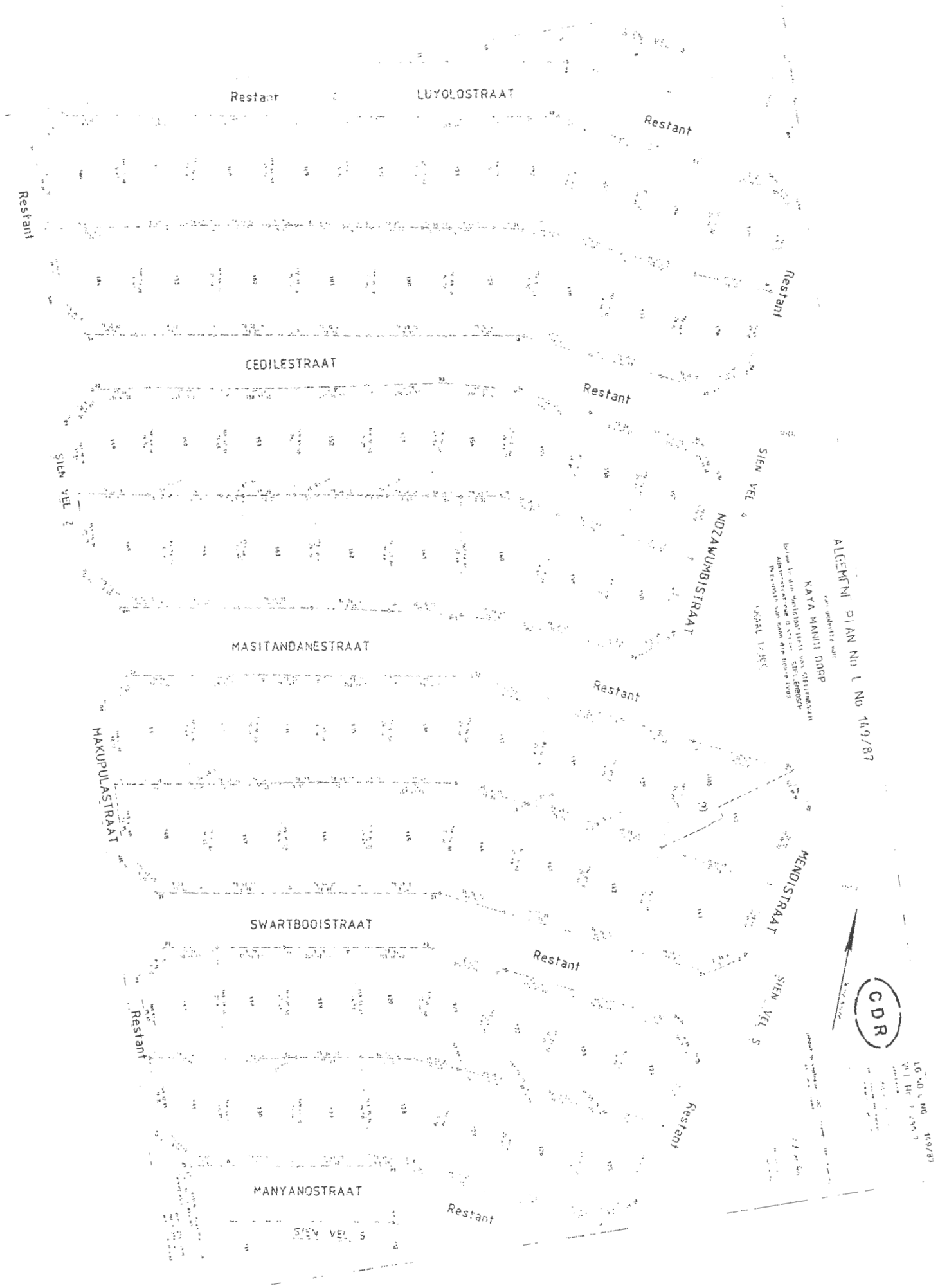

KAYA MANDI A / A
ALGEMENE PLAN No L No 149/87
SLEUTELPLAN
KAYA MANDI DORP
Administratiewe Distrik: STELLENBOSCH
Provinsie van Kaap die Goeie Hoop
SKAAL 1/1250
CDR
LG NO L NO 149/87
VEL Nr 2 van 7
VELINDELING :
VEL 2 · Erwe 43-72, 107-110 en 187-189
VEL 3 · Erwe 1-19
VEL 4 · Erwe 20-28
VEL 5 · Erwe 29-61, 111-116 en 186
VEL 6 · Erwe 74-106, 62 en 185
VEL 7 · Erwe 117-184
MASITANDANESTRAAT
MASITANDANESTRAAT
MENDISTRAAT
MENGOSTRAAT
LAMLASTRAAT
SASSISTRAAT
NDLALISTRAAT
MAKETLISTRAAT
MAKUPULASTRAAT
PAKPANDSTRAAT
CEDILESTRAAT
STRAAT
Restant
PLAAS NO 183
PLAAS NO 184
PLAAS NO 187
INLAS 2
Skaal 1:500


ALGEMENE PLAN No 1 No 149/87
KAYA MANDI DIRR
SKAAL 1:500
CDR
STRAAT
Restant
LUXOLOSTRAAT
LUYOLOSTRAAT
NOZAWUMBISTRAAT
MAWETUSTRAAT
NOLALISTRAAT
SIEN VEL 2
SIEN VEL 4


ALGEMENE PLAN NO I NO 149/87
van gedeelte van
KAYA MANDI DORP
CDR
Gedeelte 9 van CLOETESDAL NO 81
STRAAT
Restant
MASITANDANESTRAAT
SIEN VEL 5
NOLALISTRAAT
Restant
Restant
SIEN VEL 5
STRAAT
NOLALISTRAAT
SIEN VEL 3
MASITANDANESTRAAT
SIEN VEL 7
Restant
NDZAWUMBISTRAAT
Restant

ALGEMENE PLAN NO 1 NO 149/87
KAYA MENG
MAKUPULASTRAAT
MANYANOSTRAAT
MENDISTRAAT
LAMLASTRAAT
MENGOSTRAAT
MASITANOANESTRAAT
BASSISTRAAT
13,00M
Restant
SIEN VEL 7
GDR

ALGEMENE PLAN No L No 149/07
KAYA MANDI DORP
SCHAAL 1/300
CDR
STRAAT
Restant
SIEN VEL 2
10,00m


LUYOLOSTRAAT
CEDILESTRAAT
MASITANDANESTRAAT
SWARTBOOISTRAAT
MANYANOSTRAAT
MAKUPULASTRAAT
NOZAMUNDISTRAAT
MENDISTRAAT
Restant
SIEN VEL 5
ALGEMENE PLAN No L No 149/87
KAYA MANDI MARP
CDR

(KAYA MANDI ALLOTMENT AREA)

AMENDING GENERAL PLAN No. L No. 290/89

CONSISTING OF 3 SHEETS

OF

PART OF THE TOWNSHIP OF KAYA MANDI

BEING A RELAYOUT OF ERVEN 71, 188, 189 KAYA MANDI AND STREETS
VIDE GENERAL PLAN No. L No. [illegible]
SITUATE IN THE MUNICIPALITY OF STELLENBOSCH
ADMINISTRATIVE DISTRICT OF STELLENBOSCH
PROVINCE OF THE CAPE OF GOOD HOPE

C

SURVEYED IN JULY - DECEMBER [illegible]
BY ME

[signature]

D.S. HELLIG
LAND SURVEYOR

S.G. No L 290/89
SHEET 1 OF 3 SHEETS
APPROVED [signature] for SURVEYOR - GENERAL
[illegible]

CDR

ENDORSEMENTS					
NO	AMENDMENT	ADDITION	AUTHORITY	INTO	DATE

MAIN			
SIDES		DISTANCES METRES	ANGLES OF DIRECTION
A	B	[illegible].04	253 14 10
B	C	27.13	258 57 40
C	D	6.04	341 50 40
D	E	30.61	29 46 10
E	F	18.15	117 16 10
F	G	36.17	29 16 10
G	H	12.36	299 16 10
H	J	13.02	29 16 10
J	K	7.29	90 00 00
K	L	12.86	29 36 10
L	M	126.[illegible]	299 16 10
M	N	103.07	209 16 10
N	O	[illegible]	32[illegible] 23 [illegible]
O	P	9.40	35[illegible] 19 [illegible]
P	Q	[illegible]	20[illegible] 4 [illegible]
Q	R	45.9[illegible]	320 07 [illegible]
R	S	57.[illegible]	35[illegible] 10 [illegible]
S	T	52.86	36 23 40
T	U	37.43	14 41 10
U	V	21.00	153 06 20
V	W	43.24	90 23 00
W	X	9[illegible].67	19 42 20
X	A	157.99	207 19 40

FIGURE		
Constant	Y 0.00 METRES	X +3700000.00
A	13929.53	54348.20
B	13922.76	54346.14
C	13810.66	54405.07
D	13809.75	54412.78
E	13823.51	54439.24
F	13857.06	54420.32
G	13876.90	54451.78
H	13845.91	54448.23
J	13852.12	54479.54
K	13859.61	54479.56
L	13875.87	54508.20
M	13761.61	54569.67
N	13676.33	54605.18
O	13615.1[illegible]	54679.18
P	13611.80	54687.74
Q	13609.74	54627.36
R	13543.6[illegible]	54508.20
S	13581.96	54595.85
[illegible]	13612.39	54596.87
U	13623.58	54673.06
V	13678.82	54655.87
W	13619.06	54675.38
X	13795.91	54676.85

REFERENCE MARKS		
RM 1		
RM 2		
RM 3		

TRIGONOMETRICAL BEACONS		
Δ 395 [illegible]	11243.74	52[illegible].17
Δ 405 PARADYS	30120.28	59254.21

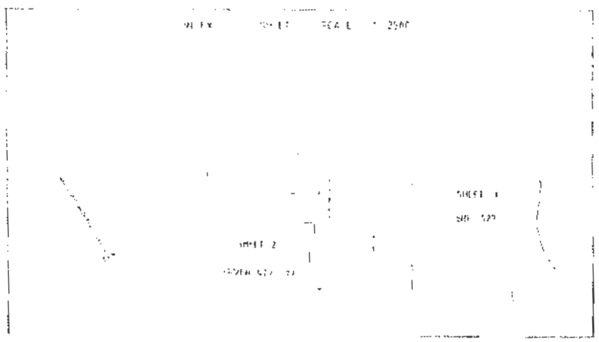
BLOCK CORNERS		
1	13913.91	54350.66
2	13934.23	54356.64
3	13908.75	54358.69
4	13999.23	54378.62
5	13908.03	54393.45
6	13892.94	54400.65
7	13885.35	54432.06
8	13884.18	54438.59
9	13882.21	54445.37
10	13894.79	54459.31
11	13894.68	54460.65
12	13903.31	54461.50
13	13917.59	54455.70
14	13926.64	54436.46
15	13930.61	54415.06
16	13965.61	54405.65
17	13953.29	54408.53
18	13945.17	54434.06
19	13961.82	54458.26
20	13958.87	54448.06
21	13943.55	54450.40
22	13542.85	54491.15
23	13227.25	54497.76
24	13516.28	54418.71
25	13508.56	54452.41
26	13302.31	54425.63
27	13996.28	54457.17
28	13990.12	54430.93
29	13895.28	54420.53
30	13894.13	54403.14
31	13215.57	54385.73
32	13750.36	54484.23
33	13746.86	54565.85
34	13782.76	54546.29

AREAS	
ERF NUMBER	SQUARE METRES
479	781
480	766
481	792
482	701
483	3355
484	327
485	206
486	145
487	93
488	207
489	147
490	318
491	227
492	276
493	605
494	745
495	676
496	780
497	173
498	185
499	186
500	187
501	181
502	187
503	187
504	187
505	324
506	1084
507	193
508	193
509	193
510	154
511	194
PP 512	55
513	194
514	194
515	196
516	195
517	195
518	195
519	195
520	195
521	196
522	198
523	2.8987ha

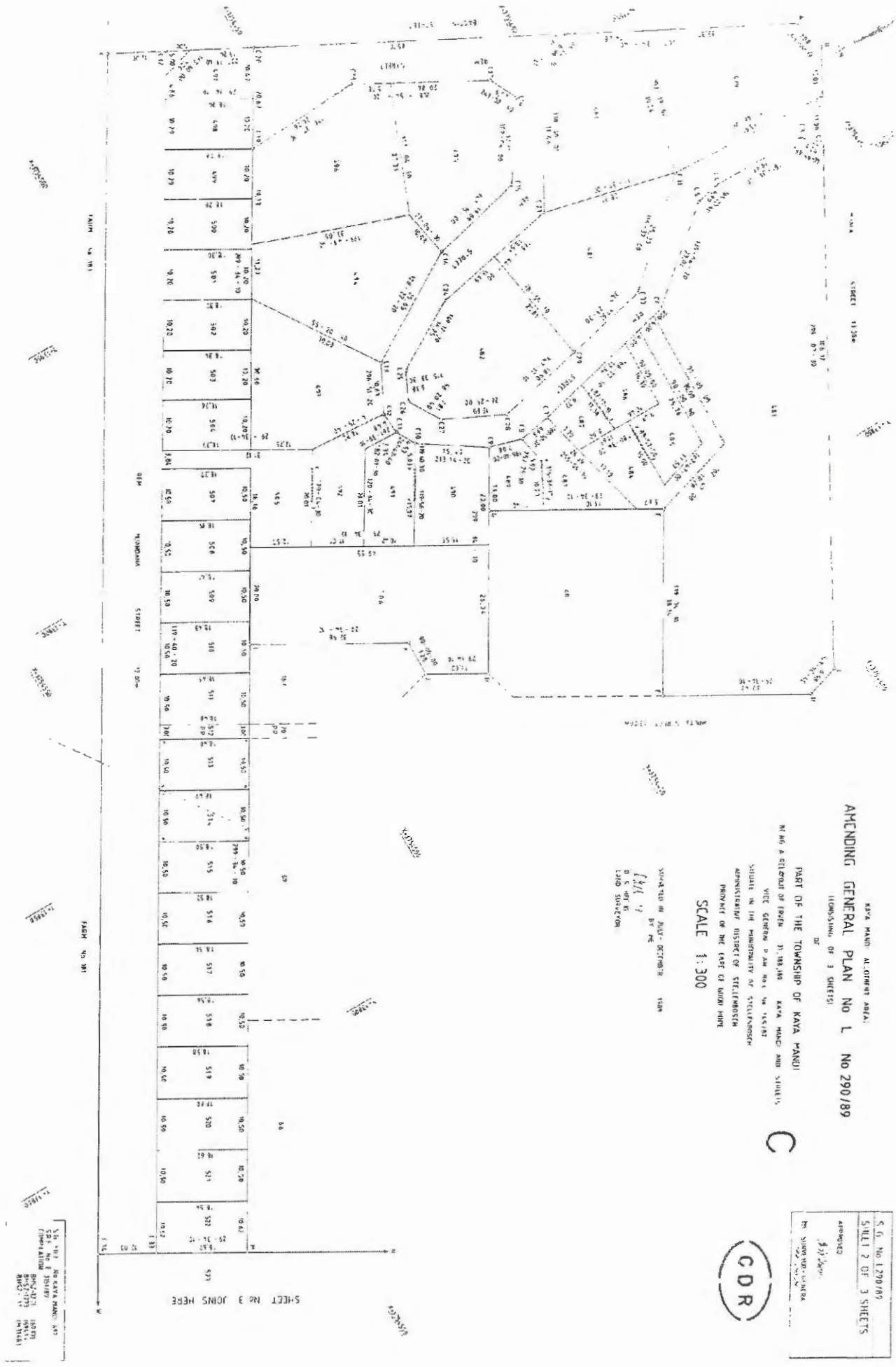
BEACON DESCRIPTION:

ALL BEACONS ARE 12mm IRON PEG
EXCEPT: [illegible] 12mm IRON PEG IN CONCRETE
B P 16mm IRON PEG
V 20mm IRON PEG
485x, 491x 12mm IRON PEG AT INT. OF PARTY WALLS
[illegible] 12mm IRON PEG IN TAR

NOTE
THE LINES 485x,y 486x,y 488x,y 490x,y and 492x,y Represent Party Walls



S.G. [illegible] KAYA MANDI [illegible]
[illegible]
COMPILATION
[illegible] (6939)
[illegible] (4941)
[illegible] [illegible]


AMENDING GENERAL PLAN No L No 290/89
PART OF THE TOWNSHIP OF KAYA MANJU
SCALE 1:300
S.G. No L290/89
SHEET 2 OF 3 SHEETS
SHEET No 3 JOINS HERE
C
C D R

AMENDING GENERAL PLAN No L 290/89
PART OF THE TOWNSHIP OF KAIA MAHU
SCALE 1 300
SHEET 3 OF 3 SHEETS
CDR

DAVID HELLIG & ABRAHAMSE, LAND SURVEYORS

OFFICE COPY

SIDES Metres		ANGLES OF DIRECTION		CO-ORDINATES Y System Lo19° X		
		Constant		+ 0.00		+3700 000.00
AB	423,14	299 40 20	A	+ 14 294,63	+	54 304,56
BC	7,09	74 55 40	B	+ 13 927,18	+	54 514,03
CD	124,53	30 11 10	C	+ 13 934,03	+	54 515,87
DE	65,45	74 50 00	D	+ 13 996,65	+	54 623,52
EF	128,00	120 11 10	E	+ 14 059,82	+	54 640,64
FG	7,07	75 11 10	F	+ 14 170,47	+	54 576,28
GH	54,50	30 11 10	G	+ 14 177,30	+	54 578,09
HJ	78,97	74 46 00	H	+ 14 204,70	+	54 625,20
JK	17,29	187 02 50	J	+ 14 280,89	+	54 645,95
KL	15,00	254 46 00	K	+ 14 278,77	+	54 628,79
LM	12,70	150 16 00	L	+ 14 264,30	+	54 624,85
MN	17,00	209 40 20	M	+ 14 270,60	+	54 613,82
NP	51,00	119 04 20	N	+ 14 262,18	+	54 599,05
PQ	69,07	108 10 40	P	+ 14 306,76	+	54 574,27
QR	7,85	58 37 50	Q	+ 14 372,38	+	54 552,72
RS	10,15	108 10 40	R	+ 14 379,08	+	54 556,81
ST	214,65	189 05 00	S	+ 14 388,72	+	54 553,64
TA	70,55	238 15 40	T	+ 14 354 83	+	54 341,68
		61 Stel 1	△	+ 15 339,25	+	54 040,38
		396 Nietvoorby	△	+ 11 819,08	+	53 484,41

S.G. No. 7987/91

Approved
for Surveyor-General
1992-02-03

Sheet 1 of 2 sheets

Beacon Description

A	Iron standard
T	20mm iron peg
All other beacons	12mm iron peg

The figure A B C D E F G H J K L M N P Q R S T

represents 9,0646 hectares of land being

situate Erf 707 Kaya Mandi in the Municipality and

Administrative District of Stellenbosch Province of Cape of Good Hope

Surveyed in August, September 1991

by me,

D.S. HELLIG
Land Surveyor

This diagram is annexed to No. 59361/2002 dated I.f.o. Registrar of Deeds

The original diagram is No. L25/1990 annexed to Transfer No. (FARM 1297)

File No. Kaya Mandi 687

S.R. No. C 2568/91
Comp.
BHSZ-11(M3168)

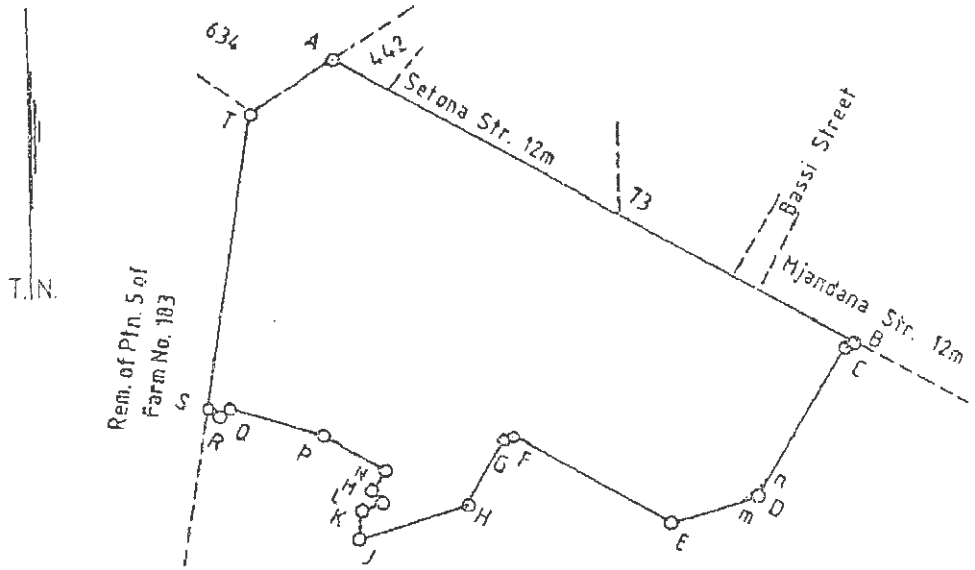
OFFICE COPY

Erf 707 Kaya Mandi

Small scale dgm. of Part of Kaya Mandi Township vide Gen. Plan No. 7988/91

S.G. No.
7987/91
Approved
J. Zacks
for Surveyor-General
1992-02-03

Sheet No 2 of 2 Sheets



Surveyed in August, September 1991 by me,

Land Surveyor

Scale 1:5000

B

MAIN			FIGURE		
	DISTANCE METRES	ANGLE OF DIRECTION	DISTANCE	CO-ORDINATES Y	X
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

REFERENCE MARKS

TRIGONOMETRICAL BEACONS		
Δ [illegible]	[illegible]	[illegible]
Δ [illegible]	[illegible]	[illegible]

BLOCK CORNERS		
[illegible]	[illegible]	[illegible]

AREAS			
ERF NUMBER	SQUARE METRES	ERF NUMBER	SQUARE METRES
[illegible]	[illegible]	[illegible]	[illegible]

C

AMENDING GENERAL PLAN No L No 291/89

PART OF THE TOWNSHIP OF KAYA MANDI

NOTE ALL ... DISTANCES ARE ...

BEACON DESCRIPTION

ALL ...

C C

D

S.G. No L 291/89

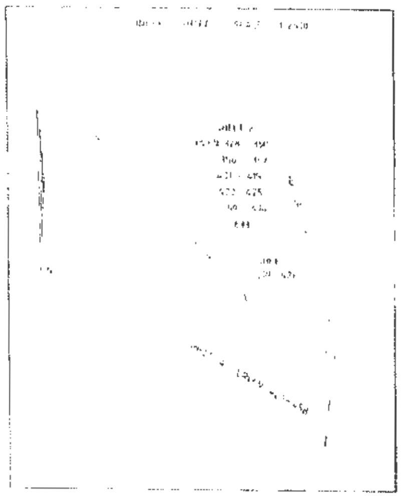
SHEET 1 OF 4 SHEETS

APPROVED

... SURVEYOR GENERAL

CDR

ENDORSEMENTS					
NO	AMENDMENT	ADDITION	AUTHORITY	INTD	DATE
[illegible]	[illegible]	[illegible]	[illegible]		



S.G. ... No KAYA MANDI ...

AMENDING GENERAL PLAN No L No 291/89
PART OF THE TOWNSHIP OF KAYA MANDI
SCALE 1 300
SHEET No 3 JOINS HERE

(KAYA MANDI ALLOTMENT AREA)

AMENDING GENERAL PLAN No 1 No 291/89

DIVISION OF 4 SHEETS

OF

PART OF THE TOWNSHIP OF KAYA MANDI

BEING A RELAYOUT OF ERVEN ... KAYA MANDI AND STREETS

VIDE GENERAL PLAN No ...

SITUATE IN THE MUNICIPALITY OF STELLENBOSCH

ADMINISTRATIVE DISTRICT OF STELLENBOSCH

PROVINCE OF THE CAPE OF GOOD HOPE

SCALE 1 300

SURVEYED IN ... OF ... 1989

LAND SURVEYOR

SG No 291 /89

SHEET 3 OF 4 SHEETS

APPROVED

for SURVEYOR GENERAL

CDR

AMENDING GENERAL PLAN No. 1 No 291/89
SCALE 1 300
C
C D R

MAIN FIGURE						
SIDES	DISTANCES METRES	ANGLES OF DIRECTION	CONSTANT	CO-ORDINATES SYSTEM Lo 19° Y	X	
A B	32.25	291 52 [illegible]	A	+ 13889.94	+ 54265.06	
B C	37.34	307 37 [illegible]	B	+ 13948.73	+ 54278.82	
C D	7.66	347 40 [illegible]	C	+ 13923.35	+ 54294.91	
D E	96.56	77 [illegible]	D	+ 13925.71	+ 54302.39	
E A	121.6[illegible]	173 [illegible]	E	+ 13969.43	+ 54185.79	

AREAS	
LOT NUMBER	SQUARE METRES
475	815
476	[illegible]
477	690
478	898

REFERENCE MARK		
RM 1	+	+

TRIGONOMETRICAL BEACONS		
396 TIMBERLEA 504	+ 11961.74 + 10120.28	+ 52955.19 + 59264.21

BLOCK CORNERS		
A 1	+ 13995.21	+ 54117.67
A 2	+ 13932.89	+ 54116.08
A 3	+ 13955.55	+ 54159.32
A 4	+ 13955.20	+ 54152.45
A 5	+ 13947.93	+ 54135.69
A 6	+ 11955.56	+ 54132.45

BEACON DESCRIPTIONS

ALL BEACONS 12mm IRON PEG

KAYA MANDI ALLOTMENT AREAS

AMENDING GENERAL PLAN No L No 289/89

OF

PART OF THE TOWNSHIP OF KAYA MANDI

BEING A RELAYOUT OF ERF 77 KAYA MANDI

VIDE GENERAL PLAN No L No 149/82

SITUATE IN THE MUNICIPALITY OF STELLENBOSCH

ADMINISTRATIVE DISTRICT OF STELLENBOSCH

PROVINCE OF THE CAPE OF GOOD HOPE

SCALE 1:300

SURVEYED IN JULY DECEMBER 1989

BY ME

D.S. HELLIG

LAND SURVEYOR

S.G. No L 289/89

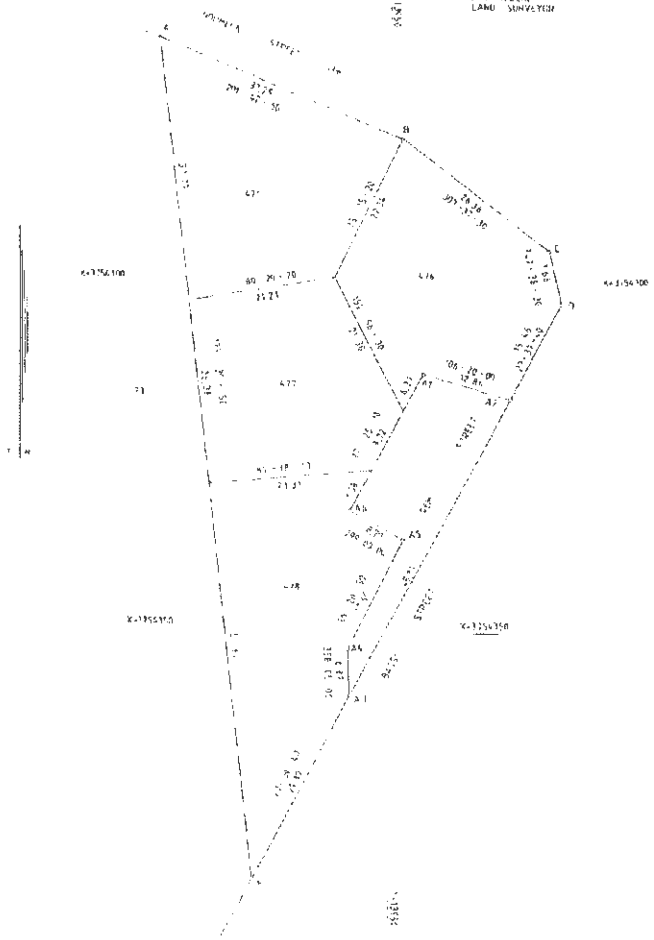
APPROVED

for SURVEYOR GENERAL

C

CDR

ENDORSEMENTS					
NO	AMENDMENT	ADDITION	AUTHORITY	INTD	DATE



S.G. ERF No KAYA MANDI 481
S.G. No L 1513/83
COMPILATION
RH52 17

(KAYA MANDI ALLOTMENT AREA)

GENERAL PLAN No. 7989/1991

OF

PART OF KAYA MANDI TOWNSHIP

ON

ERF 634 KAYA MANDI
VIDE DGH No L786/90 D/T
COMPRISING 70 ERVEN NUMBERED 636 to 651, 653 to 706 and
1 PUBLIC PLACE NUMBERED 652
AND STREETS.

SITUATE IN THE MUNICIPALITY OF STELLENBOSCH
ADMINISTRATIVE DISTRICT OF STELLENBOSCH
PROVINCE OF THE CAPE OF GOOD HOPE

SCALE 1:500

S.G No 7989/1991
APPROVED
for SURVEYOR GENERAL 1991-11-28
C.P.A. Community Services Western Cape

CDR

ENDORSEMENTS					
NO	AMENDMENT	ADDITION	AUTHORITY	INTD	DATE

S.G OFFICE NOTES

MAIN FIGURE	
CO-ORDINATES SYSTEM LO 19°	
Y METRES	X
A + 6 429,26	+ 4 267,74
B + 6 363,57	+ 4 276,7[illegible]
C + 6 352,99	+ 4 213,60
D + 6 203,68	+ 4 156,17
E + 6 182,1[illegible]	+ 4 237,[illegible]
F + 6 356,84	+ 4 361,88
G + 6 37[illegible],67	+ 4 330,50

BLOCK CORNERS	
A1 + 6 255,95	+ 4 169,45
A2 + 6 23[illegible]	+ 4 189,23
A3 + 6 [illegible]	+ 4 186,29
B2 + 6 [illegible]	+ 4 147,50
B3 + 6 206,[illegible]	+ 4 139,29
C1 + 6 240,84	+ 4 185,[illegible]
C2 + 6 247,68	+ 4 179,36
C3 + 6 241,96	+ 4 235,08
C4 + 6 270,78	+ 4 21[illegible],00
C5 + 6 247,61	+ 4 220,80
C6 + 6 227,81	+ 4 235,71
C7 + 6 221,86	+ 4 239,49
D1 + 6 225,38	+ 4 258,80
D2 + 6 376,56	+ 4 292,96
D3 + 6 399,05	+ 4 [illegible],88
E1 + 6 306,61	+ 4 2[illegible],62
E2 + 6 267,91	+ 4 303,34
E3 + 6 264,7[illegible]	+ 4 273,87
F1 + 6 [illegible]	+ 4 28[illegible]
F2 + 6 304,53	+ 4 300,71
F3 + 6 276,21	+ 4 262,01
F4 + 6 268,35	+ 4 217,67
F5 + 6 359,51	+ 4 330,77

TRIGONOMETRICAL BEACONS	
Δ [illegible] + 6 339,75	+ 4 960,20
Δ [illegible] + 5 819,08	+ 4 [illegible],19

REFERENCE MARKS	
RM1 + 6 240,92	+ 4 214,6[illegible]
RM2 + 6 359,42	+ 4 293,9[illegible]

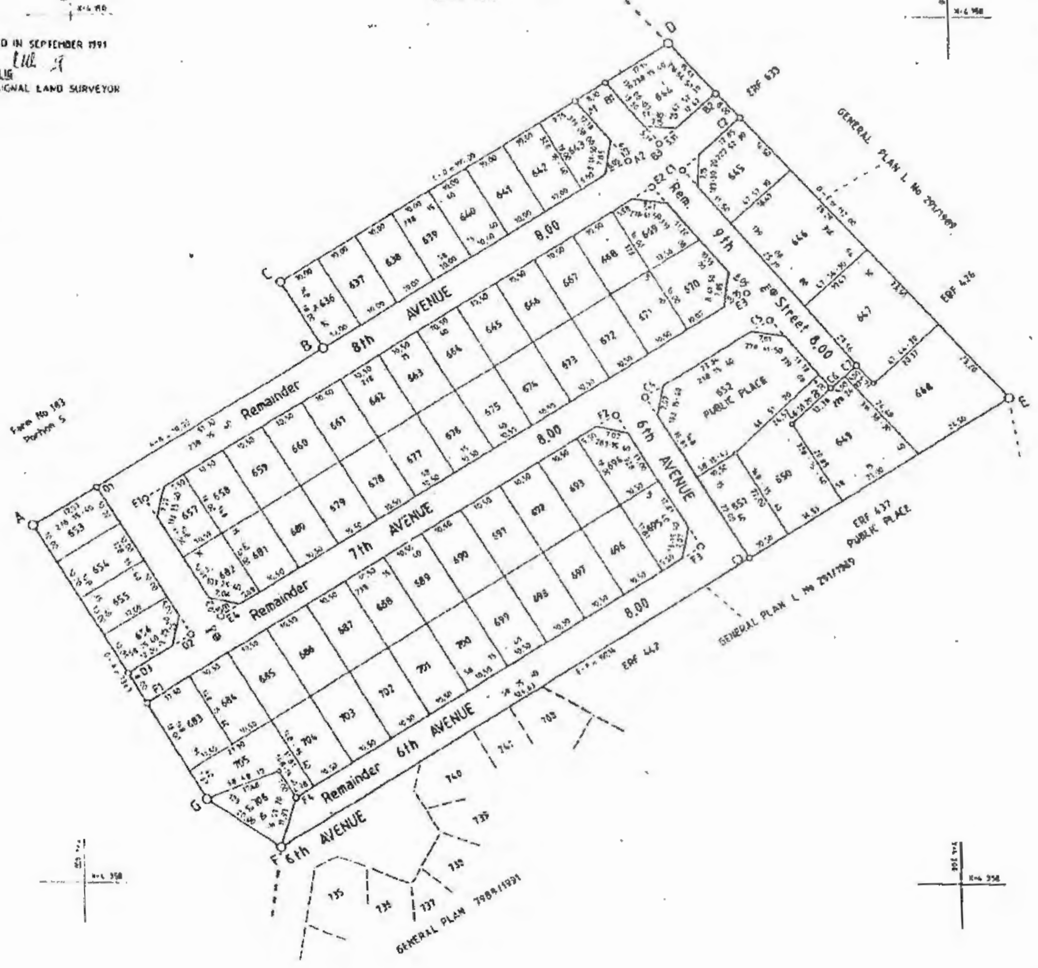
REFERENCE MARKS
OFFICIAL VIDE OFFICIAL
GAZETTE No 6768
de 1997-05-08

AREAS		AREAS	
ERF NUMBER	SQUARE METRES	ERF NUMBER	SQUARE METRES
636	180	672	162
637	180	673	168
638	1[illegible]	674	168
639	135	675	165
640	185	676	148
641	160	677	168
642	180	678	168
643	186	679	168
644	200	680	168
645	257	681	168
646	602	682	158
647	444	683	206
648	[illegible]	684	[illegible]
649	420	685	227
650	399	686	189
651	[illegible]	687	[illegible]
PP 652	473	688	167
653	170	689	185
654	170	690	184
655	170	691	159
656	257	692	189
657	258	693	189
658	180	694	176
659	16[illegible]	695	176
660	608	696	167
661	168	697	187
662	180	698	[illegible]
663	160	699	187
664	1[illegible]0	700	181
665	1[illegible]8	701	181
666	1[illegible]0	702	181
667	158	703	181
668	168	704	187
669	185	705	243
670	239	706	176
671	1[illegible]0		

BEACON DESCRIPTIONS
A B C D F G — 20mm iron peg
All others — 12mm iron peg
RM1, RM2 — Standard Town Survey Mark

NOTE
ALL SPLAYS DISTANCES ARE 5,00m
UNLESS OTHERWISE STATED

SURVEYED IN SEPTEMBER 1991
BY ME
D.S. HELLIG
PROFESSIONAL LAND SURVEYOR



S.G FILE No. Kaya Mandi 687
S.G S.R.E No. E 2569/PL
COMP BHSZ-11 (M3168)

C

ANNEXURE C

ENVIRONMENTAL DUE DILIGENCE

ENVIRONMENTAL DUE DILIGENCE TO INFORM THE PROPOSED UPGRADING OF KAYAMANDI CBD, STELLENBOSCH MUNICIPALITY, WESTERN CAPE

Submitted To:

JUBILIE PROJECT MANAGERS

JUBELIE

Prepared For

STELLENBOSCH MUNICIPALITY

This Report Prepared by:

Guillaume Nel Environmental Consultants
P.O. Box 2632
Paarl, 7620
Tel: 021 870 1874
Fax: 021 870 1873
Cell: 072 1571 321

E-Mail: guillaume@gnec.co.za

Guillaume Nel
environmental consultants

12 June 2017

45 Fabriek Street
Paarl

P.O. Box 2632 Paarl 7620

Tel: 021 870 1874

Cell: 072 1571 321

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

DEA&DP		Department of Environmental Affairs and Development
DWS	-	Department of Water and Sanitation
EIA	-	Environmental Impact Assessment
EAP	-	Environmental Assessment Practitioner
EMP	-	Environmental Management Plan
HIA	-	Heritage Impact Assessment
HWC	-	Heritage Western Cape
I&APs	-	Interested and Affected Parties
NEMA	-	National Environmental Management Act, 1998 (Act No. 107)
NHRA	-	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
PP	-	Public Participation
GNEC	-	Guillaume Nel Environmental Consultants

45 Fabriek Street
Paarl

P.O. Box 2632 Paarl 7620

Tel: 021 870 1874

Cell: 072 1571 321

ENVIRONMENTAL DUE DILIGENCE FOR THE PROPOSED UPGRADING OF THE KAYAMANDI TOWN CENTRE, STELLENBOSCH MUNICIPAL AREA

This due diligence will focus on the proposed upgrading of the Kayamandi Town Centre area within the Stellenbosch Municipality.

The following zones within Kayamandi were assessed in this report and is discussed below.

Table 1: PROPOSED SITES ASSESSED

Site Name	Location	Size
Kayamandi Town Centre	Directly west of the main entrance to Kayamandi, off the R304.	± 11 Ha
Zone I	Directly West of Kayamandi Town Centre	± 2 Ha
Small section in Zone M	Located south west of Zone I and north west of Kayamandi Town Centre.	± 0.5 Ha

The above mentioned zones will be assessed as one whole area.

The aim of this Due Diligence is to assess the environmental constraints and viability of redeveloping the proposed site, as well as assess the environmental law related, statutory processes required, in order to ensure lawful commencement of construction activities on the mentioned sites.

The proposed developments and the need for possible assessments was screened by GNEC in terms of the following legislation:

- Environmental Impact Assessment Regulations (GN R. No. 324, GN R. No. 325 , GN R. No. 326 and GN R. No. 327 [7 April 2017]) which replaced the previous regulations (GN R. No. 543, GN R. No. 544 , GN R. No. 545 and GN R. No. 546 [18 June 2010]) under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), which replaced the previous regulations (GN R. No. 385 and R. No. 386 [21 April 2006]) on the 2nd of August 2010. National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (Two Possible Process can be followed depending on the activities triggered. These two processes (Basic Assessment and Full EIA) are explained in Figures 1 and 2 below;
- National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
- National Veld and Forest Fire Act, 101 (Act No. 101 of 1998)
- National Water Act, 1998 (Act No. 36 of 1998)
- Mountain Catchment Areas Act, 1970 (Act No. 63 of 1970)
- Protected species – Provincial Ordinances
- National Heritage Resources Act, 1999 (Act No. 25 of 1999)
- Stellenbosch Municipality Integrated Development Plan 2017 - 2022

It should be noted that the NEMA allows for two (2) different EIA processes.

These processes are discussed below and the process flow for these assessments are indicated in FIGURE 1 and FIGURE 2 below.

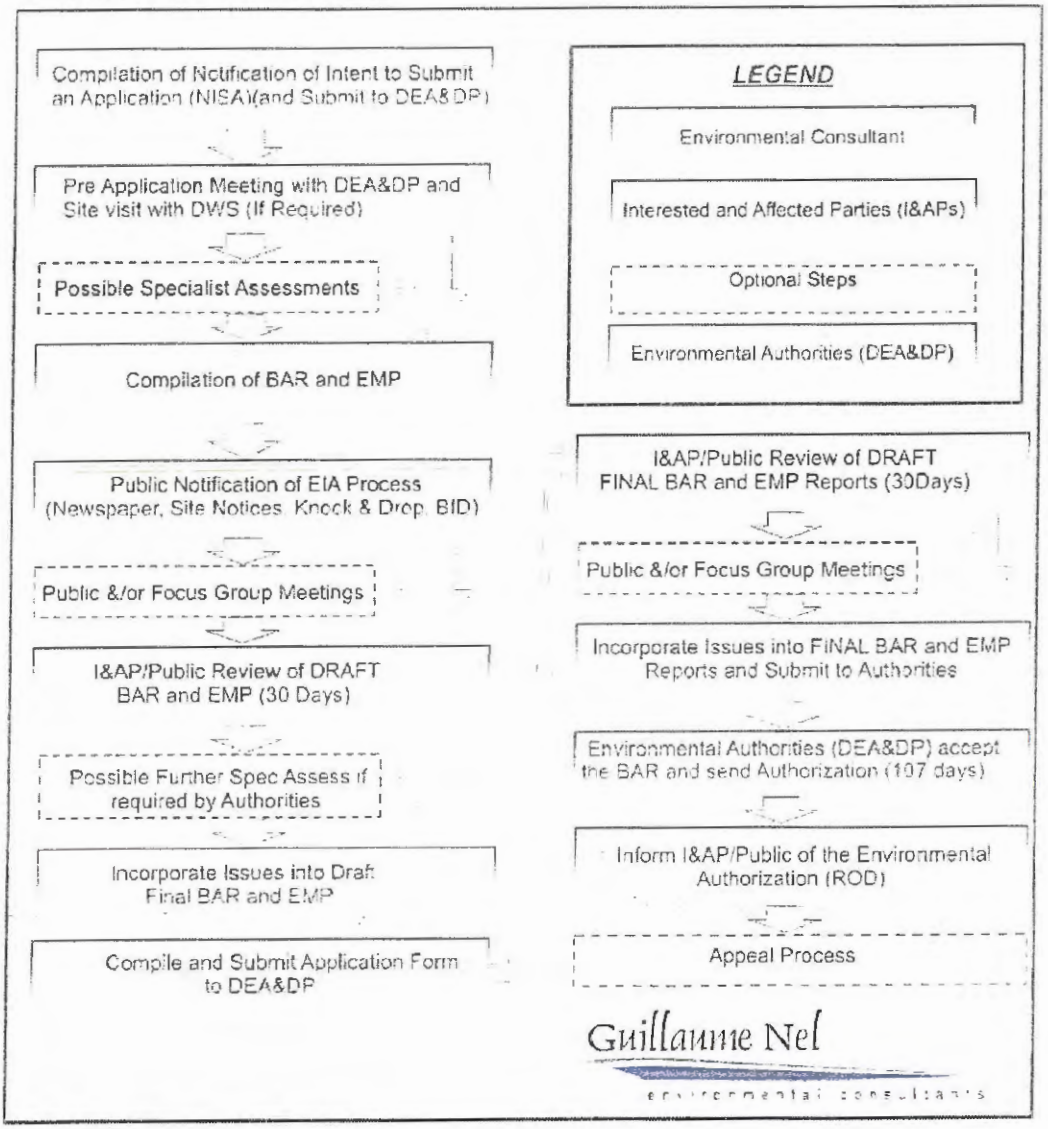


FIGURE 1: THE BASIC ASSESSMENT PROCESS

This process will have to be followed if activities in terms of the Environmental Impact Assessment Regulations GN R. No. 327 and GN R. No. 324 under NEMA are triggered by a proposed development.

The time period for these assessments can be between 6 and 9 months (depending on specialist assessments, the availability of bulk services for the proposed development, possible public and/or December holidays during the process as well as possible delays due to review periods of the Reports by the authorities.

45 Fabriek Street
Paarl

P.O. Box 2632 Paarl 7620

Tel: 021 870 1874

Cell: 072 1571 321

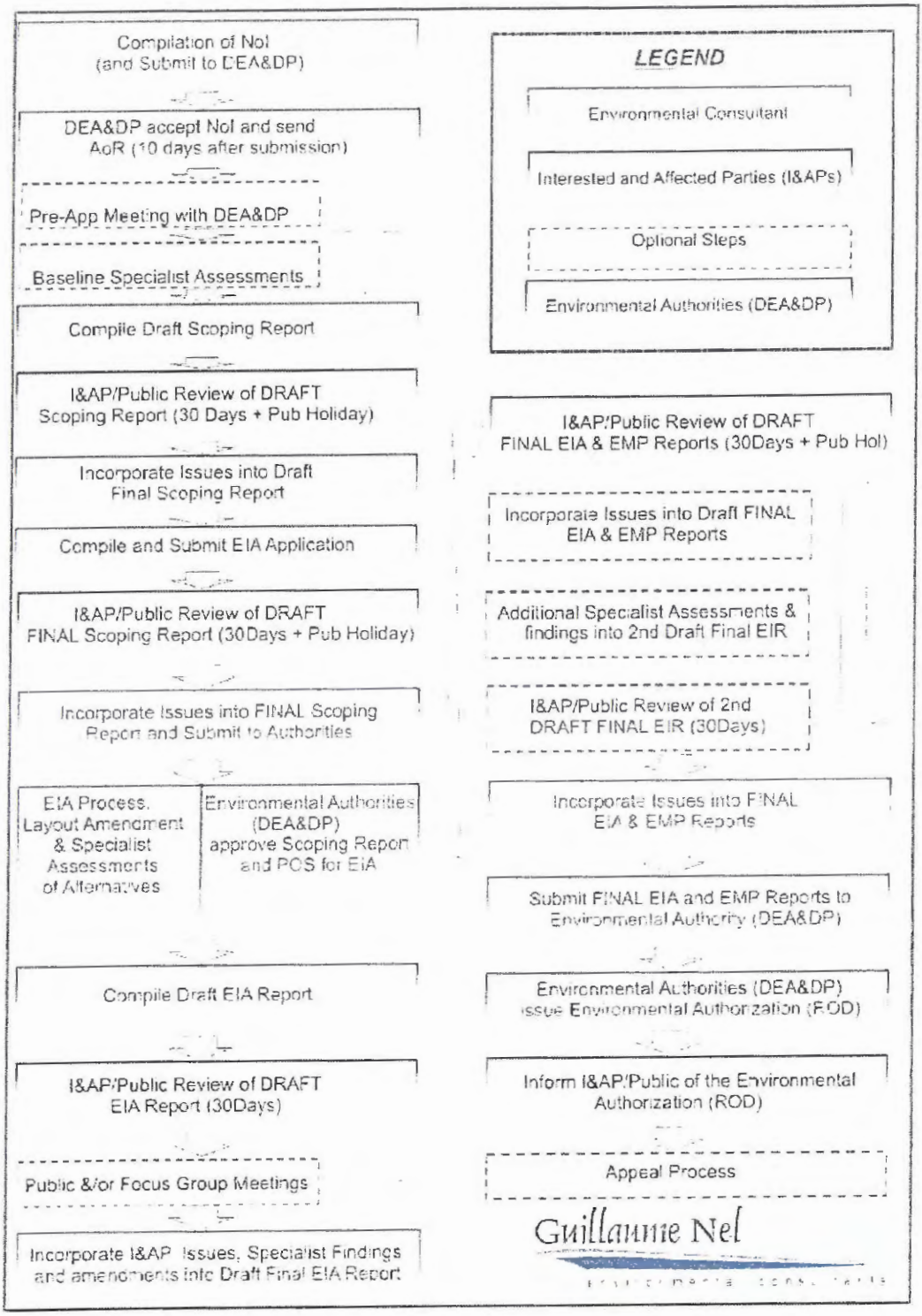


FIGURE 2: THE FULL EIA PROCESS

45 Fabriek Street
Paarl

P.O. Box 2632 Paarl 7620

Tel: 021 870 1874

Cell: 072 1571 321

This process will have to be followed should activities in terms of the Environmental Impact Assessment Regulations GN R. No. 325 under NEMA be triggered

The time period for these assessments can be between 12 and 16 months (depending on specialist assessments, the availability of bulk services for the proposed development, possible public and/or December holidays during the process as well as possible delays due to review periods of the Reports by the authorities.

45 Fabriek Street
Paarl

P.O. Box 2632 Paarl 7620

Tel: 021 870 1874

Cell: 072 1571 321

ASSESSMENT OF THE PROPOSED DEVELOPMENT AREA

1. ENVIRONMENTAL ASSESSMENT OF THE SITE

1.1 Location

The Kayamandi Town Centre is located west of the R304 existing Stellenbosch towards the N1. Entering Kayamandi, the town center is the first area visible after the roundabout. It stretches approximately 432m in diameter upwards towards the Papegaaiberg to the West of Stellenbosch and boasts beautiful views over the town. Zone I, which is located further west but directly adjacent to the town center, is an elongated portion of land and extends approximately 306m in a north westerly direction along the Papegaaiberg. Zone M is located along 6th avenue. The portion of Zone M investigated in this due diligence report only encompass one row of houses.

Please refer to Figure 1 below for a visual representation of the location of the study area in proximity to the larger Stellenbosch.

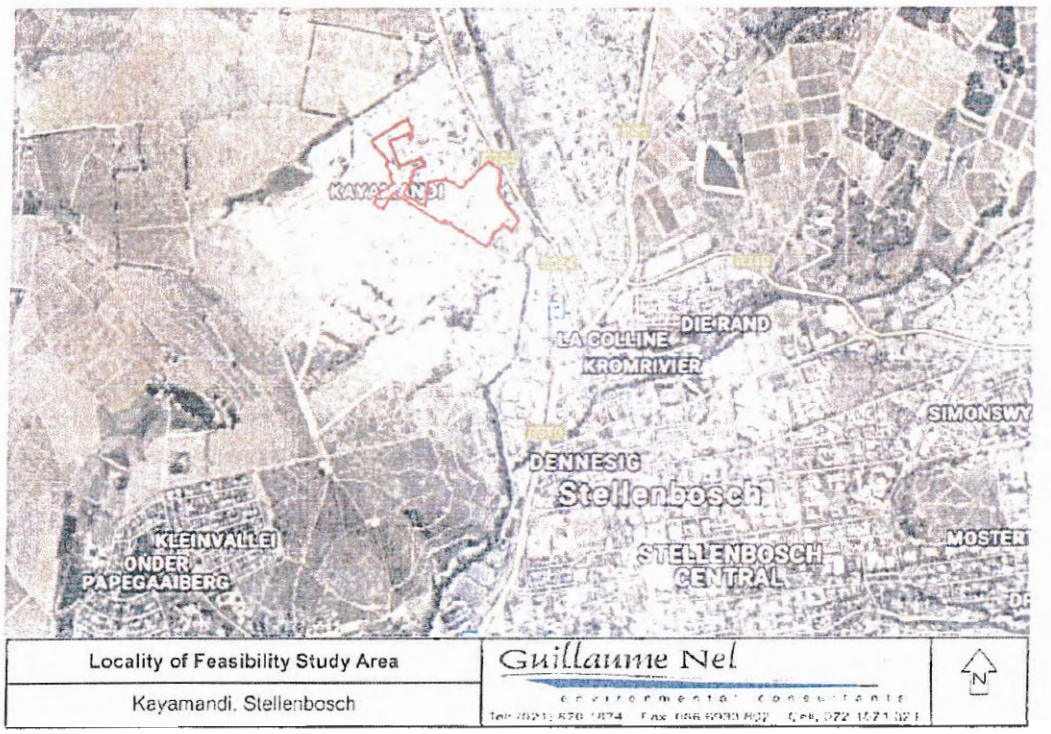


FIGURE 3: LOCATION OF THE EXISTING KAYAMANDI TOWN CENTRE INCLUSIVE OF ZONE I AND A PORTION OF ZONE M, STELLENBOSCH.

1.2 Topography

The site can be described as steep, sloping from north west (because of Papegaaiberg) to the south east towards the R304 and Plankeburg River.

Pease refer to Figure 4 below for a visual simulation of the terrain on which Kayamandi is situated

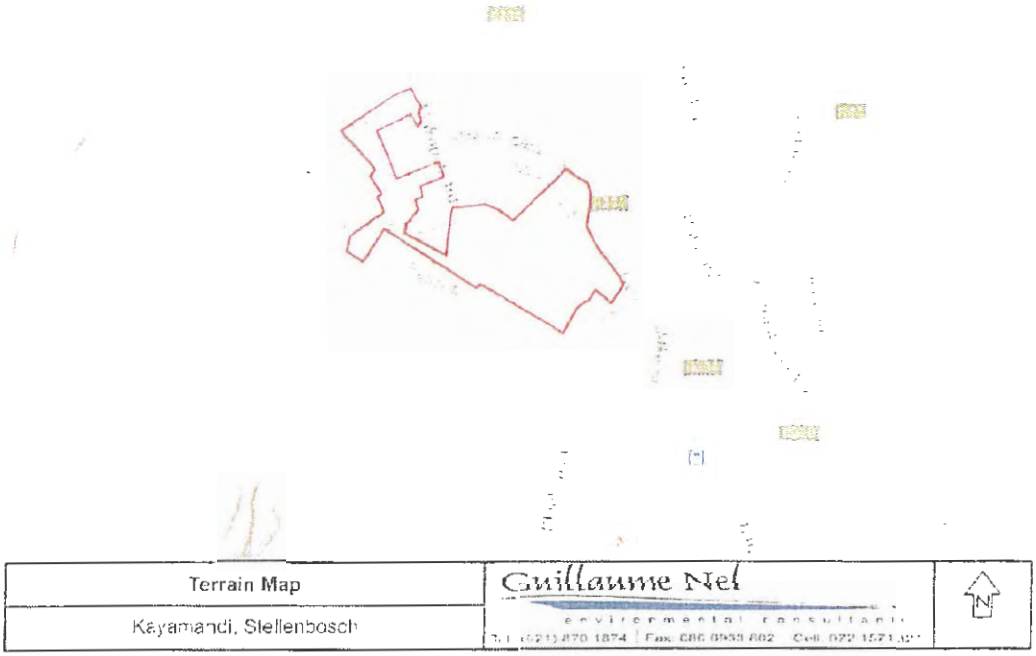


FIGURE 4: KAYAMANDI TOWN CENTER TOPOGRAPHOCAL MAP

1.3 *Underlying Geology*

The study area stretches over three dominant geological categories. The Town Centre section is dominated by the Cape Granite Suite (Db50). This suite occasionally contains greywacke, phyllite and quartzitic sandstone from the Tygerberg Formation within the Malmesbury Group. This geological group consists of alluvium and surficial cover formed in situ on Malmesbury rocks as well as granite and deposits of weathering products of granite. Soils covering this geological type's prismacutanic and or pedocutanic horizons are dominant and is not red in colour.

The largest portion of Zone I is covered mainly by granite and deposits of the weathering products of granite from the Kuils River-Helderberg Pluton (Ba47). The area also contains greywacke, phyllite and quartzitic sandstone from the Tygerberg Formation within the Malmesbury Group However the soil here tends to be more red.

Finally, the most southern portion of the study area contains a small section (Ia21) covered in deep deposits of alluvium and terrace gravel, which is associated with the Plankenbrug River.

45 Fabriek Street
Paarl

P.O. Box 2632 Paarl 7620

Tel: 021 870 1874

Cell: 072 1571 321

Please refer to Figure 5 below for a visual representation of the geological distinctions that can be made on site.

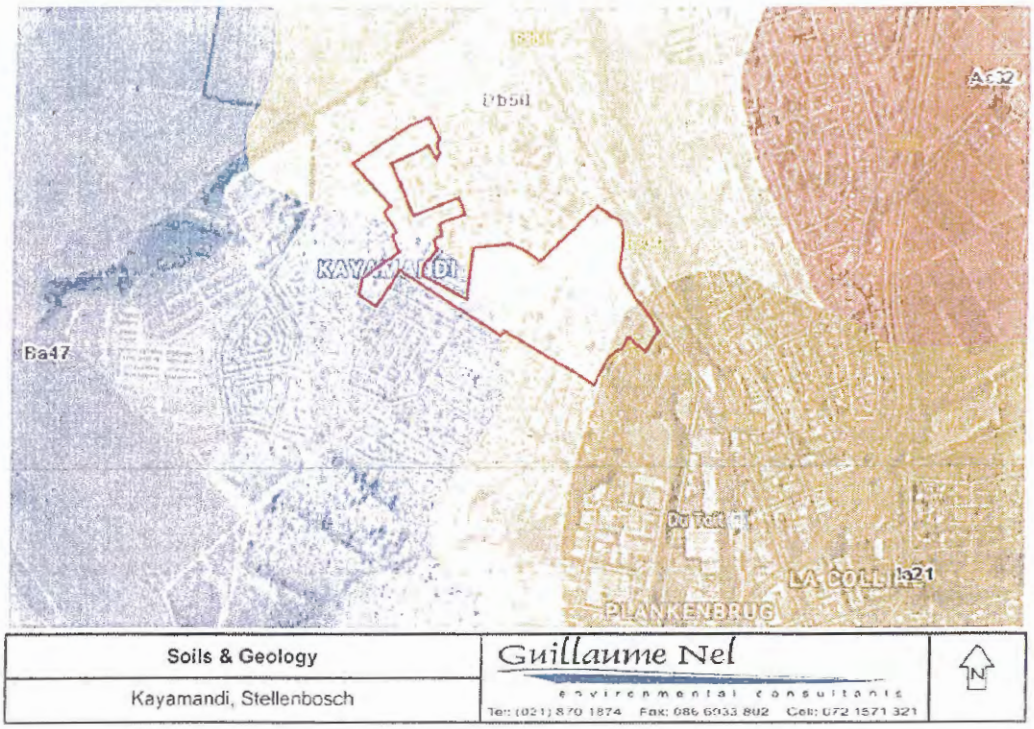


FIGURE 5: KAYAMANDI TOWN CENTRE ENPAT MAP

1.4 *Conservation*

The study area contains no environmental conservation areas or critical biodiversity areas of concern. The entire site has been developed and if there were any sensitive ecological areas in the past, none have been retained or conserved here.

1.5 *Water Resources*

The study area does not contain any natural water resources. The Plankenbrug River flows along the R304 to the east of the site and a farm dam is located to the west of the study area on the Papegaaiberg koppie, however the dam is separated from the study area by approximately 450m of already developed residential area and does therefore not have an impact.

Please refer to Figure 6 below for a visual representation of water resources in the study area's vicinity.

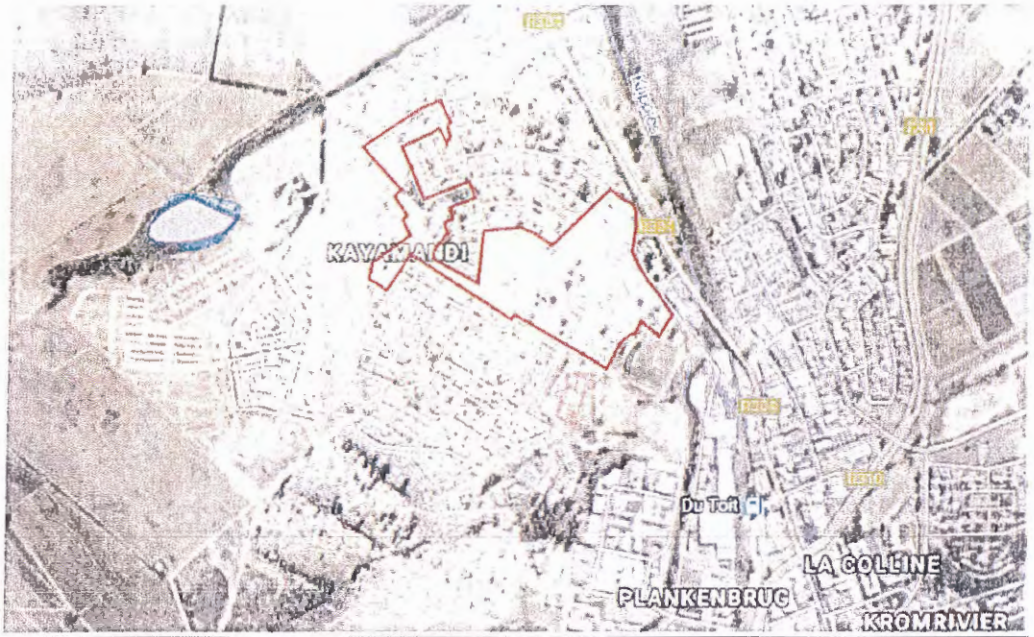


FIGURE 6: MAPPED WATER RESOURCES ADJACENT TO KAYAMANDI, STELLENBOSCH

1.6 Conclusion

The proposed area to be redeveloped does not pose any environmental constraints as the natural vegetation has completely been removed and no natural water resources are located on site or within the parameters that require assessment by NEMA. The section below assessed whether or not a NEMA process is required for the redevelopment of the Kayamandi Town Centre and associated zones.

2 EIA REGULATIONS

The Table below indicates whether or not this proposed study area will have to undergo an EIA Process. It further indicates whether an Environmental Authorization (EA [previously ROD]) is already in place. Should an EIA be required, the possible listed activities will be discussed in the tables below.

Table 2: EIA Process Requirements

EIA Process Required	~~YES~~	NO
If Yes above, the following process is to be followed for the proposed development	Basic Assessment	Full EIA Process
	~~N/A~~	NA
If NO - Reason for not having to undertake an EIA Process	EA (ROD) in place	No EIA Reg. Triggers
		X
Other Authorizations Required	Heritage Western Cape	Dept Water Affairs
	Yes	~~No~~

Note: The "interim urban edge" as defined in the Western Cape Provincial Spatial development Framework, 2009 (WCPSDF) has been adopted as an urban edge in terms of Listing Notice 1, 2 and 3. In terms of the WCPSDF, the interim urban edge means "the current extent of the urban development including serviced erven and erven for which rezoning approvals have been granted. Therefore, erven that were either already lawfully developed as urban development or were already rezoned or lawfully serviced prior to the DEADP approval of 2012, are regarded as being within the urban area in terms of the 2010 EIA regulations.

This proposed development site is situated inside the urban area as defined by the EIA regulations.

45 Fabriek Street
Paarl

P.O. Box 2632 Paarl 7620

Tel: 021 870 1874

Cell: 072 1571 321

Table 3: Possible Listed activities according to GN R. No 327 (Listing Notice 1)

Act	Description	Relevance to this development	Possibility of Trigger and Possible Process
9	The construction of facilities or infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water (i) with an internal diameter of 0.36 metres or more; or (ii) with a peak throughput of 120 litres per second or more, *excluding where*: a. such facilities or infrastructure are for the bulk transportation of water, sewage or storm water drainage inside a road reserve or railway line reserves; or b. where such construction will occur within an urban area	The site is situated inside the urban area and the availability of services in this area is still being investigated, however bulk water and stormwater infrastructure is available in the area. Capacity availability should be confirmed	No Trigger
10	The development and related operation of infrastructure exceeding 1000 meters in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0.36 meters or more; or (ii) with a peak throughput of 120 litres per second or more; Excluding where – (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	The site is situated inside the urban area and the availability of services in this area is still being investigated, however bulk waste water infrastructure is available in the area. Capacity availability should be confirmed	No Trigger
11	The development of facilities or infrastructure for the transmission and distribution of electricity – (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more; Excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is – (a) temporarily required to allow for maintenance of existing infrastructure; (b) 2 kilometers or shorter in length; (c) within an existing transmission line servitude; and (d) will be removed within 18 months of the commencement of development.	The proposed redevelopment will possibly require additional electricity capacity, however the infrastructure needed does not trigger this activity as no additional lines will be constructed.	No Trigger
13	The development of facilities for the off-stream storage of water, including dams and reservoirs, with a combined capacity of	The proposed development will make use of municipal water and no dams or	No Trigger

45 Fabriek Street
Paarl

P.O. Box 2632 Paarl 7620

Tel: 021 870 1874

Cell: 072 1571 321

	50 000 cubic meters or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014	reservoirs will be constructed.	
24	The development of a road – (i) for which an environmental authorization was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) with a reserve wider than 13.5 meters, or where no reserve exists where the road is wider than 8 meters; But excluding a road – (a) which is identified and included in activity 27 in Listing Notice of 2014 (b) where the entire road falls within an urban area; or (c) which is 1 kilometer or shorter.	The existing roads will be used and where needed, resurfaced. Where new roads are to be constructed, they will not trigger the parameters listed in this activity.	No Trigger
27	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for – (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	The proposed site has been used for residential and commercial purposes for many years and no natural vegetation is left on site.	No Trigger
28	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where to total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; Excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	The proposed site has been rezoned for residential and commercial use and is this activity is therefore not applicable.	No Trigger

Table 4: Possible Listed activities according to GN R. No 325 (Listing Notice 2)

Act	Description	Relevance to this development	Possibility of Trigger and Possible Process
N/A	N/A	N/A	N/A

Table 5: Possible Listed activities according to GN R. No 324 (Listing Notice 3)

Act	Description	Relevance to this development	Possibility of Trigger and Possible Process
2	The development of reservoirs excluding dams, with a capacity of more than 250 cubic meters. i. Western Cape i) A protected area identified in terms of NEMPAA, excluding conservancies; ii) In areas containing indigenous vegetation; or iii) Inside urban areas: (aa) Areas zoned for use as public space ; or (bb) Areas designated for conservation use in spatial Development Frameworks adopted by the competent authority, or zoned for a conservation purpose.	The proposed development will make use of municipal water and no dams or reservoirs will be constructed.	No Trigger
4	The development of a road wider than 4 meters with a reserve less than 13,5 meters i. Western Cape i) Areas zoned for use as public open space or equivalent zoning; ii) Areas outside urban areas; (aa) Areas containing indigenous vegetation (bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or iii) Inside urban areas; (aa) Areas zoned for conservation use; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority	The site is situated inside the urban area and will not trigger this activity as no indigenous vegetation is left on site and no additional roads meeting these criteria will be constructed.	No Trigger
12	The clearance of an area of 300 square meters or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. i. Western Cape i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii) Within critical biodiversity areas identified in bioregional plans; iii) Within the littoral active zone or 100 meters inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas,	The site is situated inside the urban area and will not trigger this activity as no indigenous vegetation or conservation areas are left on site	No Trigger

45 Fabriek Street
Paarl

P.O Box 2632 Paarl 7620

Tel: 021 870 1874

Cell: 072 1571 321

	iv) On land, where at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or v) On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.		

2.1 EIA Regulations Conclusion

Due to site being fully developed already and all original vegetation previously removed in order to live on the mountain side, no activities are triggered. Therefore no NEMA process is required for the redevelopment of this site.

3 OTHER RELEVANT LEGISLATION

3.1 National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)

The purpose of this act is to provide for the protection and conservation of ecologically viable areas representative of South Africa's Biological diversity and its natural landscapes and seascapes; for the establishment of a national register of all national, provincial and local protected areas; for the management of those areas in accordance with the national norms and standards; for intergovernmental co-operation and public consultation in matters concerning protected areas;

The proposed activities do not trigger any activities as listed in this legislation.

3.2 National Veld and Forest Fire Act, 101 (Act No. 101 of 1998)

The purpose of this act is to combat veld and forest fires throughout the republic of South Africa. Special focus on Sections:

- Formation of Fire protection associations
- Duties of fire protection associations
- Fire Danger Ratings
- Duty to prepare and maintain fire breaks
- Requirements of fire breaks
- Actions to fight Fire

The proposed activities do not trigger any activities as listed in this legislation.

3.3 National Water Act

Due to the site already being connected to the Municipal Network with no natural water resources in its close vicinity, the National Water Act, 1998 (Act No. 36 of 1998) does not need to be considered.

The National Water Act guides the management of water in South Africa as a comrnon resource. The Act aims to regulate the use of water and activities, which may impact on water resources through the categorisation of 'listed water uses' encompassing water extraction, flow attenuation within catchments as well as the potential contamination of water resources, where DWA is the administering body in this regard. The Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account amongst other factors:

(a) Meeting the basic needs of present and future generations

(b) Promoting equitable access to water

(c) Facilitating social and economic development
(f) Providing for the growing demand of water use;
(g) Protecting aquatic and associated ecosystems and their biological diversity
(h) Reducing and preventing the pollution and degradation of water resources
(j) Promoting dam safety; and
(k) Managing floods and droughts.

The proposed activities do not trigger any activities as listed in this legislation

3.4 Mountain Catchment Areas Act, 1970 (Act No. 63 of 1970)

The purpose of the Mountain Catchment Areas Act is to provide for the conservation, use, management and control of land situated in mountain catchment areas, and to provide for matters incidental thereto.

The proposed activities do not trigger any activities as listed in this legislation

3.5 Protected species – Provincial Ordinances

Provincial ordinances were developed to protect particular plant species within specific provinces. The protection of these species is enforced through permitting requirements associated with provincial lists of protected species. Permits are administered by the Provincial Departments of Environmental Affairs.

The proposed activities do not trigger any activities as listed in this legislation

3.6 National Heritage Resources Act, 1999 (Act No. 25 of 1999)

The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 ha. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

Table 6: Listed Activities according to the NHRA

CATEGORY OF DEVELOPMENT (Section 38 (1))	Triggered
1. Construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier over 300m in length	No
2. Construction of a bridge or similar structure exceeding 50 m in length	No
3. Any development or activity that will change the character of a site–	
a) exceeding 5 000 m² in extent	No
b) involving three or more existing erven or subdivisions thereof	Yes
c) involving three or more erven or divisions thereof which have been consolidated within the past five years	No
4. Rezoning of a site exceeding 10 000 m²	No

The Kayamandi CBD is located within an area scattered with tall pine trees. Historical photographs were obtained to determine the age of the trees on site. The photo below was taken in 1953 and shows the presence of the pine trees. This means that these trees have historical significance and should be retained in the re-development of the site. A Notice of Intent to Develop was submitted

to Heritage Western Cape to notify the authority of the possible re-development of the site and to obtain their formal comment.

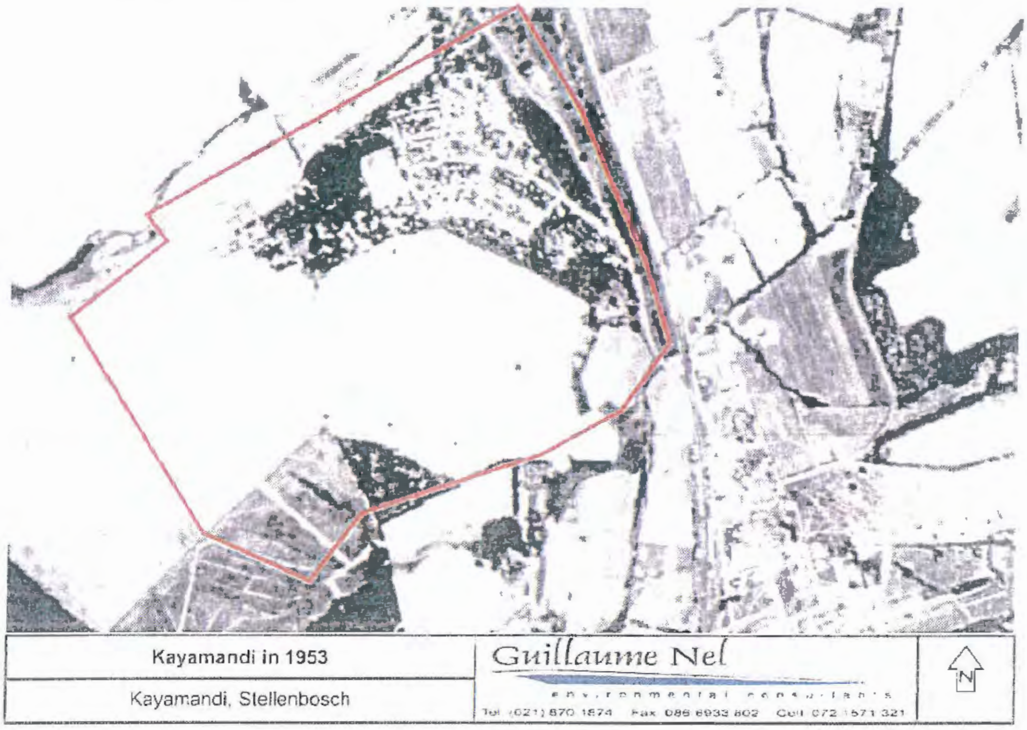


FIGURE 7: THE IMAGE ABOVE SHOWS THE LOCATION OF THE PINE TREES ALREADY PRESENT IN 1953, THEREFORE CONFIRMING THE HISTORICAL VALUE OF THESE TREES.

Authorisation from Heritage Western Cape (HWC) should be applied for [illegible] involved in the redevelopment of the area

3.7 Possible Other Constraints

NA

3.8 Possible Specialist Assessments Required during the EIA process

- Heritage Impact Assessment
- Visual Impact Assessment

4 CONCLUSION

The proposed redevelopment of the Kayamandi CBD, Zone I and a portion of Zone M does not trigger any NEMA activities due to the fact that the entire area has already been developed and disturbed. It is possible that a Heritage Impact Assessment and Visual Impact Assessment will be required due to the possible changing of the character of the site covering more than 3 erven. A possible outcome of the HIA could be the need for a demolition permit of buildings of heritage related conservation concern. Furthermore, the age of the large stone pine trees should be investigated as an application for their removal, if planed, should be submitted to Heritage Western Cape.

ANNEXURE D

HERITAGE WESTERN CAPE ROD

iLifa leMveli
Erfenis
Heritage

[illegible]
Our Ref: HM/ STELLENBOSCH MUNICIPALITY KAYAMNANDI CBD
Case No: 17061204ZK0613E
Enquiries: [illegible]
E-mail: [illegible]
Tel: 021 483 9685
Date: 11 July 2017

Feziwe Hgqubo
Plein Street and Ryneveld Street
2nd floor ABSA Building
Stellenbosch Municipality
feziwe@stellenbosch.org

RESPONSE TO NOTIFICATION OF INTENT TO DEVELOP: FINAL In terms of Section 38(2) of the National Heritage Resources Act (Act 25 of 1999) and the Western Cape Provincial Gazette 6061, Notice 298 of 2003

NOTIFICATION OF INTENT TO DEVELOP: PROPOSED REDEVELOPMENT OF KAYAMNANDI CBD MEASURING APPROXIMATELY 15 Ha. TO PROVIDE FULLY SERVICED FORMAL HOUSING STRUCTURES TO CURRENT RESIDENTS, SUBMITTED IN TERMS OF SECTION 38(1) OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)

CASE NUMBER: 17061204ZK0613E

The matter above has reference.

Heritage Western Cape is in receipt of your application for the above matter received on 13 June 2017. This matter was discussed at the Heritage Officers meeting held on 30 June 2017.

You are hereby notified that, since there is no reason to believe that the proposed redevelopment of Kayamnandi CBD measuring approximately 15 ha. to provide fully serviced formal housing structures to current residents details of application 17061204ZK0613E <u>will not impact</u> on heritage resources, and no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.

However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately and Heritage Western Cape must be notified without delay.

This letter does not exonerate the applicant from obtaining any necessary approval from any other applicable statutory authority.

HWC reserves the right to request additional information as required.

Should you have any further queries, please contact the official above and quote the case number.

Yours faithfully

....
Mr. Mxolisi Dlamuka
Chief Executive Officer, Heritage Western Cape

ANNEXURE E

ENGINEERING SERVICES REPORT

Kayamandi Town Centre

Interim Engineering Services and Stormwater Management Report:

June 2017

TYGERBERG (PTY) LTD

iCE Tygerberg (Pty) Ltd
Suite 209 Level 2
Tyger Lake Building
Tyger Falls
BELLVILLE 7530

Tel No: +27 (0) 21 914 2833
Fax No: +27 (0) 21 914 0916
Contact Person: Malcolm Cerfontеyn
Email:

Kayamandi Town Centre

Engineering Services and Stormwater Management Report

1. Introduction

This report entails the preliminary assessment of existing services for the proposed Kayamandi Town Centre project. The size and scale of the proposed developments as received from the town planner were used to calculate the services demands of the proposed development.

2. Proposed Development

The proposed development is located as shown in the figure below:

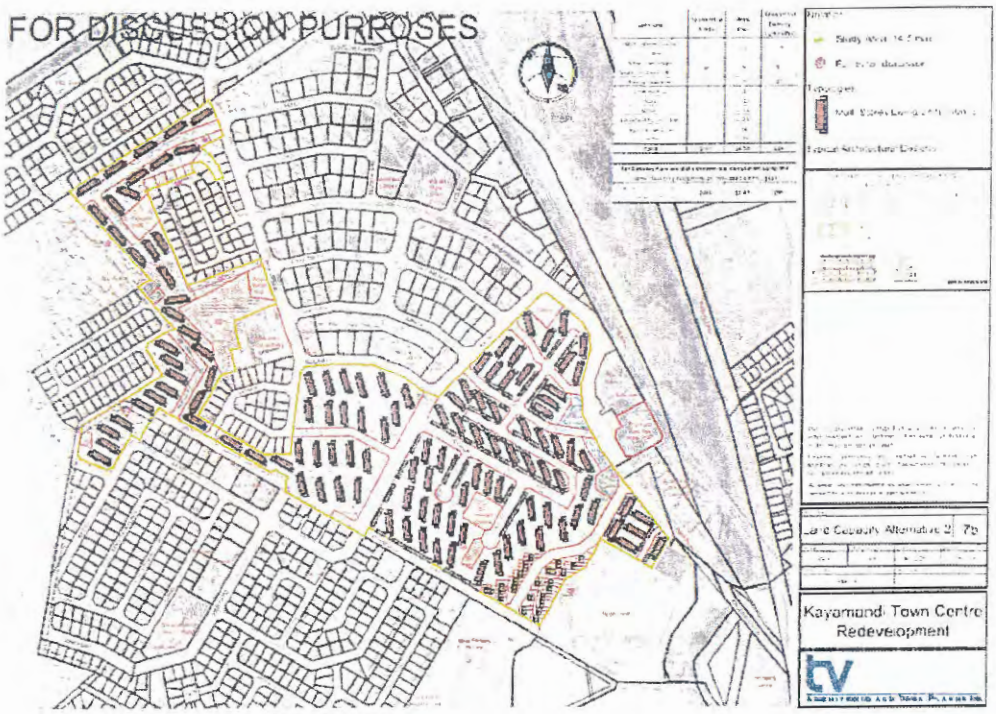


Figure 1: Location of Study Area

The study area is located north of Stellenbosch, in Kayamandi and close to the R304 road.

2.1 Development Proposals

The proposed development involves the redevelopment of the town centre of Kayamandi. Whilst it is foreseen that the redevelopment will involve mainly the provision of residential opportunities, some small commercial opportunities may also be provided. For this draft report the following development profile was used as is shown in the table below:

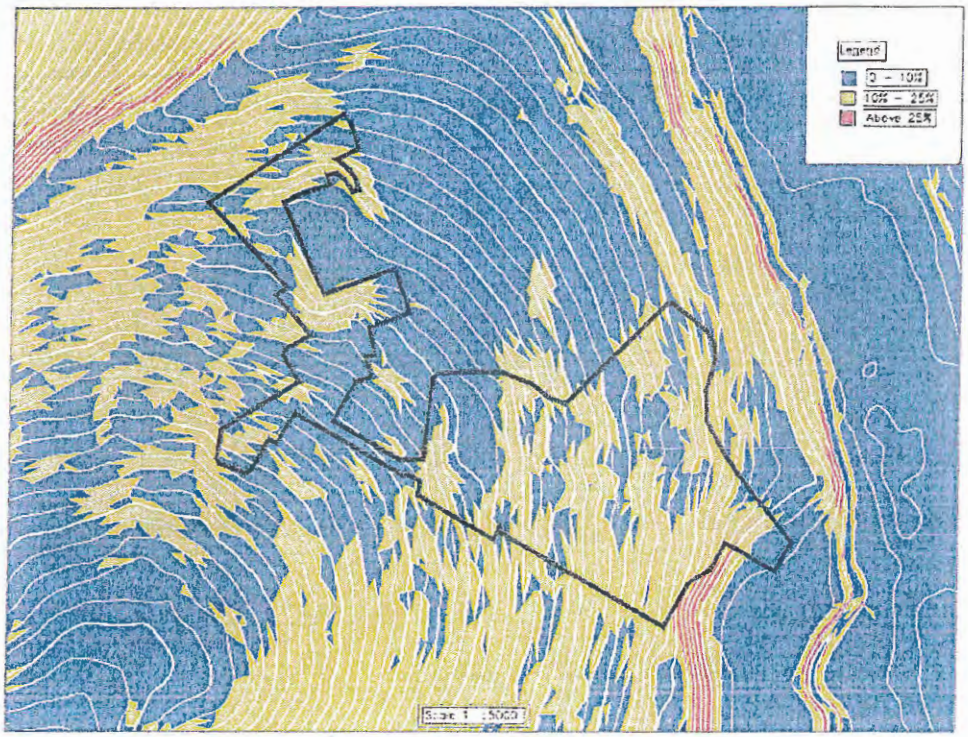
Land Use	Residential Units	Area (ha)	Residential Density (Units/ha)
Multi Storey Living Units ($40m^2$)	1612	12.47	129
Semi-Detached Walk Up Units ($43m^2$)	48	0.58	82
Single Dwelling	9	0.22	41
Commercial		0.16	
Church		0.11	
School		0.59	
Community Facilities		0.24	
Regional Services		0.06	
Creche		0.15	
Total	**1669**	**14.58**	**114**

Table 1 Proposed Development Profile

3. Topography and Soil Conditions

The site is characterized by a hilly topography with slopes varying from mild to steep as is shown on the contour drawing below:

The figure below shows a slope diagram which indicates that much of the study area have slopes more than 10%. The areas with slopes above 25% (1 in 4) fall outside the study area.



The site is underlain by weathered shales of the Malmesbury Group. The weathering of the shales will probably vary in depth across the whole site. Also varying in depths will be the topsoils and some occurrence of laterite may be present over the site.

Generally the geotechnical conditions can be described as normal for this area and no extraordinary problems are expected. A comprehensive geotechnical study will have to be undertaken to confirm this.

4. Water Supply

4.1 Assessment of Available Water Supply Services

The existing water network as obtained from the municipality is shown in the enclosed drawing.

The figure below shows the 2011 water supply masterplanning layout

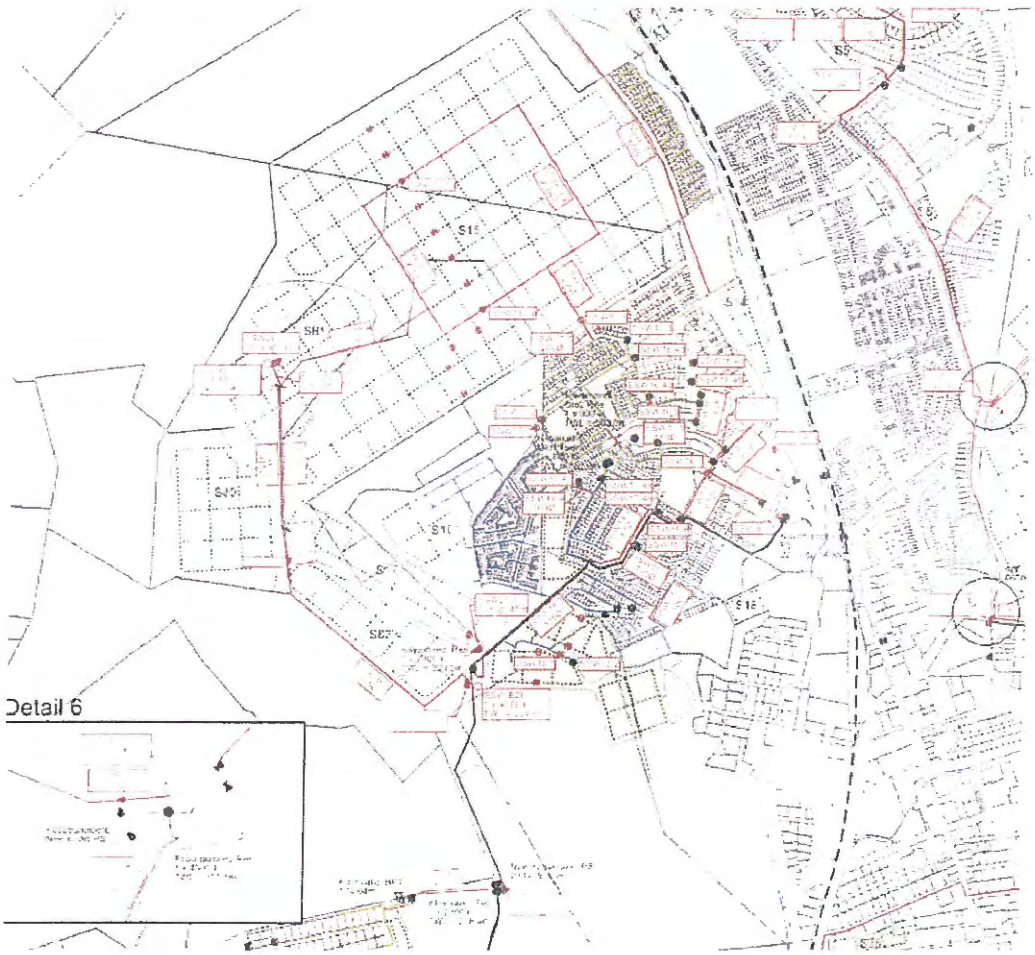


Figure 2 : 2011 Masterplan

The existing water supply to this area can be described as follows:

1. A 450 mm Dia gravity water supply main from the Idas Valley dams to the Papegaaiberg reservoir;

2. A 355 mm pumped rising main from Papegaaiberg reservoir to the Kleinvallei reservoir (TWL 218.4m);
3. A pumped rising main from the Kleinvallei reservoir to the Kayamandi reservoir (2000 kl; TWL=224.3).

The development area falls within the supply area of the Kayamandi reservoir, which have been earmarked to be augmented with a new reservoir of 2000 kl.

4.2 Water Demand

The following water-supply demand has been determined and is summarized per portion in the following table:

			Water Supply	
Housing Typologies	Percentage	QUANTITY	AADD	Peak Demand (Zone PF=4.5)
			Ml/Day	l/s
BNG	20%	1612	0.7	37.8
BNG+	22.70%	57	0.0	1.3
GAP	32%	0	0.0	0.0
GAP+	25.10%	0	0.0	0.0
Subtotal		**1669**	**0.8**	**39.1**
SCHOOLS		200	0.024	1.3
COMMERCIAL & OTHERS		5700	0.0228	1.2
Total			**0.8**	**41.6**

Table 2 Water-Supply Demand

4.3 Proposed Bulk Water Supply System

The proposed bulk water system should provide sufficient water storage for 48 hrs and operating water pressures between 90m and 30m to all the users. Within limits the pressure in excess of 90m can be controlled with a pressure-reducing valve and pressure less than 30m can be augmented with a booster pump.

A total reservoir storage (48 hrs) of approximately 1.6 Ml is required for the total development. The 2011 masterplan proposes that the existing Kayamandi Reservoir be augmented by an additional 2000 kl reservoir.

5. Sewerage

5.1 Existing Sewerage System and proposed upgrades

The existing sewerage system entails a bulk sewer on the western side side of the Plankenbrug River and has limited capacity. Phase 1 of the main outfall sewer (from the WWTW to Oude Molen) is presently being upgraded by the municipality and phases 2 and 3, which will extend the sewer to Nietgevonden Road, are scheduled to be completed by end of 2018. The existing sewerage network as obtained from the municipality is shown in the enclosed drawing.

Similarly, the wastewater treatment works is also being upgraded from 20 Ml/day to 35 Ml/day to be completed by end 2018. This should provide additional spare capacity of 11 Ml/day, due to previous backlogs.

5.2 Sewage Flows

The following table shows the determined sewage flows of the proposed developments:

			Sewerage		
Housing Typologies	Percentage	QUANTITY	RATE	ADWF	PWWF
			KL/Day	Ml/Day	l/s
BNG	20%	1612	0.405	0.65	33.1
BNG+	22.70%	57	0.405	0.02	1.2
GAP	32%	0	0.9	0.00	0.0
GAP+	25.10%	0	1.08	0.00	0.0
Subtotal		**1669**		**0.68**	**34.2**
SCHOOLS		200		0.02	1.1
COMMERCIAL & OTHERS		5700		0.02	1.0
Total				**0.7**	**36.4**

Table 3 Sewage Flows

6. Stormwater

A computer stormwater model of the study area was developed in the PCSWMM software to determine the flows from the 50 year events and the corresponding attenuation requirements.

6.1 Existing stormwater network and catchment areas

A drawing showing the existing stormwater network is enclosed.

The figure below shows the computer model indicating the catchment areas and existing stormwater system superimposed on the cadastral layout of the area.

Figure 3 Topography and Catchment areas

6.2 Hydrology

The rainfall input for the computer model is defined by means of rain gauges which use the specified design storm curve and total storm rainfall to generate a time-stepped precipitation. The following data was used to generate the rainfall:

Storm type: SCS Type 1

The following data is relevant for the rainfall station:

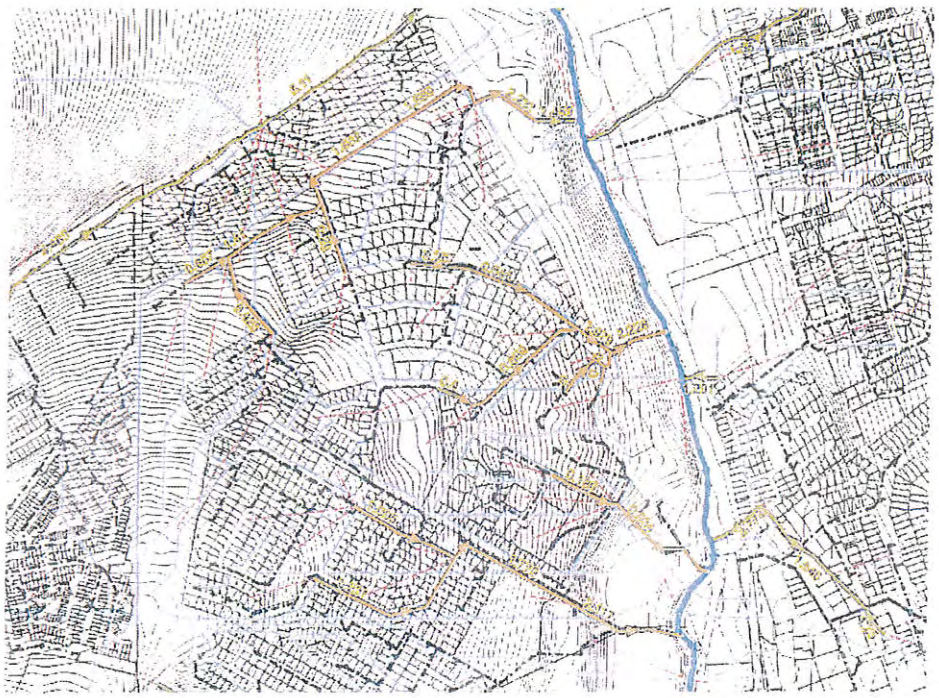
Stellenbosch (MUN)/ 21655 ; MAP = 678 mm ;

RECURRENCE PERIOD (yrs)	2	5	10	20	50
ONE DAY RAINFALL (mm)	45	59	69	79	94
24 HR RAINFALL (mm)	50	66	77	88	104

Table 4 24h Rainfall

6.3 Stormwater Modeling

A PCSWMM pre-development stormwater model is shown below based on a 50 yr storm event.



6.4 Addressing Stormwater Quality Management

Cities across the world have adopted best management practices (BMP's) with regard to stormwater runoff to mitigate the effects of pollution caused by stormwater runoff. These are often called Low Impact Development (LID) or Sustainable Urban Drainage Systems (SUDS).

The proposed development drains towards the Plankenbrug River, which feeds into the Eerste River. The Eerste River runs through many tourism friendly winery farms west and south of Stellenbosch, notably the Vlottenburg area, Spier, Faure and Croydon and then joins the Kuils River just before it discharges into False Bay. Any stormwater management should therefore also address the existing water quality problems.

The water of the Plankenbrug River is highly polluted and some of this pollution can be ascribed to:

- lack of sewerage systems to informal settlements;
- possibly also backyard dwellings which are not connected to a sewerage system; and
- blocked and dysfunctional sewerage systems.

Raw sewage contains such high levels of pollutants (bacteriological and nutrients (nitrogen and phosphorous)), that to treat this by means of stormwater BMP's to obtain a reasonably effluent quality will require long retention times and accordingly very large retention volumes. It is far more cost effective to provide a proper sewerage system and to ensure that all sewage enters the sewerage system.

Should this not be possible, very large retention ponds with permanent water levels will be required to the treat this sewage contaminated stormwater.

In designing the correct BMP for this development it is therefore assumed that all properties will be connected to the sewerage system and no backyard dwellings will be tolerated.

6.5 Stormwater Management Plan

A stormwater management plan will be provided based on the development layout which try to comply with the following criteria:

6.5.1 Criteria

To meet the attenuation requirements

The main function of the stormwater management plan is to reduce the runoff impacts to pre-development levels. The high-density layout provided indicates that attenuation of the peak flows are desirable to mitigate downstream flooding. Attenuation ponds in the form of regional ponds or on-site ponds should be investigated.

To improve the water quality

To improve the water quality of the stormwater runoff (not sewage) from the development various BMP's are normally employed:

1. Grass swales with infiltration trenches;
2. Bio retention cells;

3. Extended wet retention ponds, and

4. Permeable paving

The possible implementation of these system will be investigated.

7. Electricity Supply

It has been determined that the development will require approximately 4 MVA to provide electricity to this development. The existing networks do not have the capacity for this demand and will have to be upgraded. Discussions are presently underway with the electrical engineer's department regarding this matter.

MJ Cerfontеyn Pr Eng
ICE Tygerberg (Pty) Ltd

ENCLOSED DRAWINGS :

EXISTING WATER SUPPLY NETWORK
EXISTING SEWER NETWORK
EXISTING STORMWATER NETWORK

KAYAMANDI TOWN CENTRE- EXISTING STORMWATER NETWORK

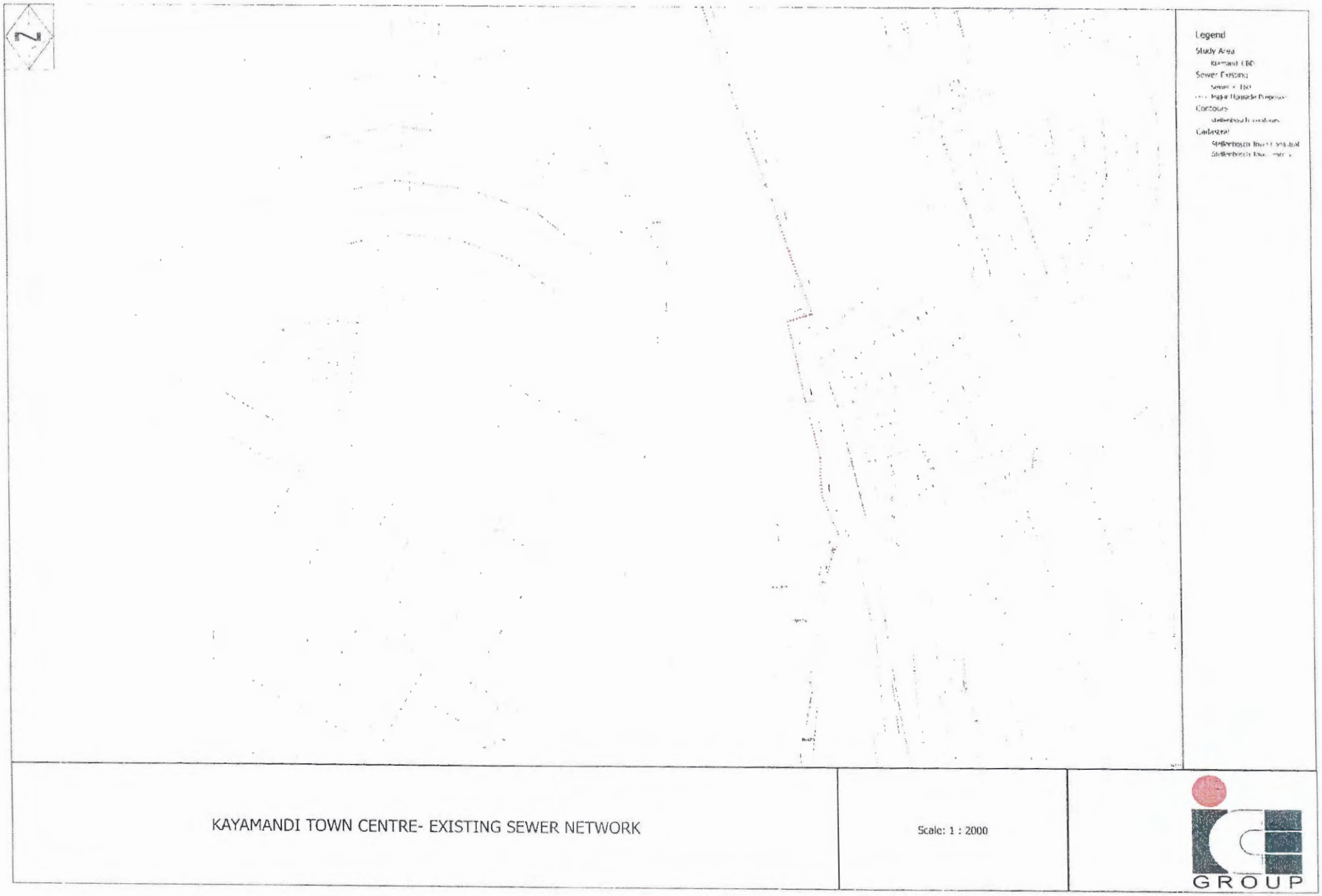
Scale: 1 : 2000

GROUP

KAYAMANDI TOWN CENTRE- EXISTING WATER NETWORK

Scale: 1 : 2000

GROUP



KAYAMANDI TOWN CENTRE- EXISTING SEWER NETWORK

Scale: 1 : 2000

GROUP

ANNEXURE F

DRAFT TRAFFIC INPUT

Contact Address:
iCE Group (Stellenbosch),
P O Box 131,
Stellenbosch, 7599

Tel No: +27 (0) 21 880 0443
Fax No: +27 (0) 21 880 0390
e-mail: piet@icegroup.co.za

GROUP (Pty) Ltd

Consulting Services
- Civil Engineering Services
- Roads
- Traffic Engineering

Contact Person: Piet van Blerk
Your Ref: Kayamandi Town Centre
Our Ref: iCE/S/1187

Date: 4 September 2017

Jubelie Projects
P.O. Box 12876
N1 CITY
7463

Attention: Mr Gerhard Nel

Sir

PROPOSED KAYAMANDI TOWN CENTRE REDEVELOPMENT: DRAFT TRAFFIC INPUT

Your request for preliminary comment on the potential traffic impact of the proposed redevelopment of the Kayamandi Town Centre, refer.

1. BACKGROUND AND LOCALITY

Kayamandi is a township situated northwest of Stellenbosch Town, bordered by the R304 (Main Road 174) to the east and the Plankenbrug Industrial Area to the south. See the ***Locality Plan*** attached.

Jubelie Projects has been appointed by Stellenbosch Municipality to appoint the necessary multi-disciplinary team of professional consultants required to conduct a feasibility study to assess the redevelopment of the town centre of Kayamandi. The intention is to formalise the residential area which will be re-inhabited by the existing residents of the area, while providing the necessary additional community facilities.

This letter is thus to provide preliminary comment on the potential traffic impact of the proposed redevelopment of the Kayamandi Town Centre.

2. PROPOSED DEVELOPMENT

The Study Area (i.e. Zones within Kayamandi) identified for redevelopment is indicated on the attached drawing: ***Study Area*** prepared by *tv3 Architects and Town Planners*. The Zones identified are Zones D, F, I, M and P. According to information approximately 2 000 households currently exist in the study area.

As previously mentioned, it is proposed to replace the existing informal structures within the Study Area. The proposal is currently as follows:

Multi Storey Living Units (40 m^2)		1 612 units
Semi-Detached Walk Up Units (43 m^2)		48 units
Single Dwelling		9 units
Commercial	0,16 ha	
Church	0,11 ha	
School	0,59 ha	
Community Facilities	0,24 ha	

Stellenbosch office:
Tel: 021 8800 443
Fax: 021 8800 390

Directors:
P.J.Van Blerk, PrEng.

iCE Group (Overberg) t/a
ICE Group (Stellenbosch)

Reg No: 2005/133238/23

Regional Services	0,06 ha	
Crèche	0,15 ha	
Total	*1,31 ha*	*1 669 units*

See the attached drawing: ***Land Capacity Alternative 2*** prepared by *tv3 Architects and Town Planners.*

As indicated in the table on the attached plan, a possibility exists to provide more than 2 000 units by increasing the number of storeys (from three storeys to five).

3. TRAFFIC

3.1 Available Traffic

Available traffic information in the area currently includes peak hour traffic counts at the intersections along the R304 (Sokuqala Street, Masitandane Street and the R44) and at the R44/George Blake Street intersection (via Plankenbrug).

As it is the intention to provide new facilities for the existing residents, it is not anticipated that peak hour traffic will increase significantly. The accompanying community facilities are also not expected to generate significant external peak hour traffic.

However, following discussions with Stellenbosch Municipality (messrs John Muller and Nigell Winter), it was requested that traffic counts be conducted at the Masitandane Street-roundabout and the George Blake Street/Rand Street intersection, as well as updated counts at the R304/Masitandane Street intersection. The said counts were conducted on Thursday, 31 August 2017 from 06h00 to 09h00 and again from 15h30 to 18h30. The peak hour volumes derived from these counts are indicated in ***Figure 1*** attached.

3.2 Trip Generation

Based on the trip generation rates as contained in the *South African Trip Generation Rates Manual* (SATGR), the 1 669 units could potentially generate 835 peak hour trips (292 in, 543 out during the AM peak hour and vice versa during the PM peak hour). As mentioned, the residential units will not be additional to the existing, a portion of the informal structures in Kayamandi will merely be formalised/replaced.

It should be noted, however, that the existing traffic within Kayamandi entering and exiting Kayamandi via the Masitandane Street-roundabout during the AM/PM peak hours, are ± 760 during the AM and PM peak hours. The trip generation as calculated above can thus be considered high.

3.3 Traffic Analyses

As previously mentioned, it was requested that counts be conducted at some intersections in the vicinity of Kayamandi. The peak hour analyses as per the Sidra Software 7.1, will be discussed hereafter.

<u>R304/Masitandane Street intersection (signalised):</u>

According to the Sidra analyses, acceptable intersection levels of service C are experienced during the AM and PM peak hours, with service levels C and above experienced on all movements.

<u>Masitandane Street/George Blake Street intersection (roundabout):</u>

According to the Sidra analyses, acceptable service levels B and above are experienced at this roundabout during the AM and PM peak hours.

It should be noted that the Sidra analyses considers the intersections in isolation. The queuing experienced on the Masitandane Street-approach to the R304 (signalised intersection), is thus not accounted for.

George Blake Street/Rand Street intersection (all-way stop-controlled):

According to the Sidra analyses, unacceptable intersection levels of service F and E are currently experienced during the AM and PM peak hours, respectively. Service level F is experienced on the western Rand Street-approach during the AM and PM peak hours, with service level E experienced on the eastern Rand Street-approach during the AM peak hour.

To address the abovementioned unacceptable service levels, it is suggested that the provision of a roundabout be considered. The said roundabout will also address traffic calming along George Blake Street.

4. GEOMETRY

The existing roads within Kayamandi are surfaced, with some gravel roads between the informal structures. As indicated on the attached ***Land Capacity Alternative 2***, the existing roads are planned to be retained. It can be anticipated that the existing condition of the said roads will be improved (e.g. resurfaced).

5. PARKING

According to the Kayamandi Scheme, the following parking requirements are applicable:

Multi Storey Living Units	1 bay per 50 m^2 floor space
Semi-Detached Walk Up Units	1 bay per 50 m^2 floor space
Single Dwelling	1 bay per unit
Commercial	1 bay per 30 m^2 floor space
Church	1 bay per 20 seats
School	1 bay per classroom
Community Facilities	1 bay per 20 seats / 1 bay per 50 m^2 floor space
Regional Services	(depends on specific use)
Crèche	1 bay per classroom

As these rates are considered relatively high, additional information was collected. The following information was obtained from a document referencing a parking survey conducted by the City of Cape Town in 2011:

Steenvilla, Survey:	0,24 bays per unit
Drommedaris, Survey:	0,28 bays per unit
Joe Slovo, Survey:	0,17 bays per unit
Kew Town, Survey:	0,14 bays per unit

The average of the surveyed rates calculates to ± 0,2 bays per unit.

Furthermore, an informal survey of existing vehicles within the study area was conducted based on aerial photos (2016). Approximately 160 parked vehicles were counted within the study area. As previously mentioned, approximately 2 000 households currently exist in the study area. This calculates to a rate of 0,08 bays per household. This rate is considerably lower than those surveyed (as listed above), which is assumed to be the result of unreliable information (aerial photo – all vehicles not necessarily on-site at the time of the photo).

Based on all of the above, it is suggested that parking to the redeveloped town centre be provided at a rate of 0,25 bays per unit.

Parking bays should be provided with dimensions in line with normal parking standards, i.e. 2,5 by 5,0 metre bays. Isle widths provided behind parking bays should be minimum 7,0 metres.

6. PUBLIC AND NON-MOTORISED TRANSPORT (NMT)

Minibus taxis are largely utilised in Kayamandi. Two informal taxi ranks currently exist, as indicated below.

Photo 1 : Existing informal taxi ranks in/around Kayamandi

With the proposed redevelopment of the Kayamandi Town Centre, public- and non-motorised transport will be addressed and linked with the existing networks in/around Stellenbosch. See the attached ***Existing Public- and Non-Motorised Transport Routes within Kayamandi***, which was compiled based on studies previously conducted by consulting companies appointed by Stellenbosch Municipality.

A formalised, but temporary, taxi rank is currently planned on the western corner of the R304/Masitandane Street intersection.

According to Stellenbosch Municipality, the existing midblock pedestrian crossing across the R304 will soon be moved. From aerial photos, it can be noted that the existing desire line between Kayamandi and Cloetesville does not align with the existing position of the midblock crossing. See the photo below.

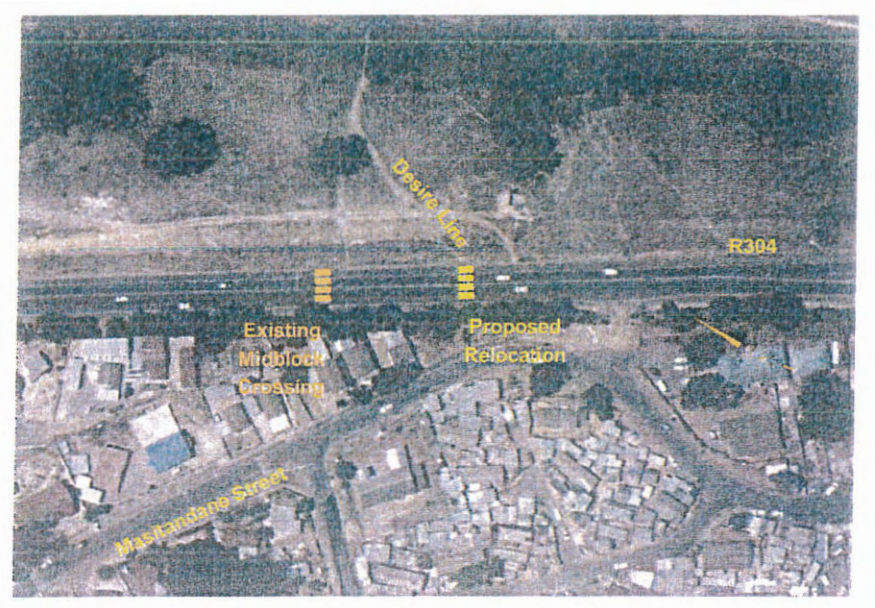


Photo 2 : Existing Midblock Crossing and Proposed Relocation

7. CONCLUSIONS AND RECOMMENDATIONS

From the above, it can be concluded that the proposed redevelopment of the Kayamandi Town Centre will include the improving/replacing of existing residential units with the provision of accompanying community facilities. As the number of dwelling units will not necessarily be increased, the traffic impact of the proposed redevelopment is not anticipated to be significant. The public- and non-motorised transport facilities will also be addressed with regard to the existing networks in/around Stellenbosch.

It is suggested that consideration be given to provide a roundabout at the George Blake Street/Rand Street intersection.

We trust that the above will be to your satisfaction and will gladly provide any additional information required on request.

Yours faithfully

Yolandi Obermeyer (B. Eng Civil)
iCE GROUP (STELLENBOSCH)

Piet van Blerk Pr. Eng
iCE GROUP (STELLENBOSCH)

Attachments

Locality Plan

Study Area (*tv3 Architects and Town Planners*)

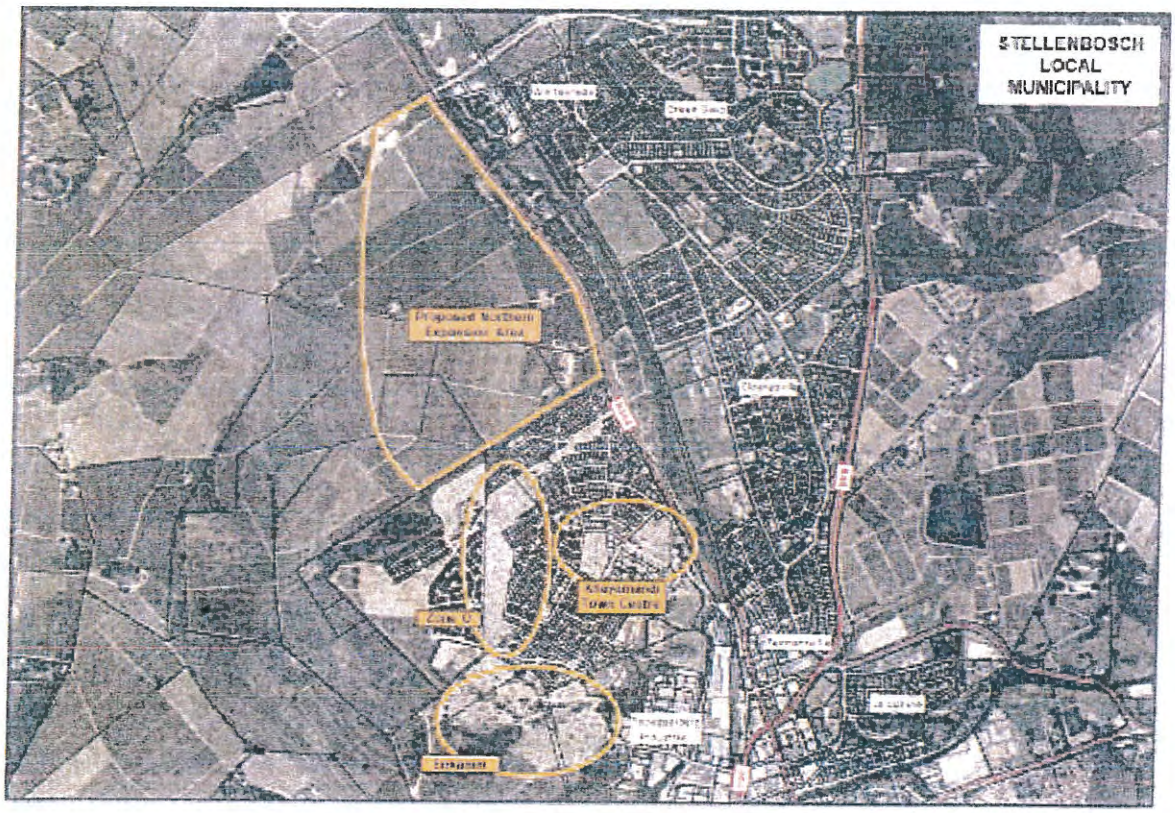
Land Capacity Alternative 2 (*tv3 Architects and Town Planners*)

Existing Public- and Non-Motorised Transport Routes within Kayamandi

ANNEXURE G

HOUSING DEMAND & RELOCATION STRATEGY

KAYAMANDI – ENKANINI HOUSING DEMAND AND RELOCATION STRATEGY



OCTOBER 2017

TABLE OF CONTENTS

KAYAMANDI/ ENKANINI HOUSING DEMAND AND RELOCATION STREATEGY

1. INTRODUCTION

- This document deals with the formalisation and relocation strategy for the informal settlements located in the broader Kayamandi and Enkanini areas in the Stellenbosch Local Municipality. As illustrated on **Figure 1** it includes the Kayamandi Town Centre, Kayamandi Zone O to the west, and the Enkanini informal settlement to the south-west.
- The Northern Expansion Area as illustrated on Figure 1 is the area earmarked to accommodate part of the relocation demand resulting from the Kayamandi Town Centre, Zone O and Enkanini and which was the subject matter of a Feasibility Study titled "Northern Extension Project Stellenbosch" dated January 2017.

2. DEMOGRAPHIC PROFILE OF INFORMAL SETTLEMENTS

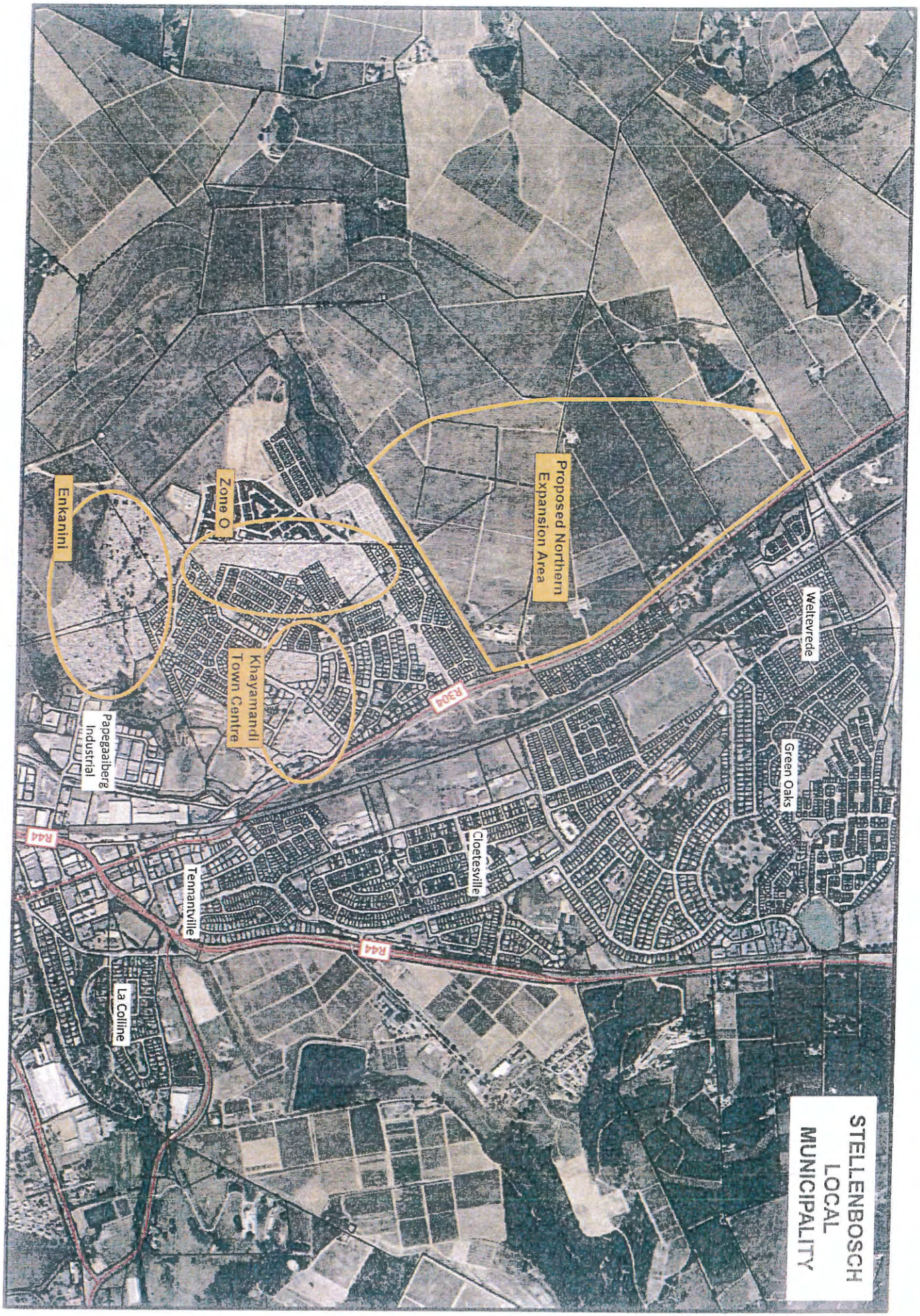
- A number of Demographic Surveys have been undertaken for various wards in Kayamandi and Enkanini during the past year. The results of these surveys were consolidated to provide a comprehensive demographic profile for the broader area.
- Some of the most salient features relevant to Kayamandi Town Centre, Zone O and Enkanini respectively are depicted in Table 1. For Kayamandi Town Centre the information is also summarised per ward zone i.e. A, J, K, L, D, F, I, M and P.

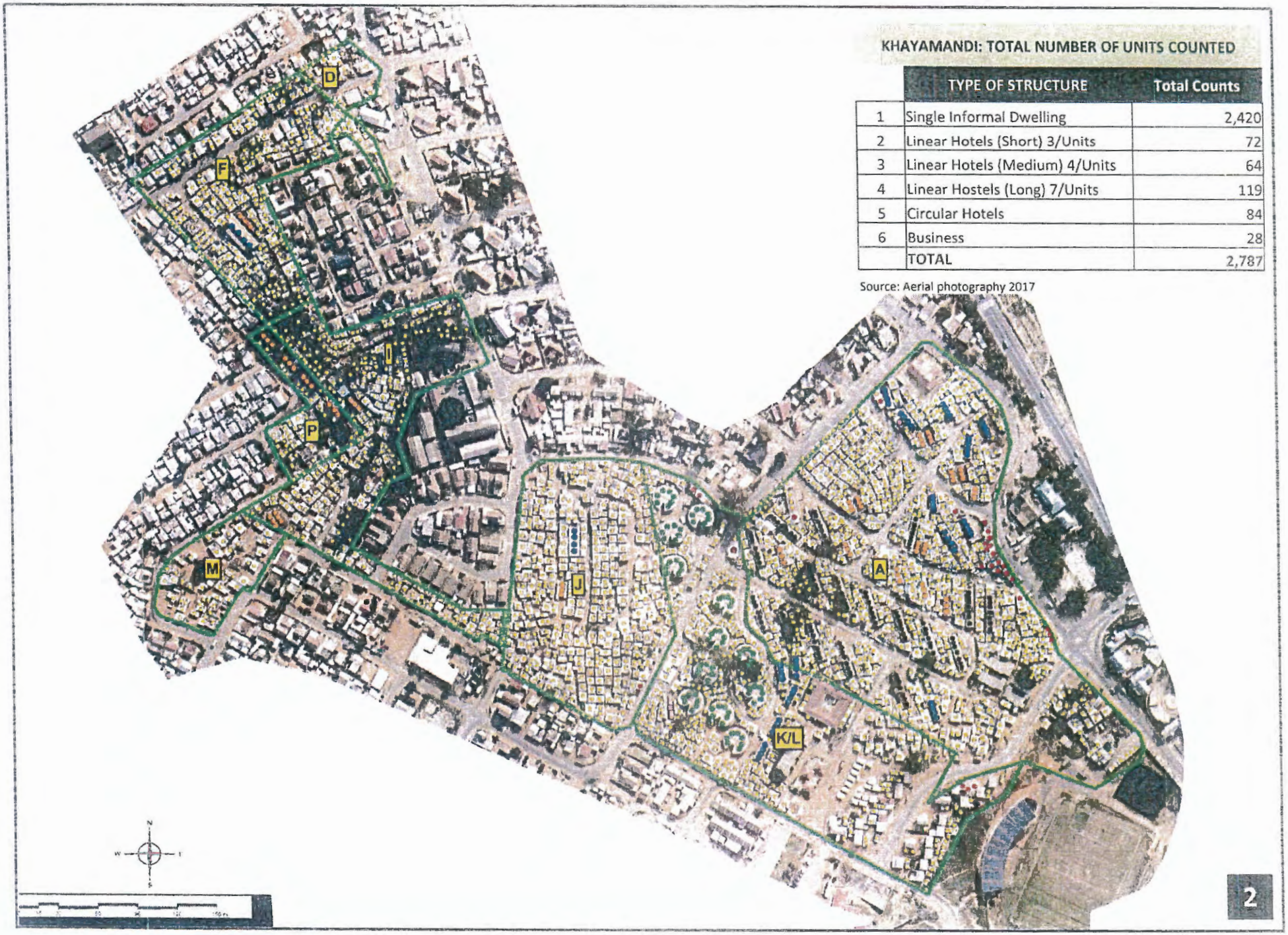
  Information for Zones A, K and L was obtained from PMM Solutions Report dated February 2017. For Zones D, F, J, K, L, M and P the information was derived from the report compiled by Umtha dated 18 April 2017. The database for Zone O was the source of information for this area, and Ikapadata provided information for Enkanini (October 2017).

  An updated structure count from 2017 aerial photography was also conducted for all zones in the Town Centre as illustrated on **Figure 2**.

The following is a summary of the most salient features identified from the demographic surveys:

- Approximately 7409 individual structures have been counted in the various areas. This includes about 2787 structures in the Town Centre, 1324 structures in Kayamandi Zone O and 3298 structures in Enkanini. It should be noted that each structure does not necessarily represent a residential unit as some are used for non-residential purposes like business, storage etc.
- The structures in the total study area occur at an average density of about 179 structures per hectare. (In Enkanini the average size per structure is approximately 14m²).
- As part of the Demographic Surveys a total of 5063 residential units have been surveyed: 1589 in Town Centre, 1061 in Zone O and 2413 in Enkanini.


STELLENBOSCH
LOCAL
MUNICIPALITY
Proposed Northern
Expansion Area
Zone O
Enkanini
Khayamandi
Town Centre
Papegaaiberg
Industrial
Weltevrede
Green Oaks
Cloetesville
Tennantville
La Colline
R304
R44
R44



KHAYAMANDI: TOTAL NUMBER OF UNITS COUNTED

	TYPE OF STRUCTURE	Total Counts
1	Single Informal Dwelling	2,420
2	Linear Hotels (Short) 3/Units	72
3	Linear Hotels (Medium) 4/Units	64
4	Linear Hostels (Long) 7/Units	119
5	Circular Hotels	84
6	Business	28
	TOTAL	2,787

Source: Aerial photography 2017

Table 1: Kayamandi-Enkanini Socio Economic Survey Profile Summary

	Aerial photography count			Survey units and Households		Household Income Profile							
	Area (ha)	Structure Count 2017	Structures / ha	Survey No. Units	Households Total	>R3 500		Single with no dependents		Potential Beneficiary		Total	
					no	no	%	no	%	no	%	no	%
TOWN CENTRE PRIMARY AREA													
Zone A	5.3	1,138	213	606	1,107	138	12.5%	547	49.4%	422	38.1%	1,107	100.0%
Zone J	2.1	409	197		409	51	12.5%	202	49.4%	156	38.1%	409	100.0%
Zone K	3.4	473	140	187	203	56	27.6%	85	41.9%	62	30.5%	203	100.0%
Zone L	0.0			240	277	61	22.0%	132	47.7%	84	30.3%	277	100.0%
Subtotal	**10.8**	**2,020**	**187**	**1,033**	**1,996**	**306**	**15.3%**	**966**	**48.4%**	**724**	**36.3%**	**1,996**	**76.6%**
												-	
TOWN CENTRE SECONDARY AREA												-	
Zone D	0.3	41	158	109	120	26	21.7%	53	44.2%	41	34.2%	120	100.0%
Zone F	1.4	295	213	184	305	78	25.6%	145	47.5%	82	26.9%	305	100.0%
Zone I	1.8	304	173	159	252	58	23.0%	109	43.3%	85	33.7%	252	100.0%
Zone M	0.5	51	98	48	50	11	22.0%	14	28.0%	25	50.0%	50	100.0%
Zone P	0.4	76	206	56	77	15	19.5%	27	35.1%	35	45.5%	77	100.0%
SubTotal	**4.3**	**767**	**179**	**556**	804	**188**	**23.4%**	**348**	**43.3%**	**268**	**33.3%**	**804**	100.0%
												-	
TOWN CENTRE (Zone A-P)	**15.1**	**2,787**	**185**	**1,589**	**2,800**	**494**	**17.6%**	**1,314**	**46.9%**	**992**	**35.4%**	**2,800**	**100.0%**
												-	
ZONE O	**8.5**	**1,324**	**156**	**1,061**	**1,061**	**348**	**32.8%**	**212**	**20.0%**	**501**	**47.2%**	**1,061**	**100.0%**
												-	
ENKANINI	**17.9**	**3,298**	**184**	**2,413**	**2,534**	188	**7.4%**	**1,067**	**42.1%**	**1,280**	**50.5%**	**2,534**	**100.0%**
												-	
Grand Total	**41.5**	**7,409**	**179**	**5,063**	**6,395**	**1,030**	**16.1%**	**2,593**	**40.5%**	**2,773**	**43.4%**	**6,395**	**100.0%**

- From this the average household size was determined at 2.1 persons per household which is relatively low.
- A total of 6395 households have been identified from the 5063 surveys. This includes 2800 households in Town Centre, 1061 in Zone O and 2534 in Enkanini. This is deemed to represent the total current housing backlog/ demand in the area.
- The next section of Table 1 comprises the Household Income Profile indicating the number of households earning more than R3500 per month (the GAP Market); households comprising a single person with no dependents (non-qualifiers for BNG housing i.e. rental demand); and potential beneficiaries for BNG housing (households not falling under any of the first two categories).
- An estimated 2773 households, representing 43.4% of all households are deemed to be potential subsidy beneficiaries, while about 1030 households (16%) fall within the GAP Market (earning >R3500 p.m.). The remaining 2593 households (40.5%) are non-qualifiers at present, but it may change as single heads of households get married and/ or have children.

3. HOUSING TYPOLOGIES TO BE CONSIDERED

- The total demand/ backlog of 6395 households can be accommodated in any of the following ways (see Table 2) depending on the beneficiary status of the individual households:

Table 2: Housing Typologies

Qualifiers	
- BNG Single Free Standing Units	Full Ownership
- BNG Multi Storey Units	Full Ownership
- Site and Service	Full Ownership
Non-Qualifiers	
- Community Residential Units (Refurbishment)	Rental
- Social Housing	Rental
- Site and Service	Rental/PTO
- Lower and Upper GAP Market	Full Ownership

- From the survey information it is evident that the majority of households (approximately 56.6%) are only legible for the non-qualifier options noted above (16.1% GAP and 40.5% Rental).

4. IN-SITU FORMALISATION POTENTIAL AND RELOCATION SURPLUS

Various investigations have been undertaken by professional project teams in the different parts of Kayamandi and Enkanini to determine the in-situ formalisation potential/ capacity within each of these areas. The results/ findings from these studies are summarised in **Table 3** below and discussed in subsequent sections.

Table 3: In-Situ Formalisation Yields and Relocation Surplus

Area	Approach	Demand		In-Situ Yield (Units)		Relocation Surplus	
		no	%	no	%	no	%
Town Centre	4 Storey Walk-up BNG and Rental (621) + (986)	2800	100%	1607	57%	1193	43%
Zone 0	BNG and "Joe Slovo" Model (526) + (177)	1061	100%	703	66%	358	34%
Enkanini	BNG, Social and Site and Service (818) + (296) + (190)	2534	100%	1304	51%	1230	49%
		6395	100%	3614	57%	2781	43%

4.1. Town Centre

Figure 3 depicts the proposed layout towards the redevelopment/ formalisation of the Kayamandi Town Centre. It is based on the principle of only providing multi-storey (4 to 5 floors) BNG and Rental units in order to optimally utilise the available land in the strategically located Town Centre.

The four storey walk-up scenario results in about 1607 units comprising 621 BNG units and 986 Rental units (studio, 1 and 2 bedroom). The 5-storey scenario increases these figures to 621 BNG and 1230 Rental units which total about 1851 units.

Table 3 shows that the four storey scenario would leave a surplus of 1193 households that would need to be relocated from the area.

4.2. Zone O

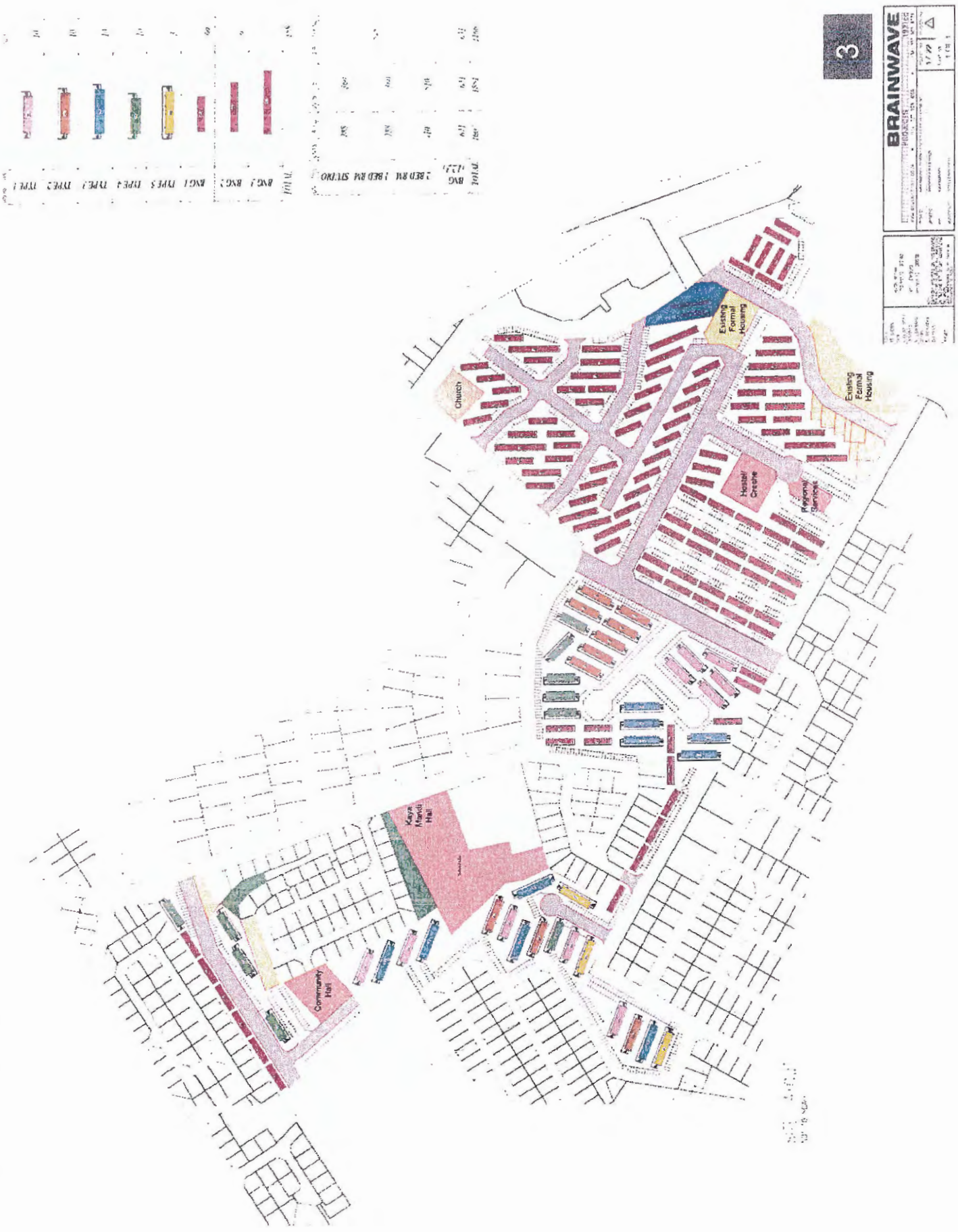
In Zone O the formalisation/ subdivisional plan compiled for the area (see Figure 4) identified potential to accommodate about 703 units comprising 526 BNG houses and 177 rental units in line with the "Joe Slovo" Model. The demand in the area stands at 1061 units which leaves a surplus of 358 households which need to be relocated.

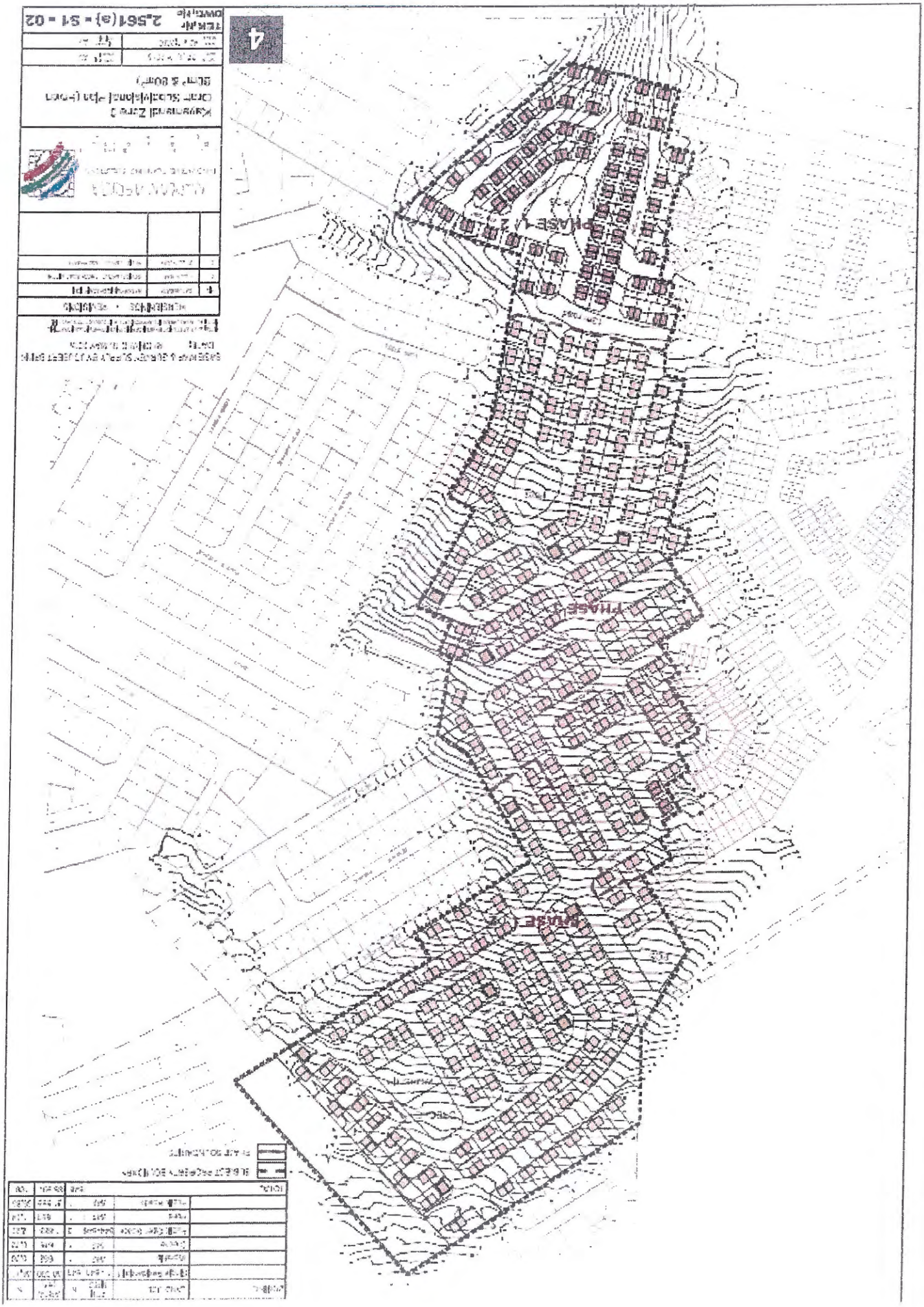
4.3. Enkanini

In Enkanini a study currently underway found about 12,62 hectares of land in this area to be suitable for residential development. If developed for BNG typologies only this land could accommodate an estimated 1262 units while a Social Housing scenario on the developable land could yield an estimated 1476 units.

It was also determined that a Mixed Housing Typology scenario could yield about 1304 units comprising 369 Social Housing units, 710 BNG units, 315 enhanced BNG units and 237 Site and Service units.

As shown in Table 3 this Mixed Housing scenario would still leave a surplus of 1230 units which need to be relocated from the existing Enkanini area.


3
BRAINWAVE
Existing Formal Housing
Existing Formal Housing
Church
Hostel/ Creche
Regional Services
Kaya Maraba Hall
Community Hall


PHASE 1
PHASE 2
PHASE 3

4.4. Conclusive Summary

From current investigations it is evident that approximately 3614 of the 6395 households in Kayamandi Town Centre, Zone O and Enkanini can be accommodated in-situ. This represents about 57% of the total demand in the area. The remaining 43% of households (2781) need to be relocated to alternative areas.

5. RELOCATION LAND SUPPLY

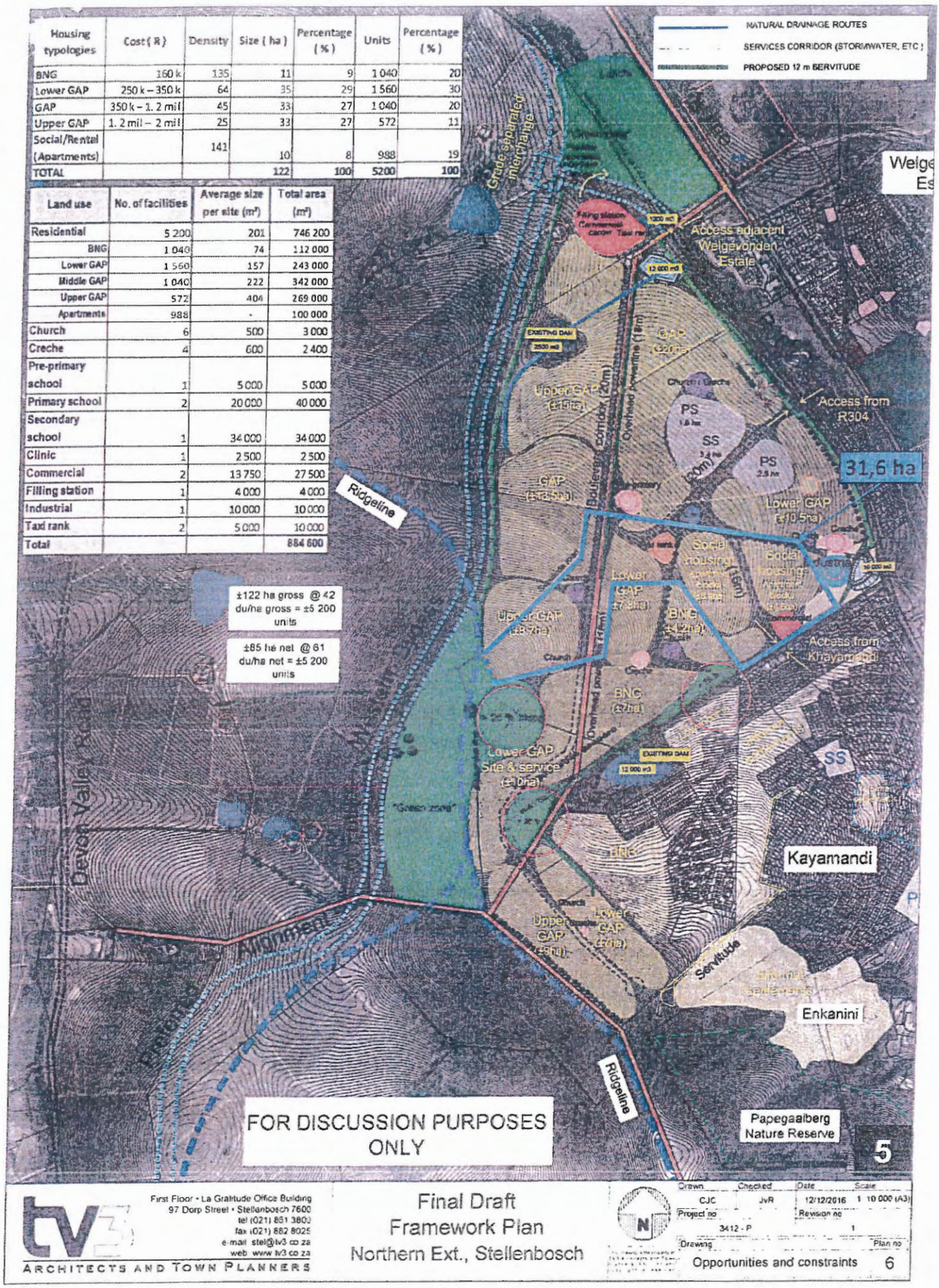
At present there are only two areas under consideration to accommodate the surplus housing demand from the Kayamandi-Enkanini area.

5.1. Watergang

The Watergang area is earmarked to serve as decanting site for the formalisation of Zone O. As part of this process some 193 serviced sites in Watergang will provide 332 decanting opportunities while the formalisation of Zone O is underway. Once the formalisation of Zone O is completed the 193 serviced stands in Watergang will be made available for development. Based on the demand profile of Zone O it is suggested that these sites eventually be earmarked for GAP Market housing.

5.2. Northern Extensions

- **Figure 5** depicts the draft Framework Plan for the Northern Extensions Area compiled during January 2017.
- It shows that the area comprises about 122 hectares of land which could yield approximately 5200 units/ stands of which 988 are for rental stock (Apartments), and 1040 are BNG units (2028 units in total).
- The remaining 3172 units are for various brackets of the GAP market.
- The two Social Housing precincts comprise about 10 hectares of land which borders Kayamandi to the north in the area closest to route R304.
- Adjacent to the south-west and bordering the Watergang area are two more precincts (11 ha) earmarked for BNG housing (5,4 ha and 4,2 ha respectively) while the land further to the west is earmarked for Site and Service (about 10 hectares).
- Hence, there is about 31 hectares of land bordering Kayamandi/ Watergang to the north which has been earmarked for lower income/ subsidised housing development. Collectively these three areas could yield about 2496 units at an average density of 80 units per hectare.
- As shown on Figure 5 approximately 31,6 ha of land in this area belongs to the Stellenbosch Local Municipality (refer to blue polygon). It includes both precincts earmarked for Social Housing as well as a portion of a BNG and an Upper and Lower GAP precinct respectively.



Housing typologies	Cost (R)	Density	Size (ha)	Percentage (%)	Units	Percentage (%)
BNG	160 k	135	11	9	1 040	20
Lower GAP	250 k – 350 k	64	35	29	1 560	30
GAP	350 k – 1. 2 mil	45	33	27	1 040	20
Upper GAP	1. 2 mil – 2 mil	25	33	27	572	11
Social/Rental (Apartments)		141	10	8	988	19
TOTAL			122	100	5200	100

Land use	No. of facilities	Average size per site (m²)	Total area (m²)
Residential	5 200	201	746 200
BNG	1 040	74	112 000
Lower GAP	1 560	157	243 000
Middle GAP	1 040	222	342 000
Upper GAP	572	404	269 000
Apartments	988	-	100 000
Church	6	500	3 000
Creche	4	600	2 400
Pre-primary school	1	5 000	5 000
Primary school	2	20 000	40 000
Secondary school	1	34 000	34 000
Clinic	1	2 500	2 500
Commercial	2	13 750	27 500
Filling station	1	4 000	4 000
Industrial	1	10 000	10 000
Taxi rank	2	5 000	10 000
Total			884 600

tv3 ARCHITECTS AND TOWN PLANNERS
First Floor • La Gratitude Office Building
97 Dorp Street • Stellenbosch 7600
tel (021) 851 3800
fax (021) 882 8025
e-mail stel@tv3.co.za
web www.tv3.co.za

Final Draft
Framework Plan
Northern Ext., Stellenbosch

Drawn	Checked	Date	Scale
CJC	JvR	12/12/2016	1 10 000 (A3)
Project no		Revision no	
3412 - P		1	
Drawing			Plan no
Opportunities and constraints			6

6. RELOCATION ALTERNATIVES AND ASSOCIATED COSTS

6.1. Relocation Alternatives

Table 4 summarises alternative relocation scenarios to deal with the surplus demand from each of the three areas as noted under section 4 above. Each of these are briefly discussed below:

Table 4: Kayamandi: Demand and Supply Alternatives

AREA	Total Demand	IN SITU Supply	SCENARIO1: RELOCATE 1 Supply	SCENARIO 2: RELOCATE 2 Supply
TOWN CENTRE				
GAP	494		494	494
BNG	992	621	371	371
Rental	1,314	986	328	
Site& Service				328
Subtotal	2800	1607	1193	1193
ZONE O				
GAP	348	193	155	155
BNG	501	526	(25)	(25)
Rental	212	177	35	
Site& Service				35
Subtotal	1061	896	165	165
ENKANINI				
GAP	188		188	188
BNG	1,280	818	462	462
Rental	1,067	296	581	
Site& Service		190		581
Subtotal	2,534	1,304	1,230	1,230
TOTAL	6,395	3,807	2,588	2,588

Watergang

Town Centre

About 1607 units are to be formalised in-situ in the existing Town Centre. This comprises 621 RDP units and 986 rentals.

The relocation surplus comprises about 494 GAP Market, 371 BNG and 328 non-qualifiers/ rental units.

Under Scenario 1 the demand is addressed by way of formal BNG and Rental (Flats) units while Scenario 2 caters for the rental/ non-qualifier demand by way of basic Site and Service. The GAP demand (494 units) are to be provided by the private sector in any of the designated GAP precincts in the Northern Extension Area.

Zone O

In Zone O the total BNG demand is addressed in-situ – there is actually a surplus of 25 units. The rental demand is addressed by way of 177 rental units provided in-situ (the Joe Slovo Model). The 35 surplus units to be relocated are then either catered for by way of Rental Units (Flats) or Site and Service in the Northern Extensions.

The 348 GAP Market units from Zone O are partially catered for in Watergang (193 erven) and the remaining 155 units need to be relocated to one of the GAP Market precincts located in the Northern Extension Area.

Enkanini

The relocation surplus from Enkanini is 1230 units from which the 188 GAP Market units will be provided by the private sector in the appropriate GAP precinct in the Northern Expansion Area.

Similarly, the 462 BNG surplus demand will be accommodated in the designated BNG precincts of the Northern Expansion Area.

The remaining non-qualifier/ rental demand of 581 units can be addressed by way of rental accommodation (Social CRU flats) as shown under Scenario 1, or by way of Site and Service as indicated under Scenario 2.

6.2. Relocation Cost per Alternative Scenario

Table 5 below calculates the development costs associated with the alternative scenarios for each of the three areas and for the study area as a whole.

The unit costs applied in Table 5 are based on a BNG unit cost of R138 140 for a multi-storey unit plus the standard R44 500/unit for internal service costs (= R182 640/unit). The Rental unit cost of R200 000 falls within the CRU range of R120 000 – R260 000 and the standard R44 500/ unit for internal services was added (= R244 500/unit). For Site and Service typologies only the internal service cost of R44 500/unit was applied.

Table 5: Kayamandi: Cost per Relocation Alternative

AREA	Total Demand	IN SITU Supply	IN SITU Cost (R mill)	SCENARIO1: RELOCATE 1 Supply	SCENARIO1: RELOCATE 1 Cost (R mill)	SCENARIO 2: RELOCATE 2 Supply	SCENARIO 2: RELOCATE 2 Cost (R mill)
TOWN CENTRE							
GAP	494			494	Private Sector	494	Private Sector
BNG	992	621	R 113.42	371	R 67.76	371	R 67.76
Rental	1,314	986	R 241.08	328	R 80.20		
Site& Service						328	R 14.60
Subtotal	2800	1607	R 354.50	1193	R 147.96	1193	R 82.36
ZONE O							
GAP	348	193		155	Private Sector	155	Private Sector
BNG	501	526	R 96.07	(25)		(25)	
Rental	212	177	R 43.28	35	R 8.56		
Site& Service						35	R 1.56
Subtotal	1061	896	R 139.35	165	R 8.56	165	R 1.56
ENKANINI							
GAP	188			188	Private Sector	188	Private Sector
BNG	1,280	818	R 149.40	462	R 84.32	462	R 84.32
Rental	1,067	296	R 72.37	581	R 142.01		
Site& Service		190	R 8.46			581	R 25.85
Subtotal	2,534	1,304	R 230.23	1,230	R 226.33	1,230	R 110.17
TOTAL	6,395	3,807	R 724.07	2,588	R 382.84	2,588	R 194.08

Watergang

Based on the above unit cost assumptions the development costs per scenario as reflected in Table 5 were calculated and summarised as follow:

- The in-situ formalisation earmarked for the study area (BNG and Rental) amounts to approximately R724,07 million of which the Town Centre makes up R354,50 million, Zone O a total of R139,35 million and Enkanini about R230,23 million.
- If the total surplus demand (2588 units) to be relocated to the Northern Extensions are to be served by way of formal BNG and Rental units (Scenario 1), the estimated cost would amount to approximately R382,84 million.
- However, if the formal Rental units are substituted by Site and Service, the estimated cost drops to R194,08 million (± 51% saving compared to Scenario 1).

6.3. Recommendation: Relocation and In-Situ Formalisation Typologies

There are several longer term advantages associated with the Site and Service Scenario – apart from the significant cost saving:

- Firstly, it enables the SLM to enhance the living conditions of a larger number of residents with the funding available due to the lower cost per unit.
- It also assists in de-densifying the existing informal settlements by acting as decanting sites to the relocation surplus. This enables in-situ formalisation of remaining structures in the existing informal settlements in Kayamandi Town Centre, Zone O and Enkanini.

- Each relocated household receives a serviced site in a planned township with some form of tenure security based on their status e.g. Permission to Occupy, Rental Agreement or Full Ownership.
- It also provides the necessary flexibility for households to construct and incrementally upgrade their top structures (houses) over a period of time and in accordance with their financial capacity.
- It should also be kept in mind that many of the current non-qualifiers do not have dependants which is a temporary situation. As soon as they get married this status changes. Hence it is more appropriate to provide them with an erf which could serve their needs for life – merely changing the tenure status from rental to full ownership the moment they qualify.

In view of the above it is recommended that the following approach be followed in the Kayamandi-Enkanini and Northern Extensions area:

Existing Settlements:

- Within the existing urban fabric (Kayamandi Zones A, J, K, L, D, F, I, M, P and O as well as developable part of Enkanini), provide medium to higher density (multi storey) BNG and Rental stock (CRU/Social) as most of this land is well-located and in close proximity to public transport and major areas of job opportunity. The good location warrants investment in the more costly multi storey BNG and Rental typologies. (The Rental stock provided is intended to serve long term/ permanent non-qualifiers or households preferring to rent because of personal circumstances).

Northern Expansion Area:

- In the expansion areas provide for the GAP and BNG market at medium to higher densities due to the high land cost and the scarcity of developable land.
- For temporary and permanent non-qualifiers, provide medium to higher density Site and Service facilities with various tenure options.

7. FORMALISATION AND RELOCATION STRATEGY

7.1. Overall Approach

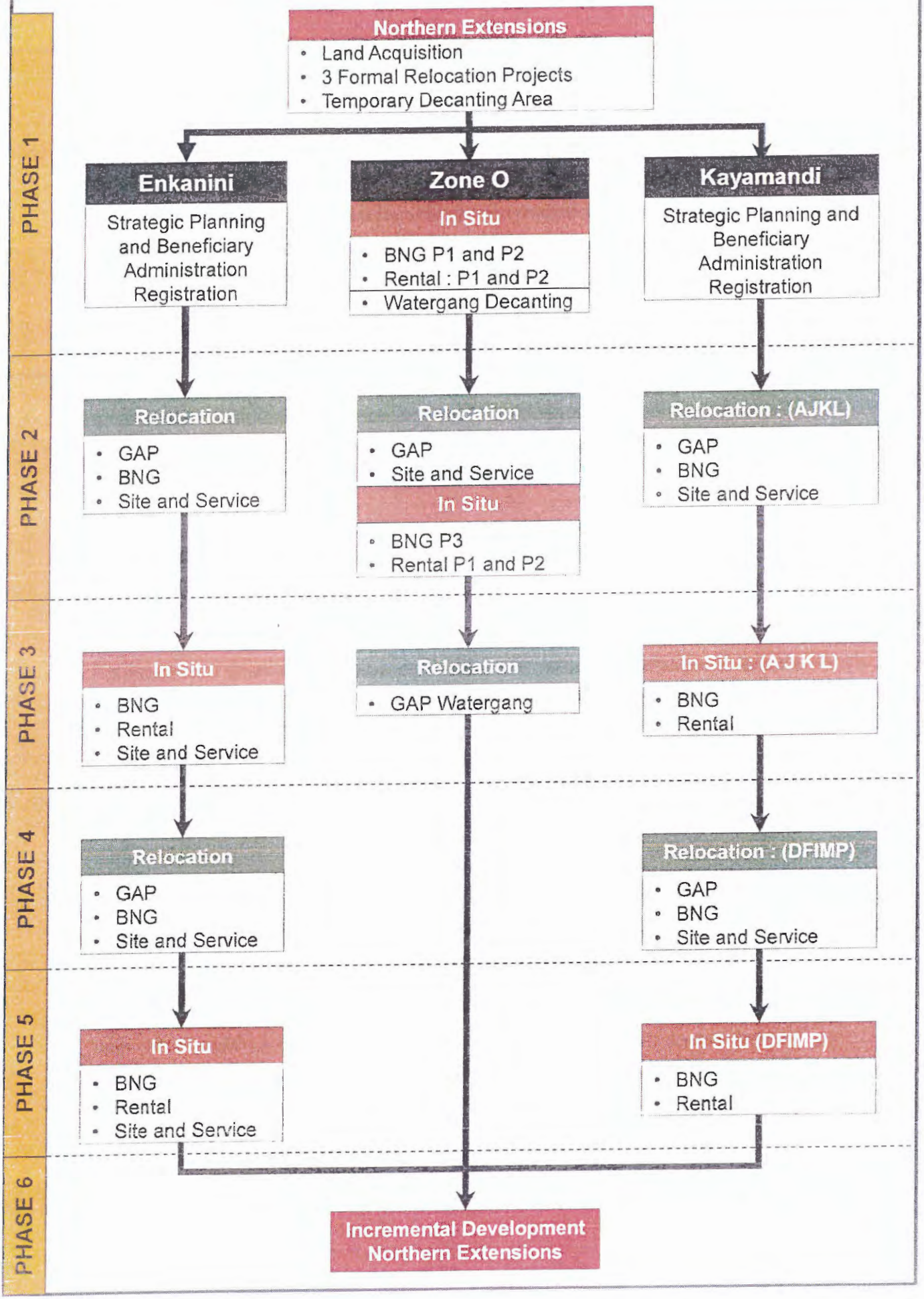
Diagram 1 graphically depicts the proposed Formalisation and Relocation Strategy for the Kayamandi-Enkanini area. It is briefly summarised as follow:

Phase 1: 2018/2019

a) Northern Extensions

Acquire land in the Northern Extensions area to accommodate the proposed BNG and Site and Service developments in this area. The priority areas in this regard include the one Site and Service precinct to the west, the two Social Housing precincts to the east, and the two BNG

DIAGRAM 1 : KAYAMANDI – ENKANINI FORMALISATION AND RELOCATION STRATEGY



precincts indicated adjacent to the north of Enkanini-Kayamandi on **Figure 6**. The Stellenbosch Local Municipality already owns about 31,6 ha of this land (see blue on Figure 6) but it would be strategically important to also acquire parts of the estimated 32,8 hectares of land bordering the Watergang area (indicated in red on Figure 6). This land includes the Site and Service precinct (10 ha), the bulk of the two BNG precincts, and part of the Lower GAP Market precinct to the north thereof. This land is essential to facilitate the de-densification of surplus demand from Enkanini and Kayamandi Town Centre - acting as formal expansion area to the township.

The lead time to acquiring and preparing the land is at least two years and needs to commence immediately.

- Initiate three formal Relocation Projects in Northern Expansion Area to facilitate permanent de-densification of Enkanini and Kayamandi: GAP (494 units); BNG (371 Units); Site and Service (328 Units).
- Prepare the two proposed Social Housing precincts located on council owned land (refer to Figure 6) to act as temporary decanting area for Kayamandi-Enkanini formalisation process.

b) Zone O

- Commence with the in-situ formalisation of Kayamandi Zone O Phase P1/P2 BNG and Rental in accordance with the Zone O Formalisation Plan (refer to Figure 4). The Watergang decanting area will facilitate this process.

c) Enkanini and Kayamandi

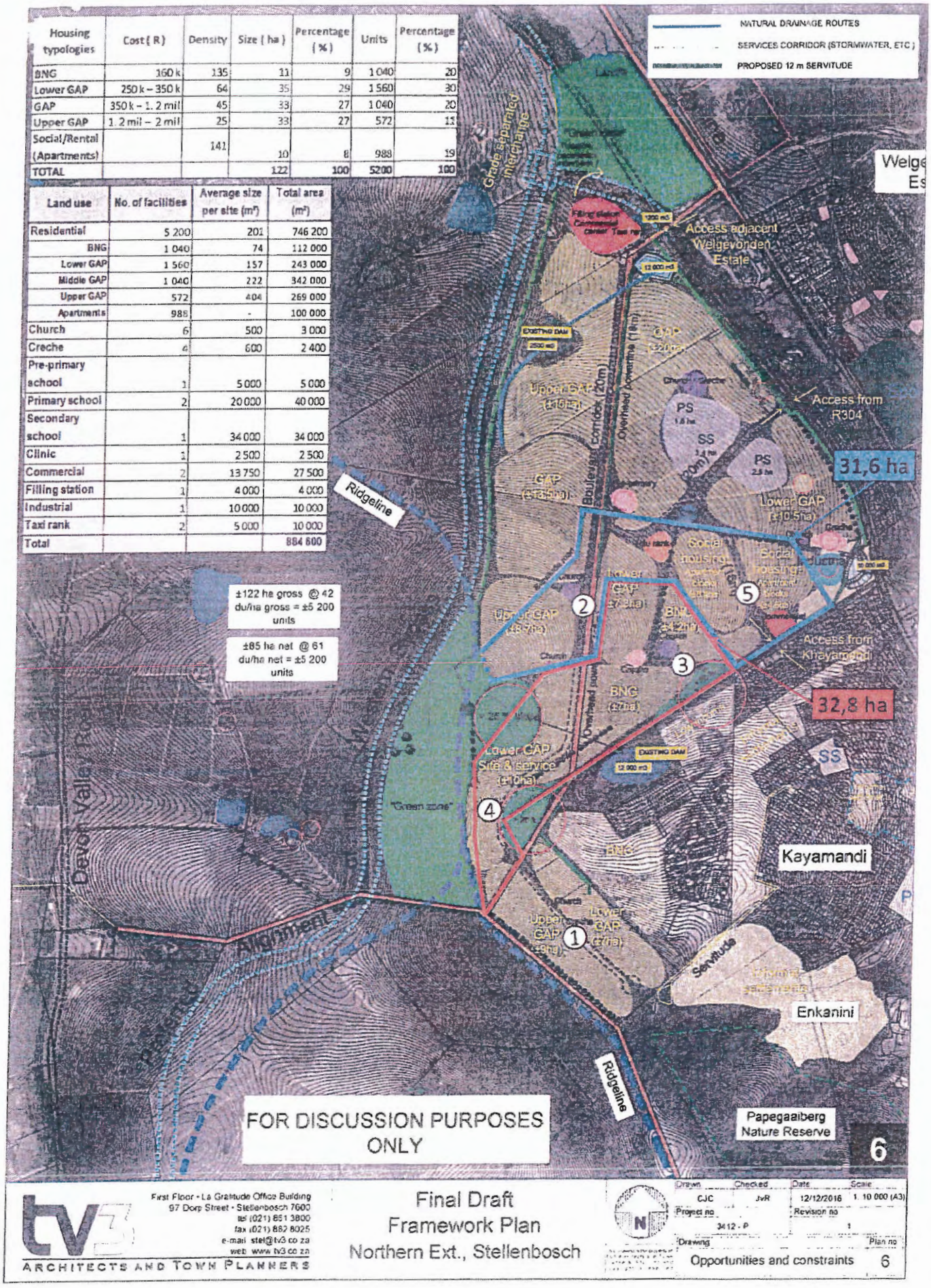
- Finalise Strategic Planning towards formalisation of Enkanini and Kayamandi Town Centre and complete registration of beneficiaries (all households).

Phase 2: 2020/2021

- Relocate the surplus GAP and Site and Service demand from Zone O to the Northern Extension Area GAP and Site and Service project area.
- Complete Zone O in-situ BNG and Rental development.
- Relocate first group of households from Enkanini to the Northern Extensions GAP, BNG and Site and Service project areas respectively.
- Relocate first group of households from Kayamandi (Zones A, J, K, L) to the Northern Extensions GAP, BNG and Site and Service project areas respectively.

Phase 3: 2022/2023

- Formalise remaining GAP households from Zone O on the 191 sites in Watergang which were utilised as decanting site during Phase 1 and Phase 2.
- Commence with formalisation first 50% of Enkanini in-situ households (BNG, Rental and Site and Service).
- Commence with formalisation of in-situ BNG and Rental in Kayamandi Zones A, J, K and L.



Housing typologies	Cost (R)	Density	Size (ha)	Percentage (%)	Units	Percentage (%)
BNG	160 k	135	11	9	1 040	20
Lower GAP	250 k – 350 k	64	35	29	1 560	30
GAP	350 k – 1. 2 mil	45	33	27	1 040	20
Upper GAP	1. 2 mil – 2 mil	25	33	27	572	11
Social/Rental (Apartments)		141	10	8	988	19
TOTAL			122	100	5200	100

Land use	No. of facilities	Average size per site (m²)	Total area (m²)
Residential	5 200	201	746 200
BNG	1 040	74	112 000
Lower GAP	1 560	157	243 000
Middle GAP	1 040	222	342 000
Upper GAP	572	404	269 000
Apartments	988	-	100 000
Church	6	500	3 000
Creche	4	600	2 400
Pre-primary school	1	5 000	5 000
Primary school	2	20 000	40 000
Secondary school	1	34 000	34 000
Clinic	1	2 500	2 500
Commercial	2	13 750	27 500
Filling station	1	4 000	4 000
Industrial	1	10 000	10 000
Taxi rank	2	5 000	10 000
Total			884 600

tv3 ARCHITECTS AND TOWN PLANNERS
First Floor • La Gratitude Office Building
97 Dorp Street • Stellenbosch 7600
tel (021) 851 3800
fax (021) 882 8025
e-mail stel@tv3.co.za
web www.tv3.co.za

Final Draft
Framework Plan
Northern Ext., Stellenbosch

Drawn	Checked	Date	Scale
CJC	JvR	12/12/2016	1: 10 000 (A3)
Project no		Revision no	
3412 - P		1	
Drawing			Plan no
Opportunities and constraints			6

- Use the two Social Housing Precincts in Northern Extension area as temporary decanting site for the two projects noted above.

Phase 4: 2024/2025

- Relocate and formalise last households from Enkanini in the Northern Extensions GAP, BNG and Site and Service project areas respectively.
- Relocate and formalise last households from Kayamandi Zone D, F, I, M and P in the Northern Extensions GAP, BNG and Site and Service project areas respectively.

Phase 5: 2026/2027

- Complete last in-situ BNG, Rental and Site and Service formalisation in Enkanini.
- Complete in-situ BNG and Rental formalisation in Kayamandi Zones D, F, I, M and P.

Phase 6: 2028 and Beyond

- Incremental expansion of GAP, BNG, Site and Service and Rental in broader Northern Expansion Area.

7.2. Strategy per Area

Tables 6.1, 6.2 and 6.3 summarise the Formalisation Strategy for Zone O, Kayamandi and Enkanini respectively.

Table 6.1: Zone O: Formalisation Strategy

		ZONE O						
PRECINCT	TYPE	NUMBER OF UNITS						
		Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL	%
NORTHERN EXPANSION	GAP		155				155	
	BNG						-	
	Rental						-	
	Site& Service		35				35	
	Total	-	190	-	-	-	190	18%
WATERGANG	GAP			193			193	
	BNG						-	
	Rental						-	
	Site& Service						-	
	Total	-	-	193	-	-	193	18%
IN SITU	GAP						-	
	BNG	251	251				501	
	Rental	90	87				177	
	Site& Service						-	
	Total	341	337	-	-	-	678	64%
TOTAL	GAP	-	155	193	-	-	348	33%
	BNG	251	251	-	-	-	501	47%
	Rental	90	87	-	-	-	177	17%
	Site& Service	-	35	-	-		35	3%
	Total	341	527	193			1,061	100%
%		32%	50%	18%	0%	0%	100%	

Zone O: Internal P1/P2

Zone O: Internal P3

- Phase 1: A total of 341 houses are constructed comprising 90 rental units in the southern portion (P1/P2) of Zone O, and 251 BNG units in the northern extents of Zone O (P1/P2) (refer to Figure 4).

  Watergang provides 332 decanting opportunities to facilitate this process.

- Phase 2: An additional 337 units comprising 87 rentals in the southern part (P1/P2) and 251 BNG units in the central extents (P3) of Zone O are constructed.

  The surplus GAP demand (155 units) is accommodated in the Northern Extensions GAP project, while 35 Site and Service units in the Northern Extensions accommodate the surplus demand from Zone O.

- Phase 3: A total of 193 GAP units are developed on the serviced stands in Watergang which acted as decanting area during Phase P1, P2 and P3.

Table 6.2: Kayamandi: Formalisation Strategy

		KAYAMANDI Zones A,J,K,L				KAYAMANDI Zones D,F,I,M,P				KAYAMANDI TOTAL	
PRECINCT	TYPE	NUMBER OF UNITS				NUMBER OF UNITS				NUMBER OF UNITS	
		Phase 2	Phase 3	TOTAL	%	Phase 4	Phase 5	TOTAL	%	TOTAL	%
NORTHERN EXPANSION	GAP	306		306		188		188		494	
	BNG	271		271		100		100		371	
	Rental			-				-		-	
	Site& Service	241		241		87		87		328	
	Total	818	-	818	41%	375	-	375	47%	1,193	43%
WATERGANG	GAP			-				-		-	
	BNG			-				-		-	
	Rental			-				-		-	
	Site& Service			-				-		-	
	Total	-	-	-	0%	-	-	-	0%	-	0%
IN SITU	GAP			-				-		-	
	BNG		453	453			168	168		621	
	Rental		725	725			261	261		986	
	Site& Service			-				-		-	
	Total	-	1,178	1,178	59%	-	429	429	53%	1,607	57%
TOTAL	GAP	306	-	306	15%	188	-	188	23%	494	18%
	BNG	271	453	724	36%	100	168	268	33%	992	35%
	Rental	-	725	725	36%	-	261	261	32%	986	35%
	Site& Service	241	-	241	12%	87	-	87	11%	328	12%
	Total	818	1,178	1,996	100%	375	429	804	100%	2,800	100%
%		41%	59%	100%		47%	53%	100%		100%	

- **Phase 2**: A total of 818 families from Zones A, J, K and L are relocated to the Northern Extension project areas: 306 GAP Market; 271 BNG units and 241 Site and Service units.
- **Phase 3**: In-situ formalisation in Zones A, J, K and L commence, providing 453 BNG units and 725 Rental units.
- **Phase 4**: Some 375 households from Kayamandi Zones D, F, I, M and P are relocated to the Northern Extension Area (188 GAP Market, 100 BNG and 87 Site and Service).
- **Phase 5**: The final phase of in-situ formalisation commences in Kayamandi Zones D, F, I, M and P, comprising 168 BNG units and 261 Rental units.
- Approximately 43% of the households from Kayamandi need to relocate to the Northern Extensions Area while the remaining 57% (1607 families) can be formalised locally.

Table 6.3: Enkanini: Formalisation Strategy

PRECINCT	TYPE	ENKANINI					
		NUMBER OF UNITS					
		Phase 2	Phase 3	Phase 4	Phase 5	TOTAL	%
NORTHERN EXPANSION	GAP	94		94		188	
	BNG	231		231		462	
	Rental					-	
	Site& Service	291		290		581	
	Total	616	-	614	-	1,230	49%
WATERGANG	GAP					-	
	BNG					-	
	Rental					-	
	Site& Service					-	
	Total	-	-	-	-	-	0%
IN SITU	GAP					-	
	BNG		409		409	818	
	Rental		148		148	296	
	Site& Service		95		95	190	
	Total	-	652	-	652	1,304	51%
TOTAL	GAP	94	-	94	-	188	7%
	BNG	231	409	231	409	1,280	51%
	Rental	-	148	-	148	296	12%
	Site& Service	291	95	290	95	771	30%
	Total	616	652	614	652	2,534	100%
%		24%	26%	24%	26%	100%	

- Phase 2: Some 616 families are relocated from Enkanini to the Northern Extensions GAP project (94); BNG project (231); and Site and Service project (291) respectively.
- Phase 3: In-situ formalisation of 652 units commences in Enkanini – 409 BNG units; 148 Rentals; and 95 Site and Service.
- Phase 4: A second round of relocation is initiated with 94 GAP Market, 231 BNG Market and 290 Site and Service households being established in the designated project areas in the Northern Extensions (614 households in total).
- Phase 5: The final phase of in-situ formalisation (652 units) in Enkanini commences. A total of 409 BNG units, 148 Rental units, and 95 Site and Service Sites is developed.
- 51% of the community is formalised in Enkanini while 49% have to relocate to the Northern Extensions.

7.3. Consolidated Summary and Cost per Phase

Table 7.1 summarises the number of units to be developed per phase in the respective areas, while Table 7.2 depicts the estimated cost per phase and per area.

During Phase 1 a total of 341 units will be developed (mostly in Zone O). The estimated cost for this phase is R67,82 million.

Phase 2 sees a significant increase to about 1961 units of which the majority (1623) are located in the Northern Extensions and some 337 are developed in-situ (Zone O). The total cost is about R183,81 million.

During Phase 3 the number of units increases even more to 2023 units of which 1830 units represent in-situ formalisation. The remaining 193 units are developed in Watergang (GAP Market). The costs associated with this phase stands at about R375,12 million.

During Phases 4 and 5 the number of units to be developed decreases slightly to 990 and 1081 units respectively. The units developed during these two phases relate to the upgrading of Kayamandi Zone D, F, I, M and P and Enkanini. The cost estimate for Phase 4 stands at R77,23 million while Phase 5 amounts to an estimated R209,6 million.

As shown on Table 7.1 some 56% of the demand in Enkanini, Zone O and Kayamandi can be accommodated locally (3589 units) while 193 units (3%) are to be relocated to Watergang and 2613 units (41%) to the Northern Extensions.

The total development cost for the five phases noted above amounts to about R913,58 million (Table 7.2). This includes the BNG, Rental and Site and Service cost as indicated below, but excludes GAP project cost.

- BNG: R506,4 million (2773 units).
- Rental: R356,7 million (1459 units)
- Site and Service: R50,45 million (1134 units).

Annexure A comprises a brief summary of funding sources related to infrastructure and various housing typologies.

From Table 7.1 it is also evident that three formal relocation projects to be initiated in the Northern Extension area (to be developed in tandem with the formalisation of Kayamandi Town Centre, Enkanini and Zone O) should comprise the following:

- GAP Market: 837 units.
- BNG Market: 833 units.
- Site and Service: 944 stands

Table 7.1: Enkanini-Kayamandi: Formalisation Strategy

		TOTAL						
PRECINCT	TYPE	NUMBER OF UNITS						
		Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL	%
NORTHERN EXPANSION	GAP	-	555	-	282	-	837	
	BNG	-	502	-	331	-	833	
	Rental	-	-	-	-	-	-	
	Site& Service	-	567	-	377	-	944	
	Total	-	1,623	-	990	-	2,613	41%
WATERGANG	GAP		-	193	-	-	193	
	BNG	-	-	-	-	-	-	
	Rental	-	-	-	-	-	-	
	Site& Service	-	-	-	-	-	-	
	Total	-	-	193	-	-	193	3%
IN SITU	GAP	-	-	-	-	-	-	
	BNG	251	251	862	-	577	1,940	
	Rental	90	87	873	-	409	1,459	
	Site& Service	-	-	95	-	95	190	
	Total	341	337	1,830	-	1,081	3,589	56%
TOTAL	GAP	-	555	193	282	-	1,030	16%
	BNG	251	752	862	331	577	2,773	43%
	Rental	90	87	873	-	409	1,459	23%
	Site& Service	-	567	95	377	95	1,134	18%
	Total	341	1,961	2,023	990	1,081	6,395	100%
%		5%	31%	32%	15%	17%	100%	

Table 7.2: Enkanini-Kayamandi: Formalisation Strategy

		TOTAL COST						
PRECINCT	TYPE	R million						
		Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	TOTAL	%
NORTHERN EXPANSION	GAP							
	BNG	R -	R 91.61	R -	R 60.47	R -	R 152.08	
	Rental	R -	R -	R -	R -	R -	R -	
	Site& Service	R -	R 25.24	R -	R 16.76	R -	R 42.00	
	Total	R -	R 116.85	R -	R 77.23	R -	R 194.08	3%
WATERGANG	GAP							
	BNG	R -	R -	R -	R -	R -	R -	
	Rental	R -	R -	R -	R -	R -	R -	
	Site& Service	R -	R -	R -	R -	R -	R -	
	Total	R -	R -	R -	R -	R -	R -	0%
IN SITU	GAP							
	BNG	R 45.75	R 45.75	R 157.48	R -	R 105.34	R 354.32	
	Rental	R 22.07	R 21.21	R 213.42	R -	R 100.03	R 356.73	
	Site& Service	R -	R -	R 4.23	R -	R 4.23	R 8.46	
	Total	R 67.82	R 66.96	R 375.12	R -	R 209.60	R 719.50	11%
TOTAL	GAP							0%
	BNG	R 45.75	R 137.36	R 157.48	R 60.47	R 105.34	R 506.40	8%
	Rental	R 22.07	R 21.21	R 213.42	R -	R 100.03	R 356.73	6%
	Site& Service	R -	R 25.24	R 4.23	R 16.76	R 4.23	R 50.45	1%
	Total	R 67.82	R 183.81	R 375.12	R 77.23	R 209.60	R 913.58	14%
%		7%	20%	41%	8%	23%	100%	

Table 8 below shows the land area required to develop these units based on different erf size scenarios.

Table 8: Area Required for Relocation Purposes

Relocation Typologies	Number of serviced sites	Land Area Required @ 155m² per erf	@ 81m² per erf	@ 68m² per erf	@ 45m² per erf	@ 32m² per erf
GAP	837	13,0 ha	6,8 ha	7,2ha	3,8 ha	2,2 ha
BNG	833	12,9 ha	6,7 ha	7,2 ha	3,7 ha	2,2 ha
Site and Services	944	14,6 ha	7,6 ha	8,1 ha	4,2 ha	2,5 ha
Total	2614	40,5 ha	21,2 ha	21,2 ha	11,8 ha	6,8 ha

GAP Market: The GAP Market initiative (837 units) would require a minimum of about 13 hectares of land if erven are to be 155m² in size. In line with a broader strategy towards consolidating development around the existing footprint of Kayamandi-Enkanini it is suggested that the two land parcels earmarked for Upper and Lower GAP development (refer to number 1 on Figure 6) be considered for this purpose. Alternatively, the two GAP precincts in the Northern Expansion Area (see number 2 on Figure 6) could be considered. A large part of this land belongs to the SLM which could become part of a land availability agreement with a private developer, but provision of bulk services could be costly.

BNG: The BNG project comprising 833 units should be located around the two BNG sites (see number 3 on Figure 6). Part of one of these two sites comprise Council owned land. It would require at least about 10 hectares of land if an average erf size of 155m² is used.

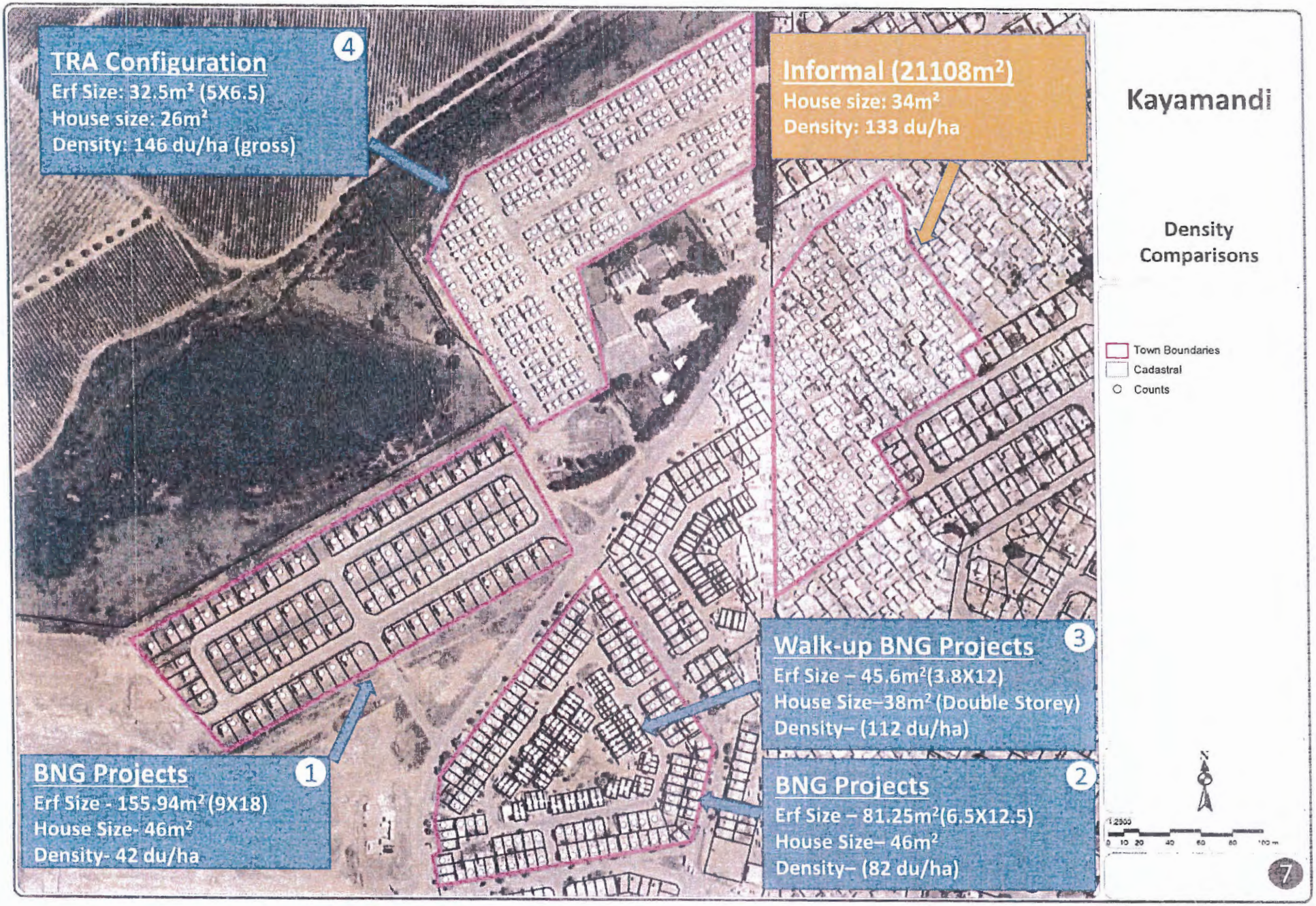
Figure 7 depicts an existing BNG project (Number 1) in Watergang developed at this density. However, there are two projects with a more dense configuration in the same vicinity. Project number 2 on Figure 7 is based on an erf size of 81m²/erf with a 46m² house at a density of 82 units/ha. Project 3 is even more dense at 112 units/ha and average floor size of 38m²/unit (double storey). The erf size of these units is about 45m².

Based on an average erf size of 68m² the BNG project would require an estimated 7,2 ha of land.

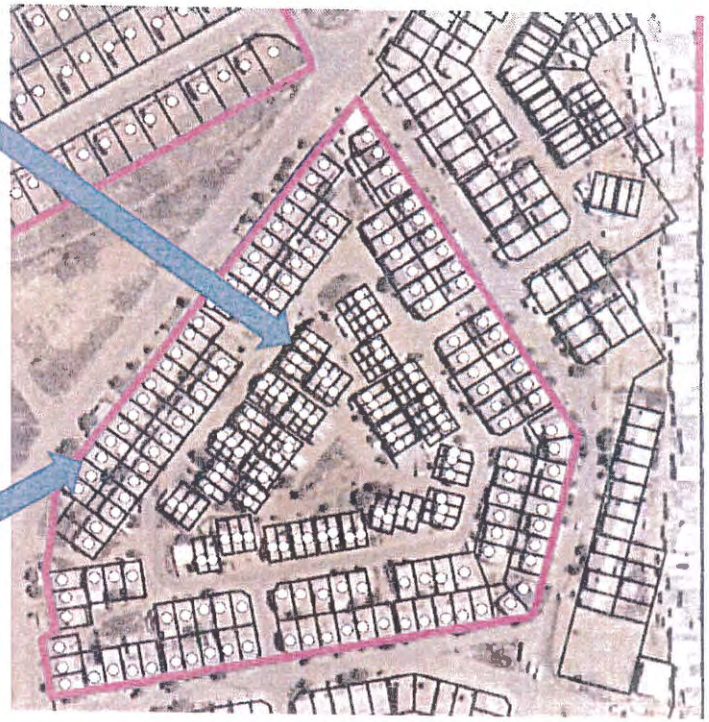
Site and Service: With regards to the Site and Service project it is interesting to note that the Watergang TRA area (number 4 on Figure 7) translates to an average density of 146 units/ha with erf size of 32m² and house size of 26m². This density is higher than that of the Zone 0 informal settlement located to the south-east which is about 133 units/ha.

Given the scarcity of land and limited financial resources available to the SLM, it may be worthwhile to consider initiating the Site and Services projects in the Northern Extension area in line with this configuration. (At 32m²/erf about 2,5 ha of land would be required to accommodate 944 units).

An erf configuration of 3.8m x 12m = 45m² will allow for residents/ households to incrementally upgrade the top structures over an extended period of time and if developed as double storey, it could


TRA Configuration
Erf Size: 32.5m² (5X6.5)
House size: 26m²
Density: 146 du/ha (gross)
4
Informal (21108m²)
House size: 34m²
Density: 133 du/ha
Kayamandi
Density Comparisons
Town Boundaries
Cadastral
Counts
Walk-up BNG Projects
Erf Size – 45.6m²(3.8X12)
House Size–38m² (Double Storey)
Density– (112 du/ha)
3
BNG Projects
Erf Size - 155.94m² (9X18)
House Size- 46m²
Density- 42 du/ha
1
BNG Projects
Erf Size – 81.25m²(6.5X12.5)
House Size– 46m²
Density– (82 du/ha)
2
7

Walk-up BNG Projects 3
Erf Size – 45.6m²(3.8X12)
House Size–38m² (Double Storey)
Density– (112 du/ha)



BNG Projects 2
Erf Size – 81.25m²(6.5X12.5)
House Size– 46m²
Density– (82 du/ha)

achieve building size of 38m² per unit similar to number 3 on Figure 7 (also see examples on photo page following Figure 7).

If developed at an erf size of about 45m² the Site and Service project would require a minimum of about 4,2 hectares of land which represent about 40% of the land parcel earmarked for Site and Service (see number 4 on Figure 6).

The 10 hectares of land earmarked for Social Housing (see number 5 on Figure 6) is earmarked to serve as temporary decanting area while the in-situ upgrading projects in Enkanini and Kayamandi Town Centre are underway.

In the medium to longer term these very well located land parcels can be developed for Social Housing purposes or whatever typology the highest demand is at the time.

ANNEXURE A:

POTENTIAL HOUSING APPROACH AND FUNDING ASPECTS

ANNEXURE A: POTENTIAL HOUSING APPROACH AND FUNDING ASPECTS

1.1 Key Housing Typology Considerations

As the existing density of shacks in the informal settlement is very high and land is limited, the ideal approach to providing the required number of houses implementation of walk-up and/ or multi-storey units, in the form of Community Residential Units (CRUs), BNG walk-up or multi-storey units, and possibly Social Housing units. Free standing BNG and other stand-along units (FLISP/GAP) are not a practical consideration due to the limited availability of space.

1.2 Potential Housing Options and Related Funding Aspects

The monthly earnings of a household determines which type of housing they are eligible for, and is briefly summarised below:

Development Typology	Qualifying Income Bracket
BNG/ RDP	R0 – R800 p.m.
CRU	R800 – R3500 p.m.
Social Housing	R1500 – R7500 p.m.
FLISP/ GAP affordable housing	R7500 – R15 000 p.m.

* Recently changed by NDoHS to R3500 – R15 000 p.m., but yet to be formally confirmed by the Department

As extensive use will be made of walk-ups and similar housing due to the high density required, the following housing options and alternatives would be appropriate:

- BNG double storey row housing;
- BNG walk-up units;
- BNG multi-storey units;
- Community Residential Units (CRUs);
- Social Housing units.

1.2.1 BNG Fully Subsidised Medium and/ or High Density Units

BNG fully subsidised units, as opposed to the usual free standing/ stand-along BNG units, are also available in the following typologies:

- BNG double-storey semi-detached duplex units (medium density);
- BNG double-storey row housing (medium to high density);
- BNG walk-up units, 3-4 storey (medium to high density);
- BNG multi-storey units, 5 or more storeys (high density).

In each case, the National Department of Human Settlements requires that the minimum unit size needs to be at least 40m², and whilst the current grant quantum/ subsidy is R110 947 per unit for the top structures for free standing or duplex style units. For walk-ups and multi-storey units the subsidy

amounts to R138 140 (in Western Cape) per unit. The BNG units are also eligible for a R44 500 subsidy toward the servicing of the stand on which they are situated. The subsidy amounts are made available by the Provincial Department of Human Settlement. It should be remembered that in the case of walk-ups and multi-storey units, they will be Sectional Title in nature.

It should be noted that although BNG walk-ups and multi-storey units are planned for implementation on a number of projects, careful consideration should be given to the ownership, operation and maintenance related to the typology.

1.2.2 Community Residential Units (medium to high density)

Community Residential Units (CRU) aim to facilitate the provision of secure, stable rental tenure for lower income households earning between R800 and R3500 per month who are not able to enter the formal private rental and social housing market. The most common product typologies are:

- Communal accommodation with shared facilities;
- Self-contained flats in walk-ups or medium to high rise blocks;
- New build or refurbishment of existing state flats or hostel conversion.

The grant quantum available depends on factors such as whether the project is a refurbishment or a Greenfield CRU project, and currently varies from around R120 000 per unit (refurbishment of an existing unit) to around R260 000 per unit (new self-contained flat in walk-up structure).

CRU units are public rental stock as they are owned by the relevant municipality. There are no minimum prescribed sizes for the units, but a good living environment is a requirement. Rooms with shared facilities are allowed, but 'old-style' dormitories are not permitted.

It should be noted that a recent communication issued by SHRA indicates that the Greenfield aspect of the CRU Programme is to be merged with social housing, but this has yet to be formally confirmed by the NDoHS.

1.2.3 Social Housing Units (medium to high density)

In the case of social housing the units are typically 3-4 storey walk-ups and usually range in size from a minimum allowed of 30m² (bachelor units) up to 3 bedroom units (45m² or more). One bedroom and two bedroom units are more popular in social housing developments than 3 bedroom units (45m² or more). One bedroom and two bedroom units are more popular in social housing developments than 3 bedroom units due to affordability for the tenants. In a social housing development there are a number of key requirements in terms of the Social Housing Act and accompanying Regulations, including:

- In order to be eligible for social housing, prospective tenants need to be South African citizens who earn between R1500 and R7500 per month (based on current gazetted amounts – these are revised by the Minister of Human Settlements from time to time), otherwise they do not qualify;

- A minimum of 30% of the social housing units provided in a social housing development must be for the primary beneficiaries (i.e. persons or households with a qualifying income of less than or equal to R3,500.00 per month);
- The social housing units must be implemented through a SHRA accredited Social Housing Institution (SHI), who may work together with a private developer if necessary;
- Financing of social housing developments is usually provided via the following main funding sources, namely:
    - RCG (Restructuring Capital Grant) – provided by SHRA through its Social Housing Investment Programme (SHIP) application process. These funds ultimately come from the DoHS budget via National Treasury. RCG is currently provided on a per unit basis at R125 615 per unit. Therefore, if there are 500 social housing units in the development, the RCG amount will be 500 x R125 615 = R 62.8 million;
    - Institutional Top-up Subsidy funding – provided by the Provincial Department of Human Settlements, and amounts to R110 947 per social housing unit;
    - The above two Government provided subsidies therefore amount to R236 562 per social housing unit;
    - Debt funding, typically provided by institutions such as banks or the GPF, etc., and may not be greater than 30% of the total social housing development cost;
    - If necessary, an equity contribution may be necessary to help address any funding shortfall. Other funding such as geotechnical variance funding, where there are adverse dolomitic conditions may also be applicable;
    - The above funding is applied and available in a specific sequence and subject to various conditions which are determined by SHRA. For example, the Institutional Top-up Subsidy may not be received before the first two tranches of the RCG are received (10% and 35% of the total RCG amount respectively), whilst debt funding is utilised last in order to minimise interest and finance charges.

1.3 Summary of Recommended Options

As Kayamandi/ Enkanini/ Northern Extension Area is not within a Restructuring Zone, Social Housing is not a practical solution at present (should a significant portion of the targeted beneficiaries however be suitable for social housing, applying for the area to become a Restructuring Zone should be considered). Therefore, in light of the above, a mixture of medium/ high density BNG units together with CRU units is recommended. For ease of reference, the most pertinent aspects of these are summarised below.

Table: Potential Housing Options – Kayamandi-Enkanini Informal Settlement

Housing Options	BNG (medium density)	BNG (high density)	BNG (high density)	CRU (medium/high density)
Tenure type	Owned	Owned	Owned	Rental
Typology	Double-storey (duplex) row housing	3-4 storey walk-ups	Multi-storey (5 or more storeys)	High density walk-ups (typically 2-4 storeys)
Density	Medium	High	High	High
Target market monthly income	R0 – R3500	R0 – R3500	R0 – R3500	R800 – R3500
Owner	Beneficiary	Beneficiary	Beneficiary	Municipality
Management	Owner	Owner and Body Corporate	Owner and Body Corporate	Municipality, but can outsource to SHI or private firm
Minimum size	40m²	40m²	40m²	No minimum size, but good living environment required
Funding provided by	Provincial DoHS	Provincial DoHS	Provincial DoHS	Provincial DoHS
Grant quantum per unit	R110 947	R138 130	R138 130	R120 000 (refurbishment)
(Top Structure)				- R260 000 (45m² new build)
Serviced stand subsidy per unit	R44 500	R44 500	R44 500	N/A

(* Indications are that Western Cape DoHS will be applying this quantum to new BNG walk-up and multi-storey units. This is still be formally confirmed, as well as whether it will be applied nationally by NDoHS).

2.1 Applicable Subsidies and Grants

The various capital grants and subsidies applicable to infrastructure development are summarised below. Funding is provided for projects is through National Government, Provincial Government and Local Government / Municipalities, as follows (selected grant and other funding sources are shown):

National

Direct funding for SIPs (Strategic Integrated Projects) and other national priority projects such as certain catalytic urban development projects.

Provincial

- Human Settlements Development Grant (HSDG) and other housing related grants provided by DoHS – used for funding top structures and internal services on housing developments in terms of programmes such as the Integrated Residential Development Programme (IRDP) etc.;
- Provincial Roads Maintenance Grant;
- Education Infrastructure Grant (EIG) – used to fund the construction of educational facilities such as new schools;

- Health Facility Revitalisation Grant (HFRG) – used to fund the construction of new health facilities, such clinics and new hospitals.

Metros

- Urban Settlements Development Grant (USDG) – used to fund the construction of bulk and link services for developments within a metropolitan municipality's area of jurisdiction;
- Neighbourhood Development Partnership Grant (NDPG);
- Public Transport Network Grant (PTNG);
- Integrated National Electrification Grant (INEP).

Local Municipalities

- Municipal Infrastructure Grant (MIG) – used to fund the construction of bulk and link services for developments not within a metropolitan municipality i.e. those in local and district municipalities;
- Integrated National Electrification Grant (INEP).

Funding for top structures and internal services on housing projects (HSDG funding) is a typical example of grant funding which requires alignment and administration between different departments and spheres of Government in order to ensure effective implementation.

The HSDG also highlights another important difference between the various grant sources, in that some grants are provided per unit by the relevant transferring department (for example R110 947 subsidy amount per unit for top structures), and some are provided in a lump sum amount (such as USDG, also provided by the Department of Human Settlements) depending on the amount requested and approved.

It can be seen that grant and subsidy funding is provided by different departments and entities that cut across all three tiers of Government. Proper grant alignment and stakeholder co-ordination are therefore very important in order to ensure timeous availability of required funds so that project implementation may continue in a streamlined and continuous manner, thereby avoiding unnecessary project delays and cash flow shortages. A grant such as INEP requires engagement with and co-ordination between a metro / municipality (local government), the Department of Energy (National) and Eskom (a State Owned Entity).

3.1 Funding Alignment

Grant and other funding alignment may be classified into three different categories:

- Primary alignment
- Secondary alignment
- Tertiary alignment

a) Primary alignment

In this category the alignment of grant funding between the three spheres of Government is especially important. Projects should be within municipal SDF, the IDP and other planning documentation. However, spatial targeting for investment is not always aligned due to different priorities of the municipality and Province, which causes non-alignment of grant funding. Four different scenarios may be identified within the primary alignment category:

- *Scenario 1:* Spatial targeting for investment of funds is not aligned with each other, for example Province and the municipality disagreeing with each other about who will implement the project causes funds to not be aligned;
- *Scenario 2:* Either the municipality or Province funds and implements the project by itself in isolation. In this case the municipality or Province might not be aware of the infrastructure the other party is implementing because co-ordinated planning hasn't taken place and the project or infrastructure within the same area could've been integrated, thereby saving costs, time and ensuring more effective project implementation;
- *Scenario 3:* Each party provides a portion of the funds and the project is implemented by either the municipality or Province. For example, USDG is provided by the metro and HSDG by Province, but the two grants fund different infrastructure (services vs top structures) and the sequence in which the funding becomes available is important in order to ensure streamlined project implementation;
- *Scenario 4:* The municipality funds the project and Province supports (or vice-versa).

b) Secondary alignment

In this case there is typically planning alignment in place and the project / development is already in progress, but it may be discovered that other infrastructure such as schools, hospitals etc. become necessary and planning and funding for these items may not have been adequately addressed yet.

Within this category multi-departmental funding and co-ordination is typically required and there is a risk of non-alignment between Government departments who need to be involved. For example, when implementing a new school in the Western Cape, both the Department of Education and the Department of Infrastructure Development or Public Works play key roles, together with the municipality in whose area the school is being implemented. In this category it is also often the case that three spheres of Government need to be aligned.

c) Tertiary alignment

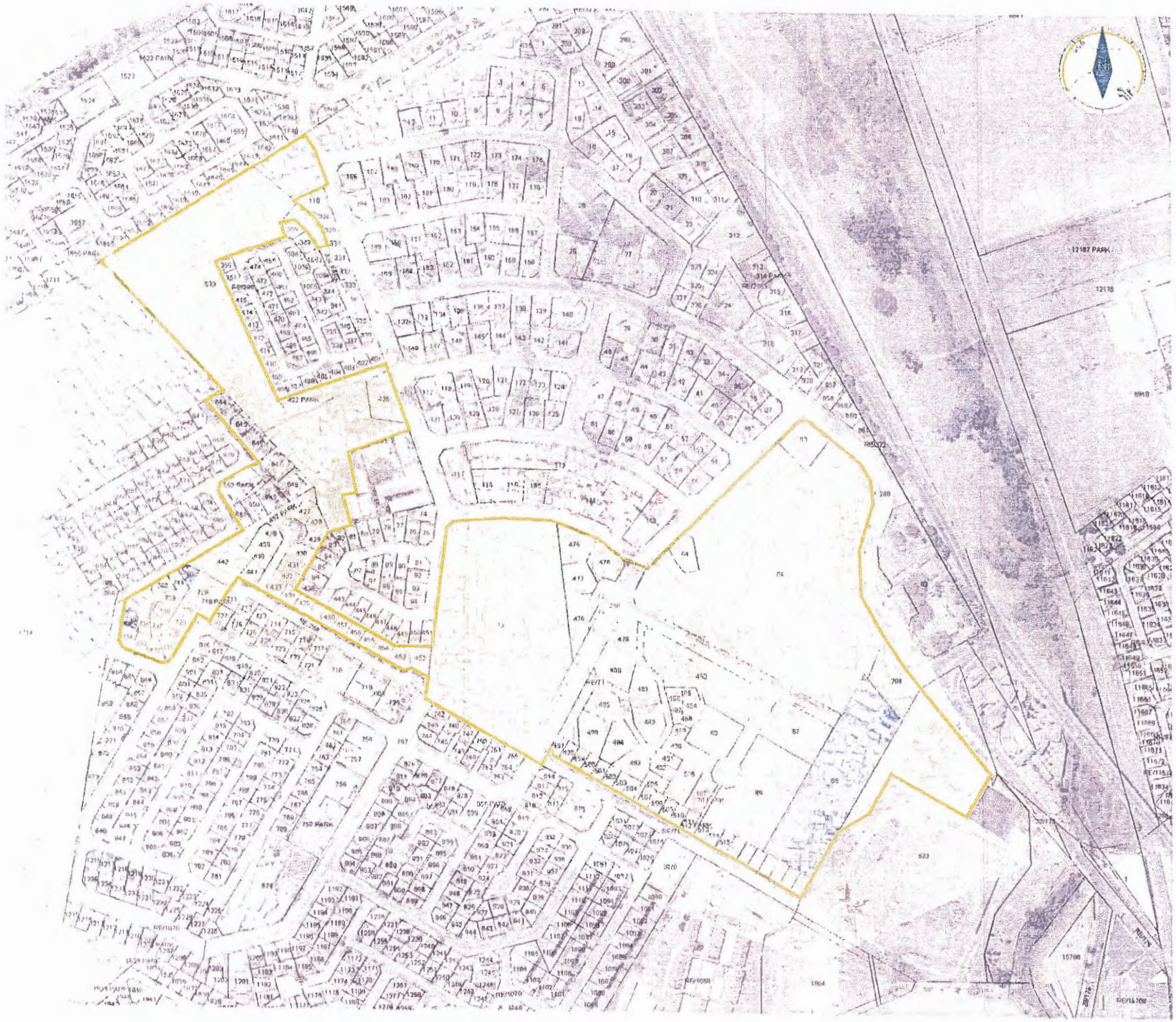
Within this category, alignment between public sector and private sector funding and stakeholders is important and can be a challenge. Debt, private equity and other private funding sources and applicable stakeholders are usually involved in addition to public sector grant funding (which often acts as the catalyst in attracting private sector funding). This category also includes alignment of funding provided by parastatals (e.g. bridging funding provided by DBSA / NHFC etc.) who also provide funding in

addition to that provided by private sector funders, as well as the necessary grant alignment required between these parastatals and the private sector stakeholders. The numerous sources of finance and the different ways in which financial structuring can be done for projects between these public and private stakeholders, as well as the extensive co-ordination required between funding sources and different application and approval processes makes planning for proper grant alignment very important.

The importance of accessing private sector funding is illustrated by the fact that in most large-scale integrated mixed use developments the non-subsidised component (which is funded by the private sector e.g. bonded housing units, private rental housing units etc.) is almost always nearly the same or larger in scope and number than the subsidised component. Government is in many instances therefore able to double the number of houses itself delivers whilst only paying for a portion of the cost thereof. Not only is this a significant cost saving, delivery and leverage mechanism in Government's favour, but the revenue base in terms of rates and taxes collectable is also doubled / significantly increased for the local municipality in whose area the project is located as a result of the additional houses (bonded, private rental) funded by private sector money. Other development components such as commercial, retail and industrial facilities are also normally funded through the private sector, further adding to the benefits noted above.

In order to realise the above benefits and advantages however, it is important that the implementation and funding of the various development components take place in a certain sequence and in terms of a logical approach and strategy for attracting private sector funding. Government should be the first mover by establishing primary bulk services, which can then be used to enable further infrastructure and gearing of public funding and thereby also enabling local economic development and job opportunities. Government therefore realises additional benefits whilst the private sector also meets its aims and objectives.

PLANS



Notation:

- Study Area

Owners:

- Stellenbosch Municipality
- Regional Services Council-Cape Metropole
- N E Ind pty (ltd)
- Methodist Church of Southern Africa
- Private Ownership
- No Information Available

Property ownership was obtained from SerachWorks, a online Title Deed service.

All areas and dimensions are approximate and should be verified by a professional land surveyor.

Drawing:			Plan no.:
Ownership			6
Drawn:	Checked:	Date:	Scale:
WH	JvR	06/12/2017	1:1 500 (A1)
Project no.:		Revision no.:	
3461-P		1	

Kayamandi Town Centre Redevelopment

tv
ARCHITECTS AND TOWN PLANNERS
First Floor - La Gratitude Office Building
97 Dorp Street - Stellenbosch 7600
tel (021) 861 3600
fax (021) 882 8025
e-mail: stel@tv3.co.za
web: www.tv3.co.za

Notation:

- Study Area

Slope Analysis:

- Less than 1:10
- 1:10 - 1:8
- 1:8 - 1:6
- 1:6 - 1:4
- Steeper than 1:4

Survey undertaken by Joubert & Brink Surveys

The 1m contours on which the slope analysis was done were obtained from Joubert & Brink Surveys and were generated using drone technology. The slope analysis was done with basic AutoCad functions and should be verified by a professional land surveyor or civil engineer

All areas and dimensions are approximate and should be verified by a professional land surveyor

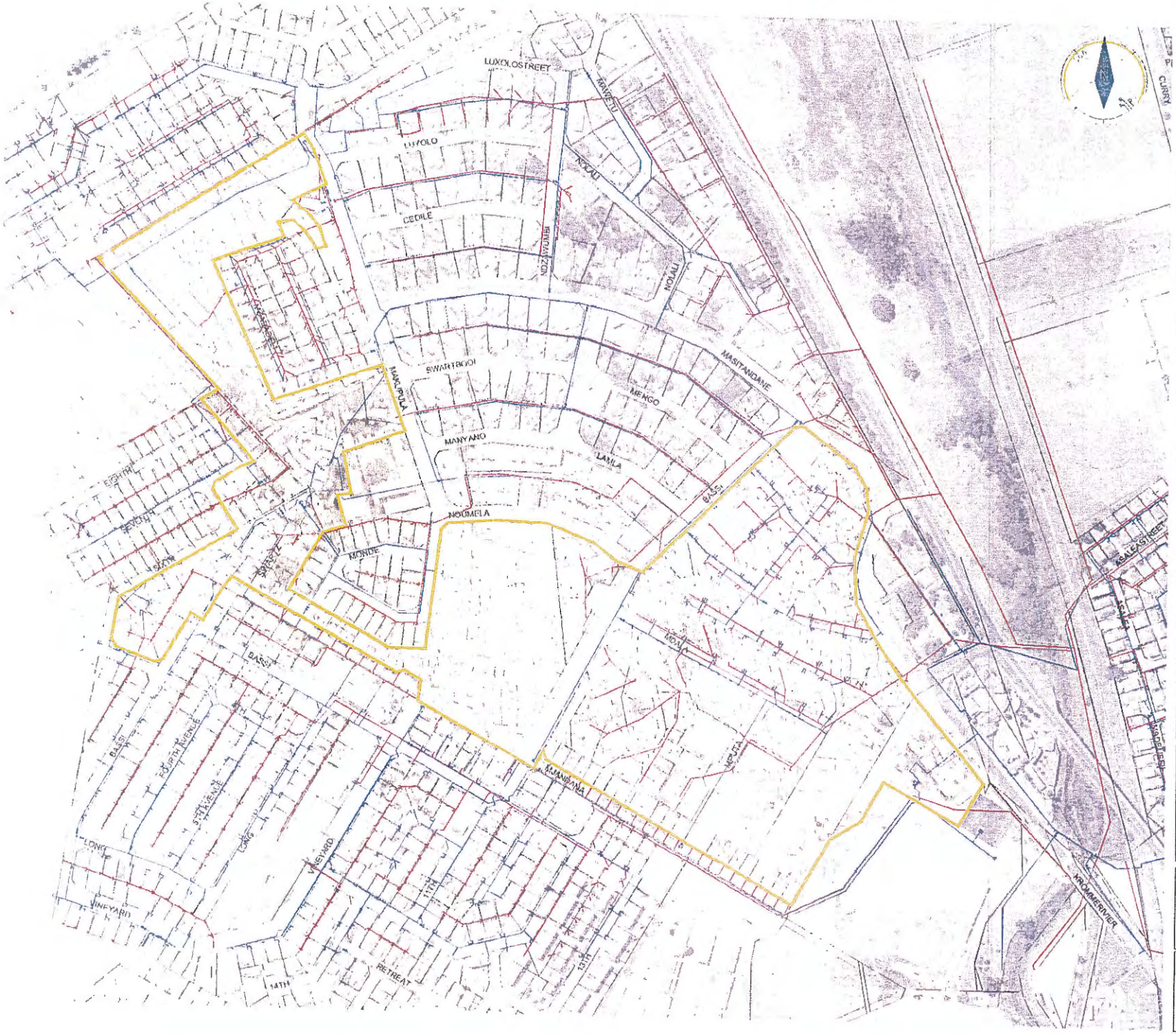
Drawing:			Plan no
Slope Analysis			5
Drawn:	Checked:	Date:	Scale:
WH	JvR	06/12/2017	1:1 500 (A1)
Project no:		Revision no:	
3461-P		1	

Kayamandi Town Centre Redevelopment

tv

First Floor · La Gratitude Office Building
97 Dorp Street · Stellenbosch 7600

ARCHITECTS AND TOWN PLANNERS



Notation:

- Study Area

Existing Infrastructure:

- Sewer Network
- Water Network
- Road Centre Line
- Servitude Pipe Line 4167/1990 (being withdrawn)

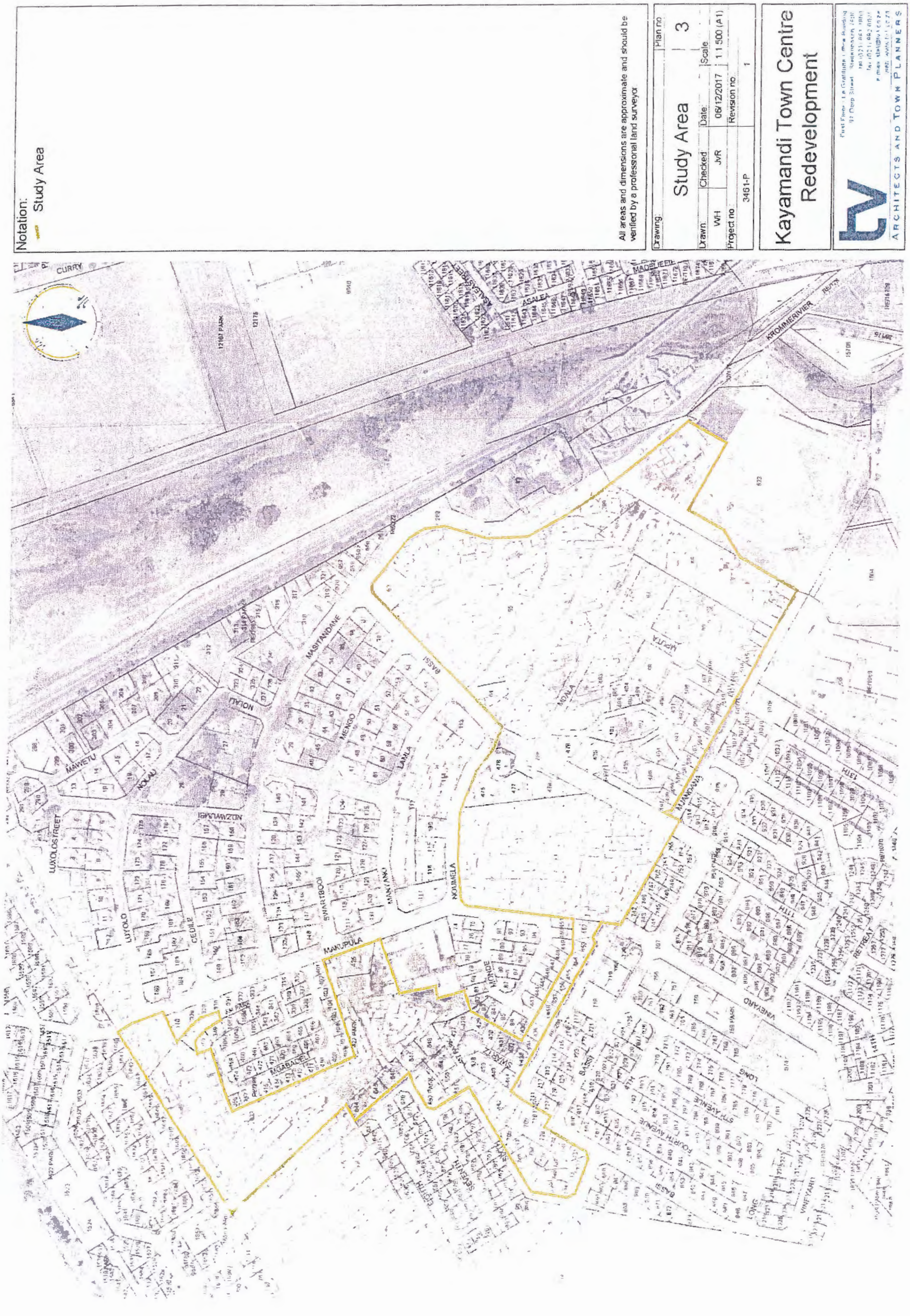
Survey undertaken by Joubert & Brink Surveys

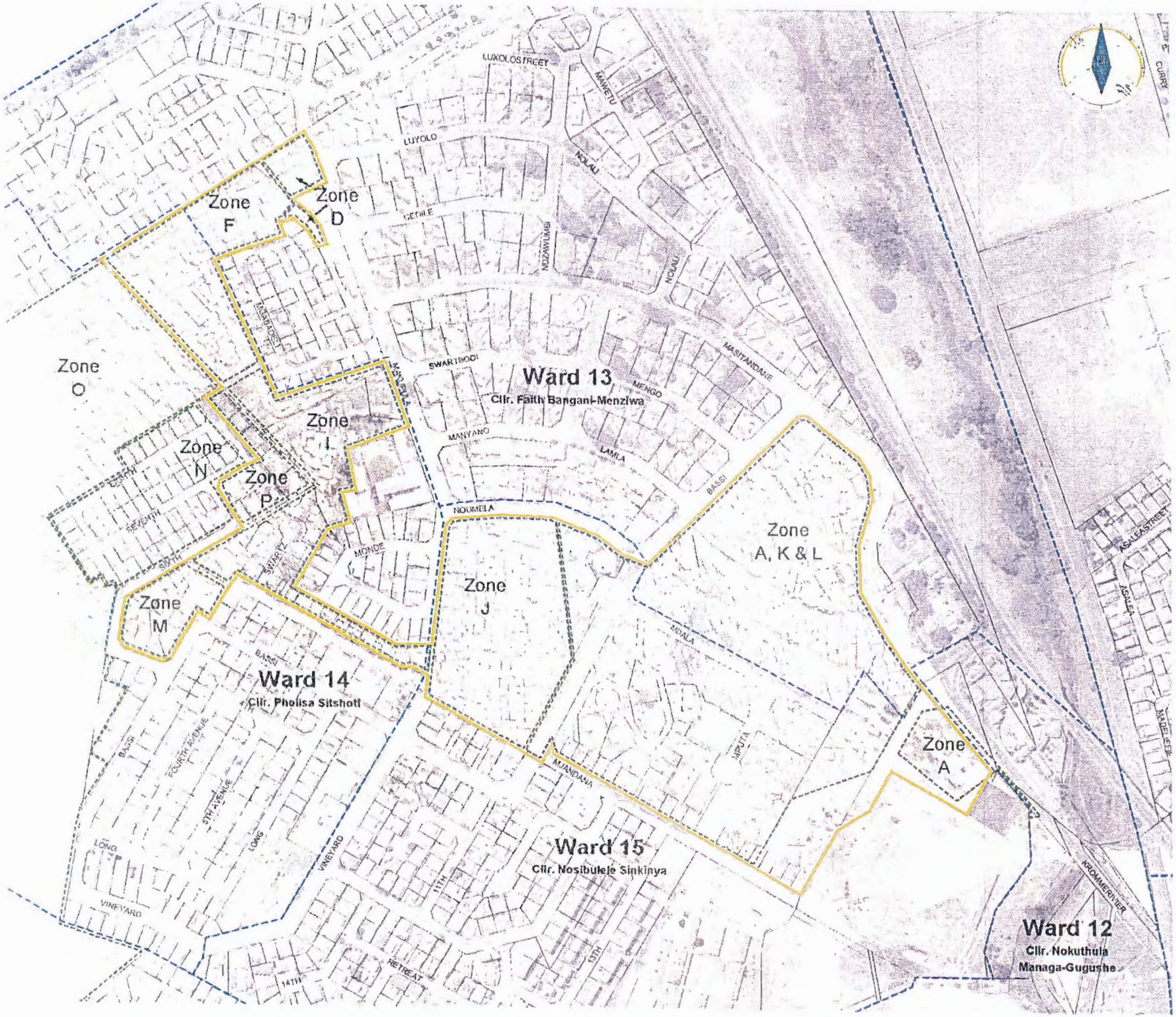
Note: only use listed reference marks/benchmarks no external control points shall be used without the prior consent of the surveyor.
all spot heights and positions are single measurement elements and are therefore subject to error - any point used as a critical design tie point should be reconciled and checked.
this survey includes only visible services and therefore should be checked against local authority as built plans.
this survey includes only visible services which can be opened with hand tools services which are blocked or unable to be opened should be referred to the local authority.
the position of physical boundaries must be correlated with the diagram data as provided by the surveyor general's office.
All areas and dimensions are approximate and should be verified by a professional land surveyor.

Drawing			Plan no
Existing Infrastructure			4
Drawn:	Checked	Date	Scale
WH	JvR	06/12/2017	1:1 500 (A1)
Project no.		Revision no	
3461-P		1	

Kayamandi Town Centre Redevelopment

First Floor - Lanzerac Office Building
97 Dorp Street Stellenbosch 7600
tel (021) 887 3800
fax (021) 887 9812
e-mail stel@tv3.co.za
web www.tv3.co.za
ARCHITECTS AND TOWN PLANNERS


Notation:
Study Area
All areas and dimensions are approximate and should be verified by a professional land surveyor.
Drawing:
Study Area
Plan no
3
Drawn:
WH
Checked
JvR
Date:
06/12/2017
Scale
1:1 500 (A1)
Project no
3461-P
Revision no
1
Kayamandi Town Centre Redevelopment
ARCHITECTS AND TOWN PLANNERS
CURRY
ASALEA
KROMMERIVIER
12167 PARK
MAWETU
NOLALI
LUXOLOSTREET
LUYOLO
CEDILE
MASITANDANE
MENGO
BASSI
LAMLA
SWARTBOOI
MANYANO
NOUMELA
MAKUPULA
MGABADELI
MONDE
SWARTZ
MDALA
MPUTA
VINEYARD
LONG
RETREAT
11TH
13TH
5TH AVENUE
FOURTH AVENUE
SEVENTH



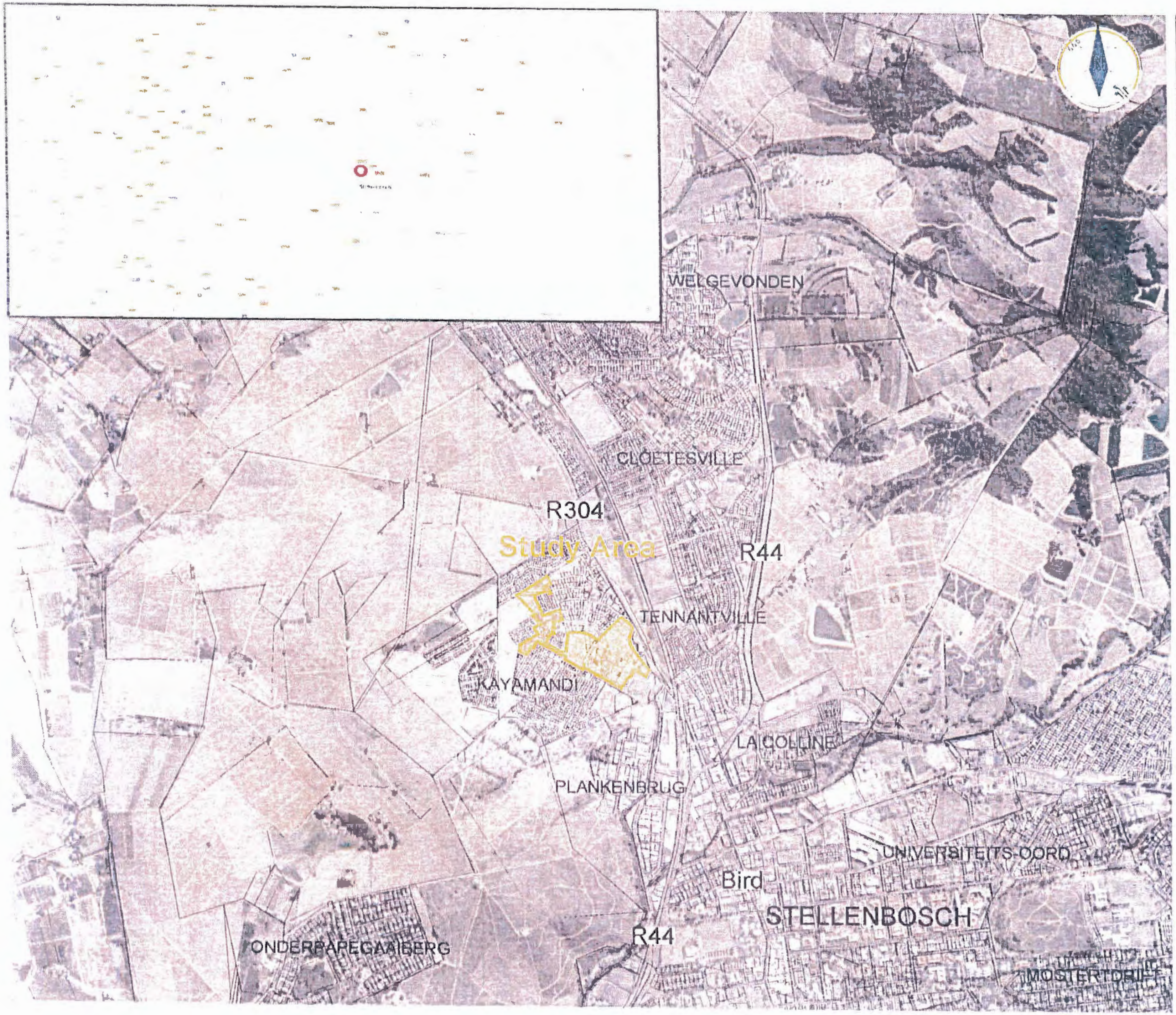
Notation:
- Study Area
- Wards
- Zones

All areas and dimensions are approximate and should be verified by a professional land surveyor

Drawing:			Plan no
Wards and Zones			2
Drawn: WH	Checked: JvR	Date: 06/12/2017	Scale: 1:1 500 (A1)
Project no: 3461-P		Revision no: 1	

Kayamandi Town Centre Redevelopment

ARCHITECTS AND TOWN PLANNERS



Notation:
Study Area

All areas and dimensions are approximate and should be verified by a professional land surveyor

Drawing:			Plan no:
Locality Map			1
Drawn: WH	Checked: JvR	Date: 06/12/2017	Scale: 1:10 000 (A1)
Project no.: 3461-P		Revision no.: 1	

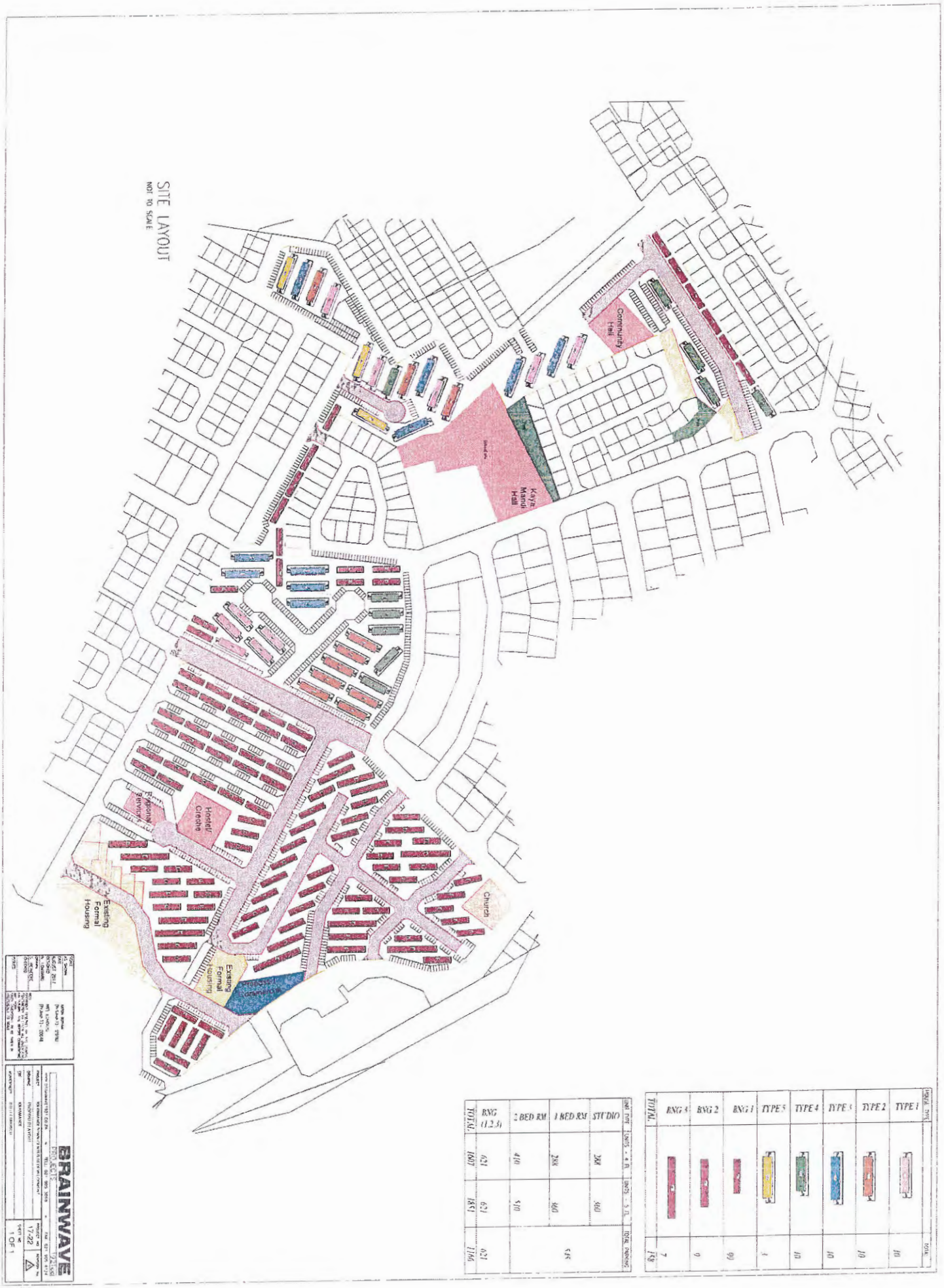
Kayamandi Town Centre Redevelopment

tv ARCHITECTS AND TOWN PLANNERS

First Floor - La Gratitude Office Building
97 Dorp Street - Stellenbosch 7600
tel (021) 861 3800
fax (021) 882 8025
e-mail stel@tv3.co.za
web www.tv3.co.za

ARCHITECT PLANS

PROPOSED LAYOUT PLAN



UNIT TYPE	UNITS - 4 FL	UNITS - 5 FL	TOTAL DWELLINGS
STUDIO	208	360	545
1 BED RM	288	360	
2 BED RM	410	510	
BNG (1,2,3)	621	621	621
TOTAL	1607	1851	1166

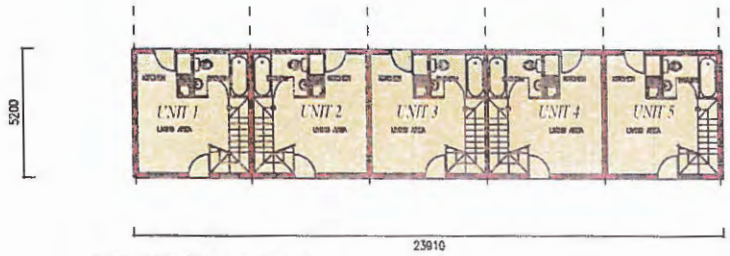
MODAL TYPE	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	BNG 1	BNG 2	BNG 3	TOTAL
TOTAL	10	10	10	10	4	99	9	7	158

ARCHITECT PLANS

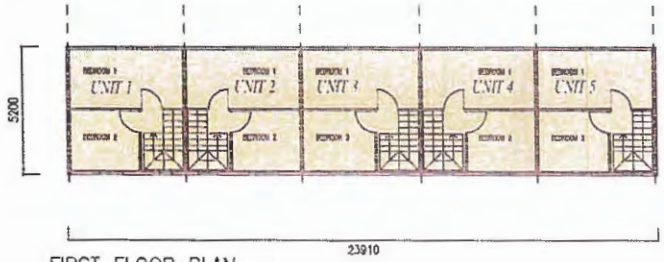
HOUSING TYPOLOGIES

KAYAMANDI TOWN CENTRE REDEVELOPMENT

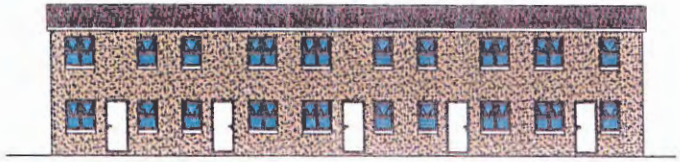
BNG 1 - LIVING UNITS



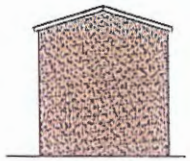
GROUND FLOOR PLAN
SCALE 1:200



FIRST FLOOR PLAN
SCALE 1:200



TYPICAL ELEVATION 1
SCALE 1:200



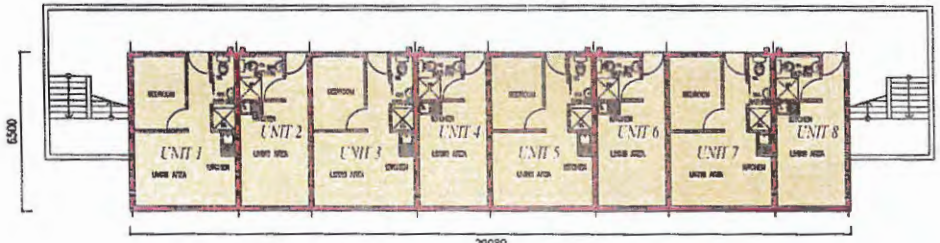
TYPICAL ELEVATION 2
SCALE 1:200

AREAS:	
UNITS	
2 BEDROOM:	5 x 40sq/m = 200sq/m
FOOTPRINT:	124,3sq/m
NUMBER OF BLOCKS:	99

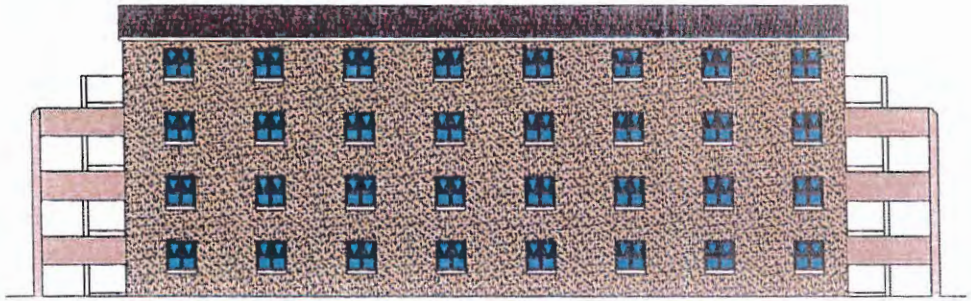
BRAINWAVE PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT

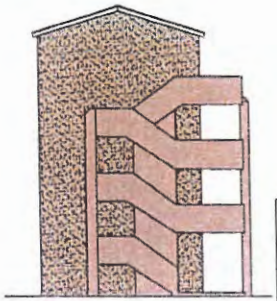
MULTI STOREY LIVING UNITS TYPE 5



FLOOR PLAN X 4
SCALE 1:200



TYPICAL ELEVATION 1
SCALE 1:200



TYPICAL ELEVATION 2
SCALE 1:200

AREAS:

UNITS
STUDIO: 16 x 19,1sq/m = 305,6sq/m
1 BEDROOM: 16 x 27,7sq/m = 443,2sq/m

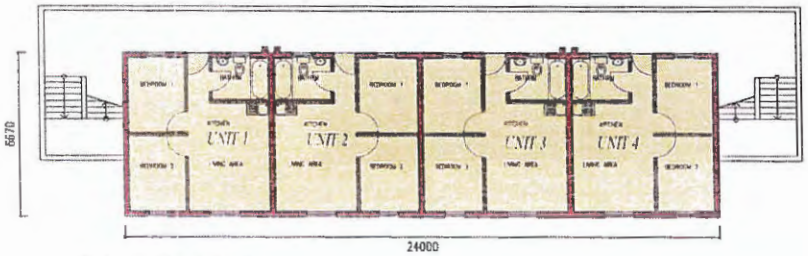
FOOTPRINT: 286,5sq/m

NUMBER OF BLOCKS: 3

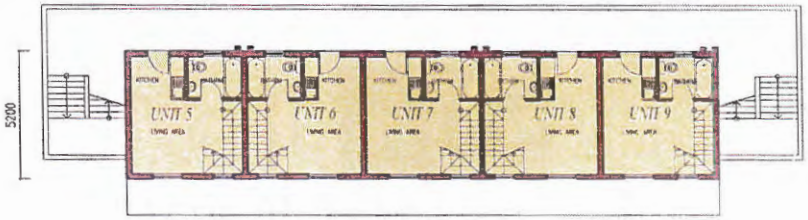
BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT

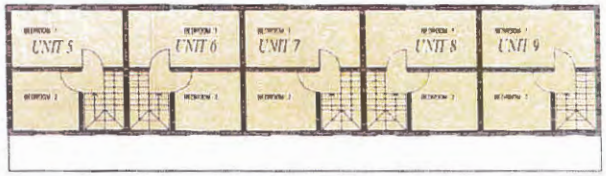
MULTI STOREY LIVING UNITS TYPE 4



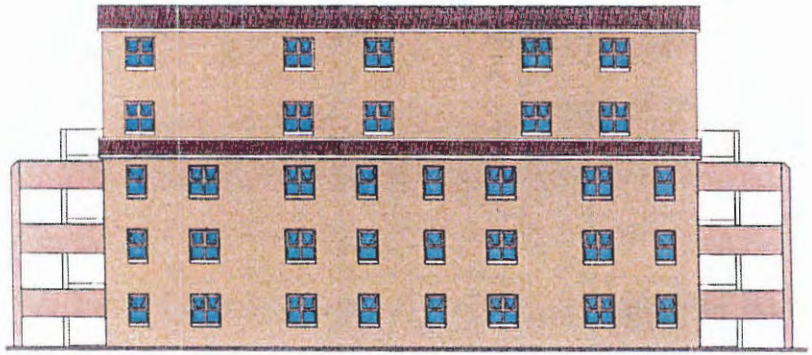
FLOOR PLAN X 3
SCALE 1:200



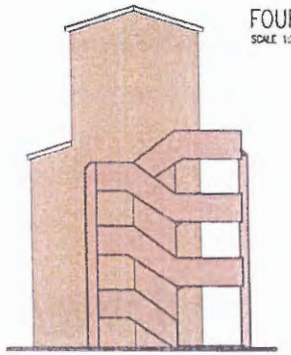
THIRD FLOOR DOUBLE STOREY UNITS
SCALE 1:200



FOURTH FLOOR DOUBLE STOREY UNITS
SCALE 1:200



TYPICAL ELEVATION 1
SCALE 1:200



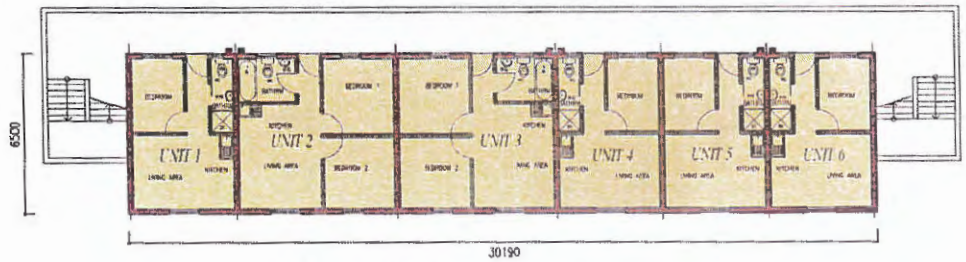
TYPICAL ELEVATION 2
SCALE 1:200

AREAS:		
UNITS:		
2 BEDROOM:	17 x 40sq/m	= 680sq/m
FOOTPRINT:		247,7sq/m
NUMBER OF BLOCKS:		10

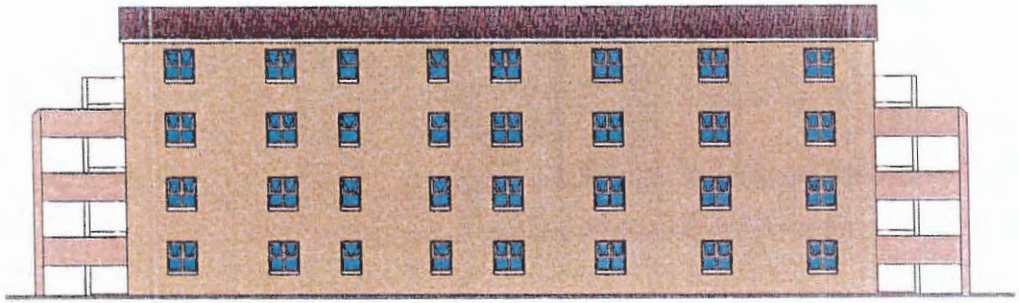
BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT

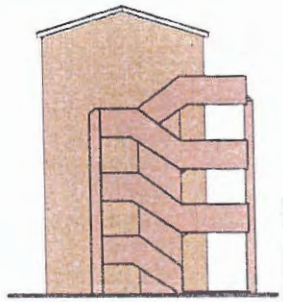
MULTI STOREY LIVING UNITS TYPE 3



FLOOR PLAN X 4
SCALE 1:200



TYPICAL ELEVATION 1
SCALE 1:200



TYPICAL ELEVATION 2
SCALE 1:200

AREAS:

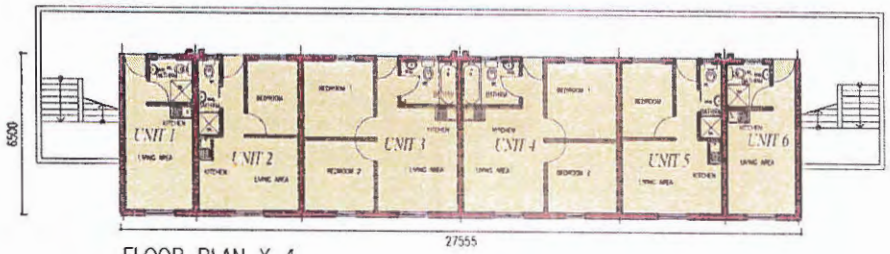
UNITS

1 BEDROOM:	16 x 27,7sq/m = 443,2sq/m
2 BEDROOM:	8 x 40sq/m = 320sq/m
FOOTPRINT:	296sq/m
NUMBER OF BLOCKS:	10

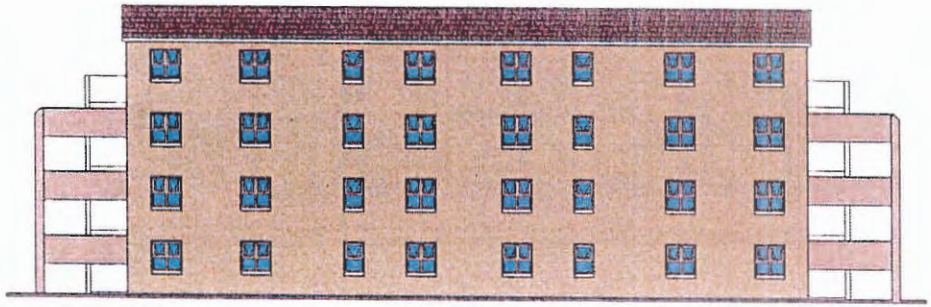
BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT

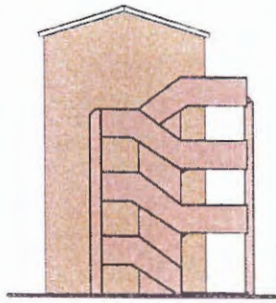
MULTI STOREY LIVING UNITS TYPE 2



FLOOR PLAN X 4
SCALE 1:200



TYPICAL ELEVATION 1
SCALE 1:200



TYPICAL ELEVATION 2
SCALE 1:200

AREAS:

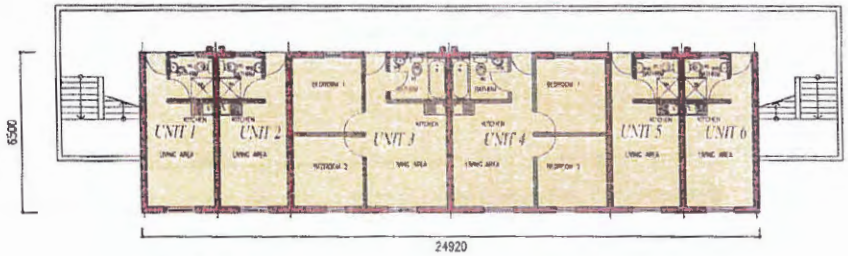
UNITS

STUDIO:	8 x 19,1sq/m = 152,8sq/m
1 BEDROOM:	8 x 27,7sq/m = 221,6sq/m
2 BEDROOM:	8 x 40sq/m = 320sq/m
FOOTPRINT:	273,9sq/m
NUMBER OF BLOCKS:	10

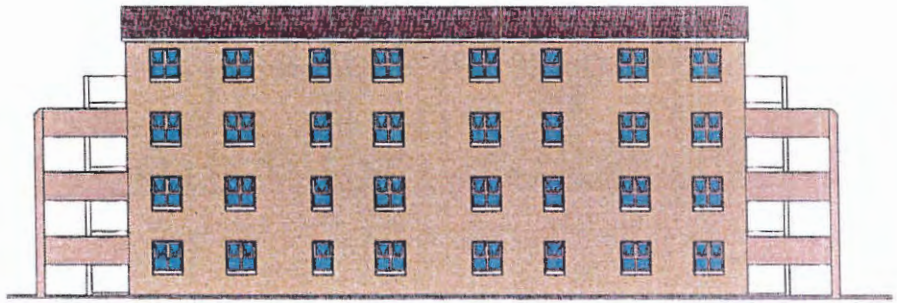
BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT

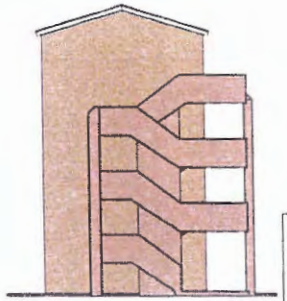
MULTI STOREY LIVING UNITS TYPE 1



FLOOR PLAN X 4
SCALE 1:200



TYPICAL ELEVATION 1
SCALE 1:200



TYPICAL ELEVATION 2
SCALE 1:200

AREAS:

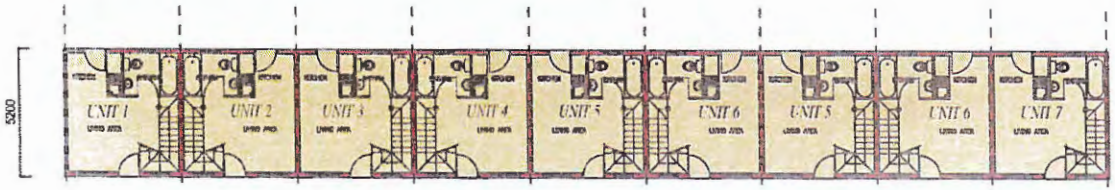
UNITS
STUDIO: 16 x 19.1sq/m = 305,6sq/m
2 BEDROOM: 8 x 40sq/m = 320sq/m
FOOTPRINT: 251,8sq/m

NUMBER OF BLOCKS: 10

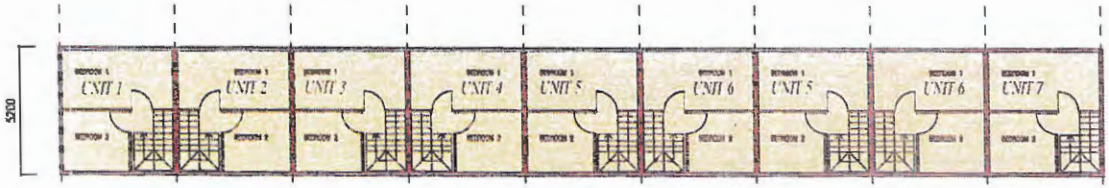
BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT

BNG 3 - LIVING UNITS



GROUND FLOOR PLAN
SCALE 1:200



FIRST FLOOR PLAN
SCALE 1:200

TYPICAL ELEVATION 1
SCALE 1:200

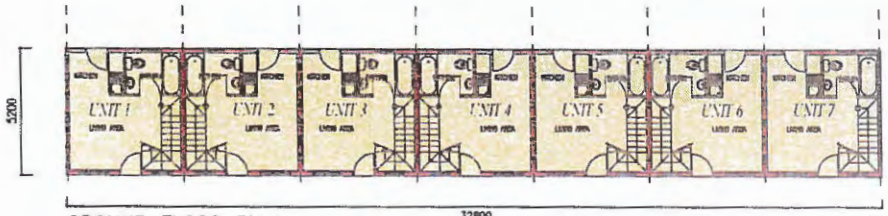
TYPICAL ELEVATION 2
SCALE 1:200

AREAS:	
UNITS	
2 BEDROOM:	9 x 40sq/m = 360sq/m
FOOTPRINT:	219,8sq/m
NUMBER OF BLOCKS:	7

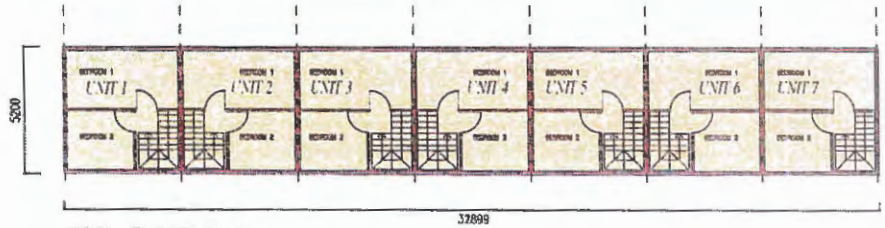
BRAINWAVE PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT

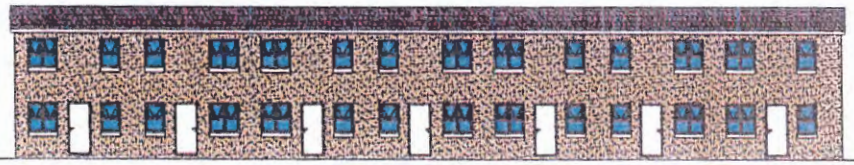
BNG 2 - LIVING UNITS



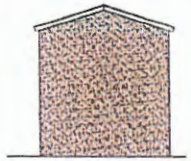
GROUND FLOOR PLAN
SCALE 1:200



FIRST FLOOR PLAN
SCALE 1:200



TYPICAL ELEVATION 1
SCALE 1:200



TYPICAL ELEVATION 2
SCALE 1:200

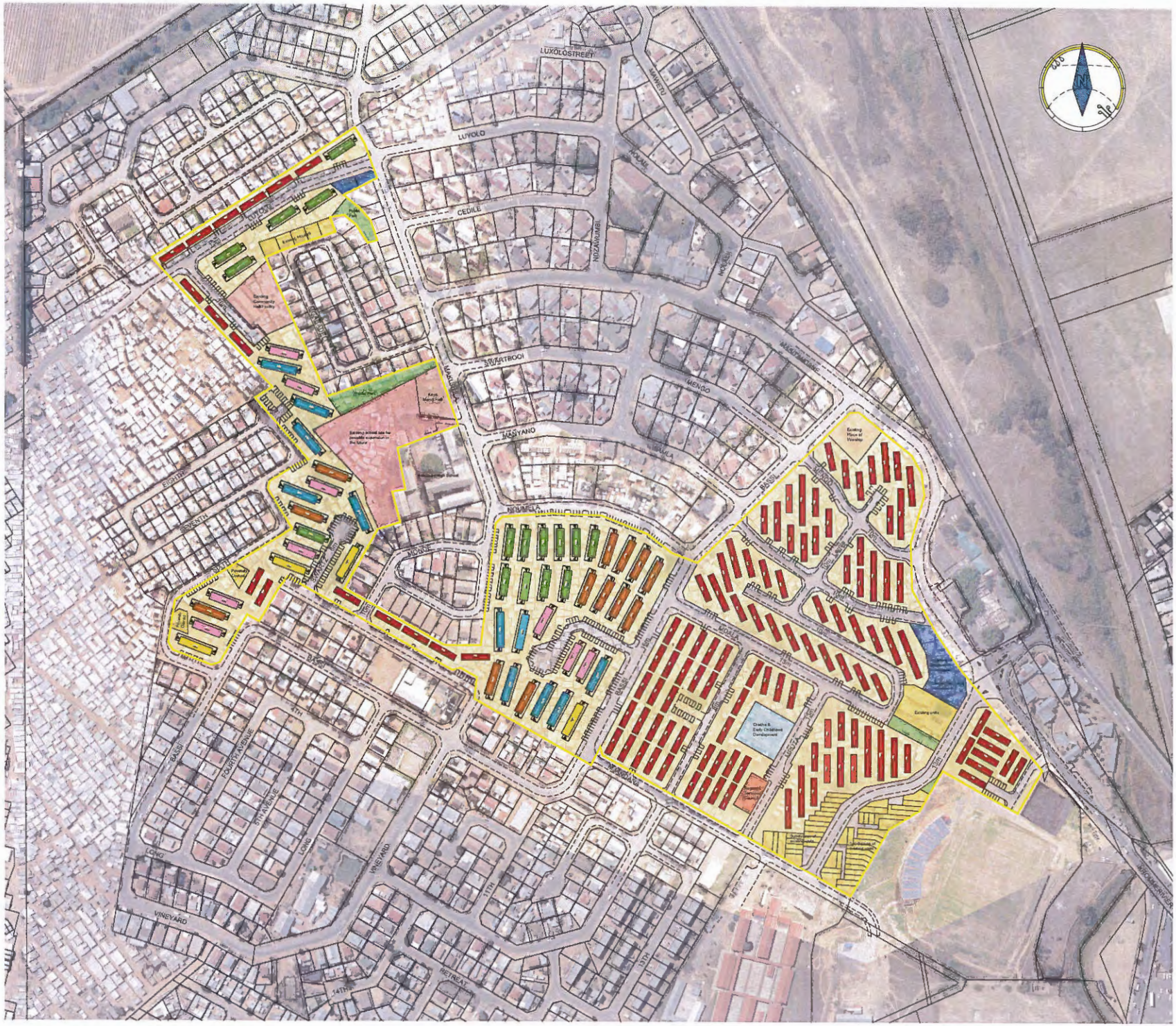
AREAS:

UNITS

2 BEDROOM:	7 x 40sq/m = 280sq/m
FOOTPRINT:	171sq/m
NUMBER OF BLOCKS:	9

BRAINWAVE PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

ANNEXURE 2



Notation:

Study Area (14.58ha)

Typologies	Symbol
Multi Storey Living Units Type 1 four storey - 24 units per block (3 blocks in total) (8 x 2 bed room & 16 x studio)	
Multi Storey Living Units Type 2 four storey - 24 units per block (13 blocks in total) (8 x 2 bed room, 8 x 1 bed room & 8 x studio)	
Multi Storey Living Units Type 3 four storey - 24 units per block (11 blocks in total) (8 x 2 bed room & 16 x 1 bed room)	
Multi Storey Living Units Type 4 five storey - 17 units per block (16 blocks in total) (17 x 2 bed room)	
Multi Storey Living Units Type 5 four storey - 32 units per block (4 blocks in total) (16 x 1 bed room & 16 x studio)	
BNG 1 Living Units 5 Units per block (103 blocks in total) (2 bed room double storey)	
BNG 2 Living Units 7 Units per block (12 blocks in total) (2 bed room double storey)	
BNG 3 Living Units 9 Units per block (7 blocks in total) (2 bed room double storey)	

Land Use	Residential Units	Area (ha)	Residential Density (Units/ha)	Parking Bays
2 Bed Room Units	536	9.77	188 (Net)	474 (Provided @ 0.25bays / unit)
1 Bed Room Units	344			
Studio Units	312			
BNG Living Units	662			
Commercial		0.20		
Church		0.11		
School		0.59		
Community Facilities		0.29		
Regional Services		0.05		
Creche		0.14		
Public Park		0.24		
Public Road		2.48		
Total	1854	13.88	188 (Net)	
Existing Units	55	0.70	78 (Net)	
Grand Total	**1909**	**14.58**	**130 (Gross)**	

This layout is broad based and needs to be further developed on a detailed SDP level.

Civil services and traffic studies done by iCE Group.

Contours, survey detail and aerial photo done by JB Surveys.

Architectural design done by Brainwave Projects 1921. Existing community and institutional facilities were identified via Google Earth, Stellenbosch Municipality's GIS Database and site visits.

All areas and dimensions are approximate and should be verified by a professional land surveyor.

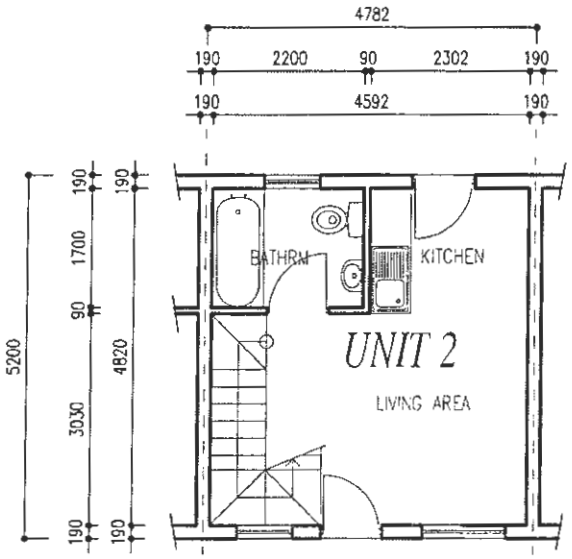
Drawing:			Plan no.:
Conceptual Layout			7
Drawn:	Checked:	Date:	Scale:
WH	JvR	15/11/2017	1:1 500 (A1)
Project no.:			
3461-P			

Kayamandi Town Centre Redevelopment Project

tv3 ARCHITECTS AND TOWN PLANNERS
First Floor • La Gratitude Office Building
97 Dorp Street • Stellenbosch 7600
tel (021) 861 3800
fax (021) 882 8025
e-mail: stel@tv3.co.za
web: www.tv3.co.za

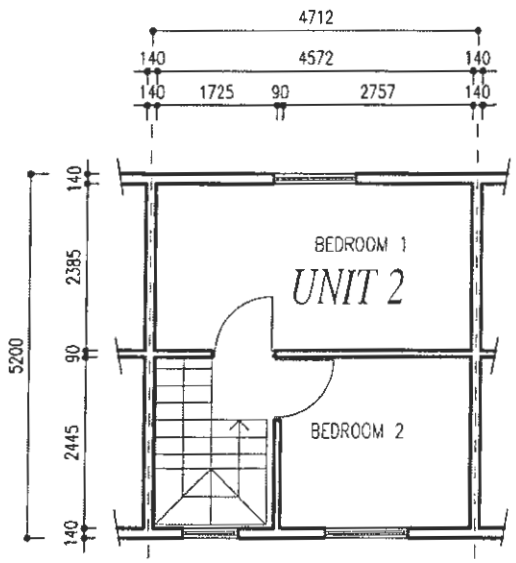
ANNEXURE 3

KAYAMANDI TOWN CENTRE REDEVELOPMENT



GROUND FLOOR PLAN

SCALE 1:100



FIRTS FLOOR PLAN

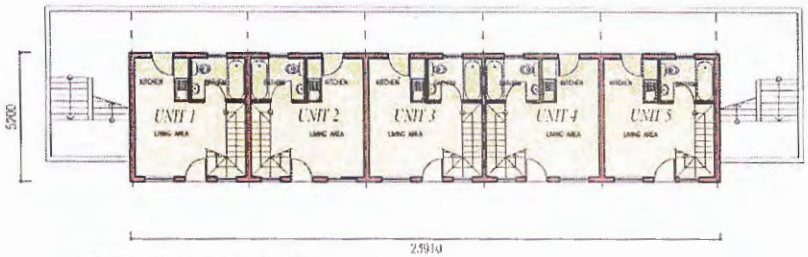
SCALE 1:100

PROJECT UNIT TOTAL:1000 *42sq.m B &G UNIT*

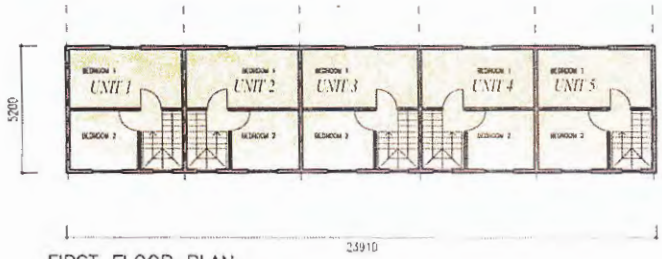
BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT

B & G LIVING UNITS

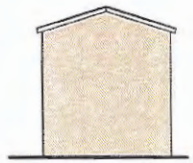


GROUND FLOOR PLAN
SCALE 1:200



FIRST FLOOR PLAN
SCALE 1:200

TYPICAL ELEVATION 1
SCALE 1:200



TYPICAL ELEVATION 2
SCALE 1:200

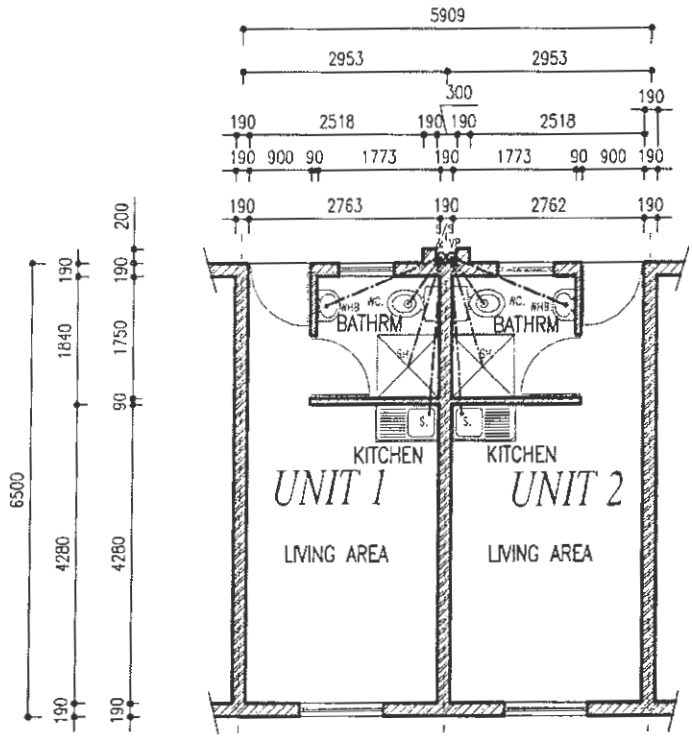
AREAS:

UNITS

2 BEDROOM:	5 x 40sq/m = 200sq/m
FOOTPRINT	211./sq/m
NUMBER OF BLOCKS:	200

BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT



FLOOR PLAN

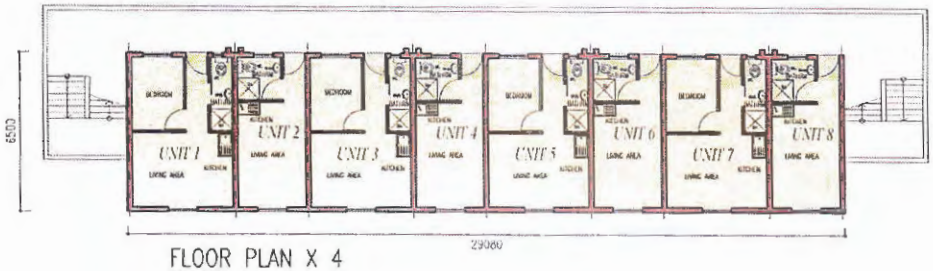
SCALE 1:100

PROJECT UNIT TOTAL:304 *19sq.m STUDIO UNIT*

BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

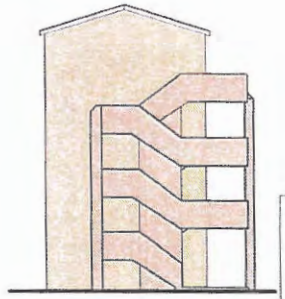
KAYAMANDI TOWN CENTRE REDEVELOPMENT

MULTI STOREY LIVING UNITS TYPE 5



FLOOR PLAN X 4
SCALE 1:200

TYPICAL ELEVATION 1
SCALE 1:200



TYPICAL ELEVATION 2
SCALE 1:200

AREAS:

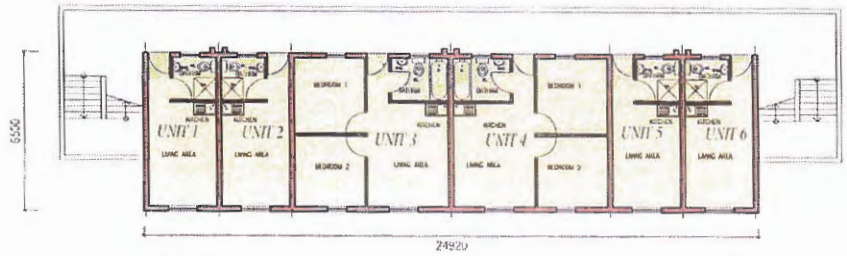
UNITS

STUDIO:	16 x 19.1sq/m	= 305.6sq/m
1 BEDROOM:	16 x 27.7sq/m	= 443.2sq/m
FOOTPRINT:		286.5sq/m
NUMBER OF BLOCKS:		4

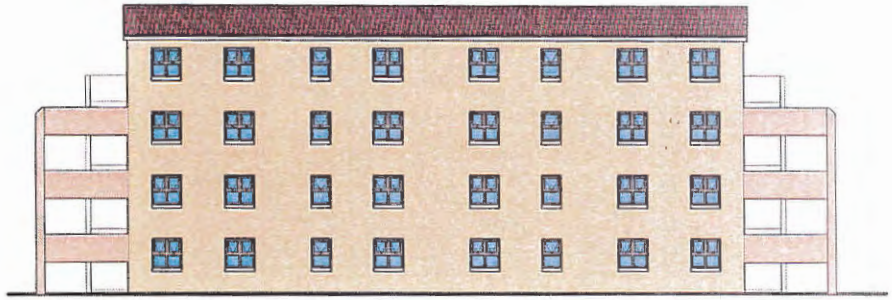
BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT

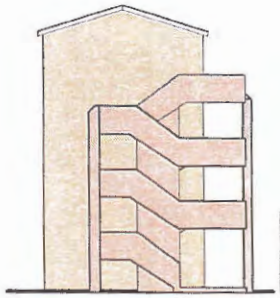
MULTI STOREY LIVING UNITS TYPE 1



FLOOR PLAN X 4
SCALE 1:200



TYPICAL ELEVATION 1
SCALE 1:200



TYPICAL ELEVATION 2
SCALE 1:200

AREAS:

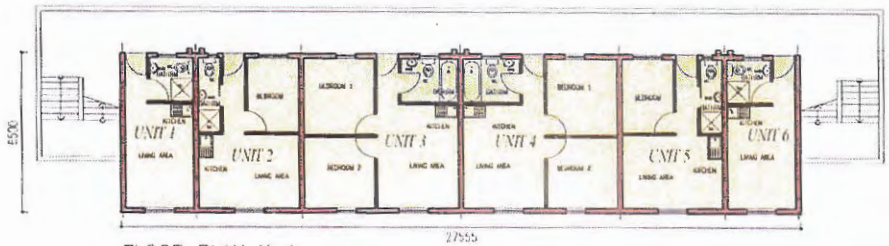
UNITS

STUDIO:	16 x 19.1sq/m = 305,6sq/m
2 BEDROOM:	8 x 40sq/m = 320sq/m
FOOTPRINT:	251,8sq/m
NUMBER OF BLOCKS:	10

BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

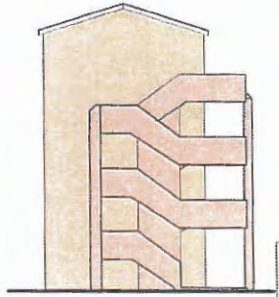
KAYAMANDI TOWN CENTRE REDEVELOPMENT

MULTI STOREY LIVING UNITS TYPE 2



FLOOR PLAN X 4
SCALE 1:200

TYPICAL ELEVATION 1
SCALE 1:200



TYPICAL ELEVATION 2
SCALE 1:200

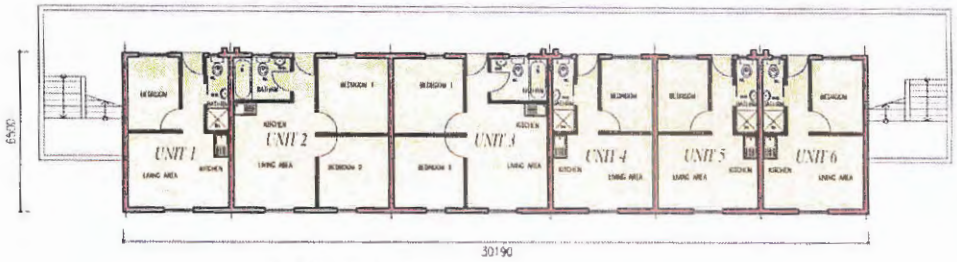
AREAS:

UNITS	
STUDIO:	8 x 19,1sq/m = 152,8sq/m
1 BEDROOM:	8 x 27,7sq/m = 221,6sq/m
2 BEDROOM:	8 x 40sq/m = 320sq/m
FOOTPRINT:	273,9sq/m
NUMBER OF BLOCKS:	10

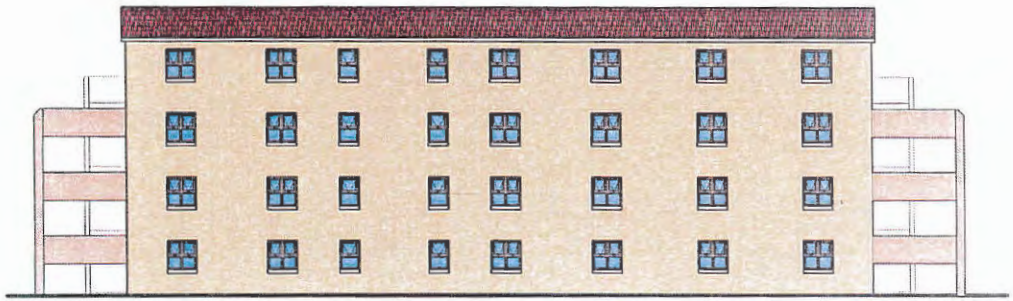
BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT

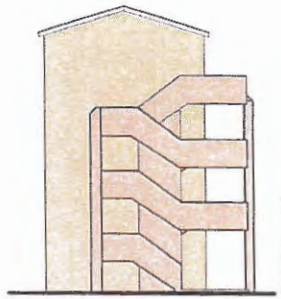
MULTI STOREY LIVING UNITS TYPE 3



FLOOR PLAN X 4
SCALE 1:200



TYPICAL ELEVATION 1
SCALE 1:200



TYPICAL ELEVATION 2
SCALE 1:200

AREAS:

UNITS		
1 BEDROOM:	16 x 27,7sq/m =	443,2sq/m
2 BEDROOMS	8 x 40sq/m =	320sq/m
FOOTPRINT:		796sq/m
NUMBER OF BLOCKS:		10

BRAINWAVE
PROJECTS 1921cc
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6124

KAYAMANDI TOWN CENTRE REDEVELOPMENT
MULTI STOREY LIVING UNITS TYPE 4
FLOOR PLAN X 3
SCALE 1:200
2400
6270
UNIT 1
UNIT 2
UNIT 3
UNIT 4
UNIT 5
UNIT 6
UNIT 7
UNIT 8
UNIT 9
5200
THIRD FLOOR DOUBLE STOREY UNITS
SCALE 1:200
FOURTH FLOOR DOUBLE STOREY UNITS
SCALE 1:200
TYPICAL ELEVATION 2
SCALE 1:200
TYPICAL ELEVATION 1
SCALE 1:200
BRAINWAVE
PROJECTS
19216c
WWW.BRAINWAVE1921.CO.ZA • TELL: 021 905 3068 • FAX: 021 905 6174
AREAS:
UNITS:
2 BEDROOM: 17 x 40sq/m = 680sq/m
FOOTPRINT: 247.7sq/m
NUMBER OF BLOCKS 10

5.6	**INFRASTRUCTURE: (PC: CLLR J DE VILLIERS)**

5.6.1	**SECTION 78(2) REPORT FOR THE EXPANSION OF THE SOLID WASTE LANDFILL SITE**

Collaborator No:
IDP KPA Ref No:
Meeting Date: ***14 March 2018***

1. SUBJECT

SECTION 78(2) REPORT FOR THE EXPANSION OF THE SOLID WASTE LANDFILL SITE

2. PURPOSE

To report via a Section 78(2) Report on the Section 78(1) investigation in to expansion of the Solid Waste Landfill site at the Stellenbosch Devon Valley Landfill Site

3. DELEGATED AUTHORITY

Municipal Council.

Schedule 5B of the Constitution of SA, determines that "Refuse removal, refuse dumps and solid waste disposal" ("refuse dump" and "landfilling" being synonymous) is a Local Government competence and Section 77 of the Municipal Systems Act .

4. EXECUTIVE SUMMARY

The current landfill site for solid waste within the Devon Valley site of Stellenbosch Municipality is rapidly nearing the end of its licensed capacity. It is estimated that only a further 18 months of capacity remain. Stellenbosch has two options to proceed and that is the transporting of Waste to the Vissershok facility of City of Cape Town or to develop a neighbouring portion of ground upon which High Voltage lines of Eskom are running. In order to consider this option, which entails that Stellenbosch will significantly expand its landfill site, it was determined to conduct a MSA Section 78(1) assessment. Council resolved that this may be done and this process has now been completed.

The two internal options were assessed and it was found that the extension of the site and moving of Eskom lines and equipment as well as the operation of the site, would cost the Municipality an amount of transporting of waste to Vissershok would cost the Municipality an estimated amount of R115 000 000 over the expected useful life of 10 years for this site. On the other hand, the transporting of waste to Vissershok, would cost the Municipality R1 074 000 000 over the period of 10 years. It is therefore much more economically advantageous to opt to expand the current site and also to continue with the business as usual. Council is requested to approve this scenario as the way forward.

5. RECOMMENDATIONS

(a) that this report be noted;

(b) that Council notes the report on the Devin Valley Solid Waste Landfill site and the plans to expand this site through the request to Eskom to move high voltage circuitry in order to open space for the expansion of the current Landfill site;

(c) that Council accepts that all the requirements of Section 78(1) in terms of investigating the feasibility of expanding the current landfill site have been satisfactorily attended to;

(d) that Council, in terms of the Municipal Systems Act, Act 32 of 200, as amended, Section 78(2), accepts the scenario to continue with the planning and implementation of the internal mechanism of expanding the current landfill site to the area south west of the current site;

(e) that the Director: Infrastructure Services be tasked to negotiate a process of moving the Eskom 66kV lines to a position away from the current landfill site and expansion site thereof;

(f) that any Town Planning-, Environmental-, licensing and any other legislative requirement be adhered to; and

(g) that a report indicating accurate costing, licensing and other related matters be submitted to Council once they are known, at which time Council will consider a final approval of the expansion of this landfill site.

6. DISCUSSION / CONTENTS

6.1 Background

As has been reported frequently in the past, the current Solid Waste Landfill Site is fast reaching its licensed capacity. The site is expected to run out of licensed air space by 2019. Various scenarios have been planned for the future of Solid Waste landfilling (final part of waste disposal), none of which has reached an amicable way forward to date. However another solution to expand the current landfill site has been proposed.

At the Council meeting of 27 September 2027 it was proposed that this landfill site be expanded to the part of the property which currently houses Eskom High Voltage lines.

This site is currently used by Eskom and it was found that the cost to remove the Eskom lines and equipment will be very much lower than the saving to Stellenbosch for basically any other alternative to cater for the removal of waste after 2019. It is expected that soil and license conditions would be favourable and that an extension of operational life, exceeding 10 years, can be obtained.

The Schedule 5B of the Constitution of SA, determines that "Refuse removal, refuse dumps and solid waste disposal" ("refuse dump" and "landfilling" being synonymous) is a Local Government competence and Section 77 of the MSA determines:

"*77. Occasions when municipalities must review and decide on mechanisms to provide municipal services.—A municipality must review and decide on the appropriate mechanism to provide a municipal service in the municipality or a part of the municipality—*

(a) in the case of a municipal service provided through an internal mechanism contemplated in section 76, when—

(i) an existing municipal service is to be significantly upgraded, extended or improved;

(ii) ……..."

As landfilling has become a severe problem and, as it is a Municipal Competence, the Act requires that a Section 78 process be performed to officially determine the best way forward.

Council decided on 27 September 2028, that a Section 78(1) process be performed which is an investigation on how the Municipality can expand the landfill site utilizing internal means. Section 78(1) requires the municipality to do a viability exercise on an internal method of delivering the services of waste disposal by landfills. This study will be used to coordinate and consolidate all previous studies into one report and presentation.

In considering internal mechanisms of landfilling, we only have two possibilities currently:

a. Transporting waste to another landfill site, currently the landfill site of the City of Cape Town, or

b. Expanding the current landfill site onto the proposed site upon which the Eskom 66kV lines are.

6.2 Discussion

6.2.1 Requirements of the Section 78(1) process.

The Municipal Systems Act, Act 32 of 200, as amended, requires the following under Section 78(1):

"*Criteria and process for deciding on mechanisms to provide municipal services.—*

(1) When a municipality has in terms of section 77 to decide on a mechanism to provide a municipal service in the municipality or a part of the municipality, or to review any existing mechanism—

(a) it must first assess—

(i) the direct and indirect costs and benefits associated with the project if the service is provided by the municipality through an internal mechanism, including the expected effect on the environment and on human health well-being and safety;

(ii) the municipality's capacity and potential future capacity to furnish the skills, expertise and resources necessary for the provision of the service through an internal mechanism mentioned in section 76 (a);

(iii) the extent to which the re-organisation of its administration and the development of the human resource capacity within that administration as provided for in sections 51 and 68, respectively, could be utilised to provide a service through an internal mechanism mentioned in section 76 (a);

(iv) the likely impact on development, job creation and employment patterns in the municipality, and

(v) the views of organised labour; and

(b) it may take into account any developing trends in the sustainable provision of municipal services generally."

These requirements will be dealt with separately below:

6.2.2 The direct and indirect costs and benefits associated with the project if the service is provided by the municipality through an internal mechanism, including the expected effect on the environment and on human health well-being and safety

a. Direct and Indirect Cost and Benefits

It is expected that the current landfill site scenario will run out of capacity in 15 months' time. Should no further measures be taken the waste will have to be moved to the City of Cape Town site at Vissershok. The cost to do this will include the gate fees at Vissershok plus the measures to cart the waste from Stellenbosch to Vissershok which is situated on N7 road to Malmesbury. In order to cart the waste a fleet of long-hall trucks will need to be procured since the normal waste compaction trucks are not designed to cart waste over a long distance and would be counterproductive since the time consumed to cart waste will mean that no waste could be collected at Stellenbosch.

Stellenbosch currently generates about 115 000 tons of landfill waste.

i) The cost to expand the current site is estimated as follows:

Nr	Expenditure	Value
1	Project to move Eskom Lines out of Landfill Site	R52 000 000
2	Cost to prepare new extended site	R32 000 000
3	Other (Administration, licensing)	R1 000 000
4	Total	R85 000 000

Maintenance cost of the expanded site is expected to be R3 000 000 per annum. Over 10 years this would be R30 000 000.

ii) The cost to transfer waste to Vissershok is estimated at as follows:

Nr	Expenditure	Rate	R/annum
1	CoCT Gate Fees	R624.00/ton	R71 760 000
2	Long-Haul	R250/ton	R28 750 000
3	Build and Operate Transfer Station	R60/ton	R690 000
4	Total	R934/ton	R107 410 000
5	After 10 Years		R1 074 100 000

ii) The comparison of cost is reflected as below. All costs are expressed I a 10 year period as this is the life expectancy of the air space available at current operation procedures.

Nr	Option	Cost over 10 Years
1	Transporting Waste to a Remote Site	R1 074 100 000
2	Expanding Current Site	R115 000 000
3	Total savings over 10 years if Option 2 is followed instead of Option 1	R959 100 000

It is therefore far more favourable to expand the current landfill site.

b. *Expected effect on the environment and on human health well-being and safety*.

Since uncontrolled waste is very unwanted in terms of environment human health and wellbeing, the expansion of the waste landfill will hold a better environmental and human health condition than transporting the waste long distances. The shorter distances travelled would mean that more waste can rapidly be transported should such occasions last. Landfilling is totally under the control of the Municipality.

It is therefore more environmentally friendly, better for human health to landfill waste locally than transporting longer distances. Less vehicles to be treated and less staff. There would be no increase or decrease of safety between the possibilities.

In terms of the expected effect on the environment and on human health well-being and safety it would therefore be better to expand the current landfill site than it would be to transport waste over a long distance.

c. *The municipality's capacity and potential future capacity to furnish the skills, expertise and resources necessary for the provision of the service through an internal mechanism mentioned in section 76* (a).

Since the municipality already provides a landfilling service and merely would like to expand the landfilling site, the actual service conditions would remain the

same. There are therefore now additional arrangements needed in terms of capacity to extend the landfilling site

In terms of capacity there is an existing capacity that would merely continue with landfilling operations.

There is therefore no impact on the current capacity.

d. *the extent to which the re-organisation of its administration and the development of the human resource capacity within that administration as provided for in sections 51 and 68, respectively, could be utilised to provide a service through an internal mechanism mentioned in section 76 (a);*

Section 51:

51. Organisation of administration.—A municipality must within its administrative and financial capacity establish and organise its administration in a manner that would enable the municipality to—

(a) be responsive to the needs of the local community;

(b) facilitate a culture of public service and accountability amongst its staff;

(c) be performance orientated and focused on the objects of local government set out in section 152 of the Constitution and its developmental duties as required by section 153 of the Constitution;

(d) ensure that its political structures, political office bearers and managers and other staff members align their roles and responsibilities with the priorities and objectives set out in the municipality's integrated development plan;

(e) establish clear relationships, and facilitate co-operation, co-ordination and communication, between—

(i) its political structures and political office bearers and its administration;

(ii) its political structures, political office bearers and administration and the local community;

(f) organise its political structures, political office bearers and administration in a flexible way in order to respond to changing priorities and circumstances;

(g) perform its functions—

(i) through operationally effective and appropriate administrative units and mechanisms, including departments and other functional or business units; and

(ii) when necessary, on a decentralised basis;

(h) assign clear responsibilities for the management and co-ordination of these administrative units and mechanisms;

(i) hold the municipal manager accountable for the overall performance of the administration;

(j) maximise efficiency of communication and decision-making within the administration;

(k) delegate responsibility to the most effective level within the administration;

(l) involve staff in management decisions as far as is practicable; and

(m) provide an equitable, fair, open and non-discriminatory working environment.

Due to the current operation that is already in existence and that the expansion of the site, merely means that the current operations, merely shift the different sells, all of the above mentioned items, from (a) to (m) are conformed with, but would not be the case of waste has to be transported to a different long distance site.

It is therefore more favourable to expand the current site than to transport over a long distance and the current operations will merely continue with word as envisaged in Section 51.

Section 68:

68. Capacity building.—

(1) A municipality must develop its human resource capacity to a level that enables it to perform its functions and exercise its powers in an economical, effective, efficient and accountable way, and for this purpose must comply with the Skills Development Act, 1998 (Act No. 81 of 1998), and the Skills Development Levies Act, 1999 (Act No. 28 of 1999).

(2) A municipality may in addition to any provision for a training levy in terms of the Skills Development Levies Act, 1999, make provision in its budget for the development and implementation of training programmes.

(3) A municipality which does not have the financial means to provide funds for training programmes in addition to the levy payable in terms of the Skills Development Levies Act, 1999, may apply to the Sector Education and Training Authority for local government established in terms of the Skills Development Act, 1998, for such funds

The whole Section 68 will be conformed with if actual operations stay the same.

It is therefore more favourable to expand the current site than to transport over a long distance and the current operations will merely continue with word as envisaged in Section 68.

e. The likely impact on development, job creation and employment patterns in the municipality,

Again no changes will be experienced if the current site is expanded, but will change if we have to transport waste elsewhere.

It is therefore more favourable upon development, job creation and employment patterns to merely expand the landfilling than to transport waste over long distances.

f. The views of organised labour.

By expanding the landfilling the current staff establishment will remain as is, whereas transporting the waste over a long distance would mean that the remote site will not be under the control local organized labour. Labour would therefore prefer the local option rather than the long-distance option

It is therefore more favourable for organized labour to choose the status quo option into labour rather than the long-distance option

6.2.2 Requirements in terms of Section 78(2)

Section 78(2) states:

(2) After having applied subsection (1), a municipality may—

(a) decide on an appropriate internal mechanism to provide the service; or

(b) before it takes a decision on an appropriate mechanism, explore the possibility of providing the service through an external mechanism mentioned in section 76 (b).

a. It is estimated that the option to expand the landfill operation would create space to landfill waste for at least another …….. 10 years.

b. The estimated savings in landfilling locally rather than long-distance is estimated at: …… R959 100 000

c. The cost to move the Eskom line and to prepare the expanded site is estimated at:…… ……R85 000 000

d. It therefore makes enormous sense to expand the current landfill site and to continue with operations as-is.

e. It is therefore proposed that Council decides upon the expanded internal option and to allow the Directorate: Infrastructure Services to negotiate with Eskom and any other associated role players to expand the current landfill site.

f. It is further suggested that once all costs are formally known that a costing report be brought to Council, but that an amount be placed onto the 2018/19 budget to reflect the associated costs to prepare the landfill site to be expanded, i.e. negotiate with Eskom to move the HV Lines. It is proposed that an amount of R60 million be budgeted on the 2018/2019 budget for this purpose.

6.3 Environmental implications

The expansion of the Landfill site would need environmental approval.

6.4 Financial implications

As explained in detail above, it is expected that:

Nr	Option	Cost over 10 Years
1	Transporting Waste to a Remote Site	R1 074 100 000
2	Expanding Current Site	R115 000 000
3	Total savings over 10 years if Option 2 is followed instead of Option 1	R959 100 000

6.5 Legal Implications

a. The Constitutional, Act 108 of 1996, as amended, States under Schedule 5B, inter alia:

Part B

The following local government matters to the extent set out for provinces in section 155(6)(a) and (7):

- Refuse removal, refuse dumps and solid waste disposal

b. The Municipal System Act, Act 32 of 200, has reference and in Particular:

i. Section 78(1) and (2)

ii. Section 51

iii. Section 68

These sections are discussed under Item 5.1

6.6 Staff Implications

If an internal option is chosen and the landfill site is expanded, there will be no impact on staff.

6.7 Risk Implication

A risk of the current landfill site reaching capacity by 2019 has been raised. If the site is expanded this risk will have been mitigated.

6.8 Previous / Relevant Council Resolutions:

12TH COUNCIL: 2017-09-27: ITEM 7.6.2

RESOLVED (majority vote with abstentions)

(a) that a Section 78 process be launched and that an internal waste disposal service delivery increase be investigated through the Section 78(1) approach; and

(b) that a formal report be submitted to Council as required by Section 78(2), which will indicate the best way of rendering internal waste disposal by landfill and any recommendations to a possible external method of waste disposal landfill.

5.6.2	**SECTION 78(2) REPORT ON THE PROVIDING OF SUFFICIENT PUBLIC PARKING**

Collaborator No:
IDP KPA Ref No:
Meeting Date: ***14 March 2018***

1. SUBJECT

SECTION 78(2) REPORT ON THE PROVIDING OF SUFFICIENT PUBLIC PARKING

2. PURPOSE

To report in terms of a Section 78(2) Report on the Section 78(1) investigation on the providing of sufficient parking in the Greater Stellenbosch Municipal Area.

3. FOR DISCUSSION

Municipal Council.

Schedule 5B of the Constitution determines that Traffic and Parking is a Local Government competence. Section 77 of the MSA determines

"77. Occasions when municipalities must review and decide on mechanisms to provide municipal services.—A municipality must review and decide on the appropriate mechanism to provide a municipal service in the municipality or a part of the municipality—

(a) in the case of a municipal service provided through an internal mechanism contemplated in section 76, when—

(i) an existing municipal service is to be significantly upgraded, extended or improved;

(ii) ……."

4. EXECUTIVE SUMMARY

Due to a high number of external persons visiting Stellenbosch on a daily basis as well as the historical nature of Stellenbosch, a huge back log parking exists. It is calculated that currently a shortage of 2200 bays of parking exist within the Greater Stellenbosch Area.

Council decided that a study and an assessment be done on how such parking should be provided. Council resolved on 27 September that a Municipal Systems Act (MSA) Section 78 process be commenced.

A Section 78(1) process has been conducted to determine what manners of internal processes can be utilised to expand the current parking situation. It has very soon become clear that additional parking will have to be provided through parking garages with several floors. It became clear that this would be a highly capital intensive project at a cost of nearly R300 million.

It is therefore proposed that Council opts to also look at the provision of such a parking service through an external means. It is recommended that Council follows the Section 78(3) process to find appropriate external service provision scenarios. Council could then take a fully advised decision on the best appropriate way forward once an external assessment has also been done.

5. RECOMMENDATIONS

(a) that this report be noted;

(b) that Council notes the attached report on the providing of sufficient public parking;

(c) that Council accepts that all the requirements of Section 78(1) in terms of investigating the feasibility of the provision of sufficient parking have been complied with;

(d) that Council, in terms of the Municipal Systems Act, Act 32 of 200, as amended, Section 78(2), accepts the scenario to "after having applied subsection (1), a municipality may, before it takes a decision on an appropriate mechanism, explore the possibility of providing the service through an external mechanism mentioned in section 76 (b).";

(e) that Council formally proceeds to the Municipal Systems Act, Section 78(3) process of exploring the possibility of providing the municipal service of parking through an external mechanism; and

(f) that a report on the outcome of this investigation be provided to Council, upon the completion of a Section 78(3) exercise in order for Council to take a Section 78(4) decision.

6. DISCUSSION / CONTENTS

6.1 Background

The availability of parking within the majority of the Stellenbosch Demarcated Urban Area has become a huge problem and it has become necessary to create additional parking through various methods. An example of this occurs in the Stellenbosch Town area where the University currently teaches about 32 000 students of which about 28% do not stay in Stellenbosch but commute from outside. These students would therefore need parking every day that they travel to Stellenbosch. The remaining 72% of students would also need parking but can also be accommodated at university residences or at private residences where students are been lodged.

The town of Stellenbosch has also grown considerably in the past 45 years and parking, which was already a problem in 1970, has become steadily worse as time has progressed. Various solutions has been put in place, all of which has now reached capacity and some of which are in need of upgrading namely, the Eikestad Mall/Town Hall Parking and the Bloemhof Parking.

The general direction of discussions between Stellenbosch Municipality and the University has also indicated a preference to curb vehicular traffic in the University Core and to promote None Motorised Traffic (NMT) in this core.

The proposed solution is to cater for all incoming traffic in parking facilities at the edges of this core and thereafter students could use public transport or Non-Motorised Transport (NMT) to travel to and back from classes Various exercises have been conducted in the past with various solutions and now is the time to coordinate and consolidate all of these proposals into a final proposal upon which the Council can decide and act on an extended public parking provision.

Once Council has decided on the long term parking provision and the provision of a lighter traffic core, then a decision can be made whether parking at the Eikestad Mall/Town Hall and Bloemhof should merely be rebuilt and same amount of parking provided or whether the parking should upgraded to a larger amount of parking.

Figure 2.1: Parking Detail within Stellenbosch Town

Figure 2.2: Parking Detail within Franschhoek

Figure 2.3: Parking Detail within Klapmuts

Currently the Municipality owns and manages a number of parking facilities, such as the Eikestad Mall Parking, Bloemhof Parking, Stellmarket Parking, Checkers Parking, Parking bounded by Piet Retief -, Bird -, Louw -, Noordwal Wes Streets as well as some others, within the Town of Stellenbosch.

In order to drastically increase the amount of parking various solutions can be looked at, some of which are internal methods and other could be external such as paid parking garages. Similarly similar parking problems are being experienced within the Franschhoek & Klapmuts areas where the large tourism industry requires that additional parking be investigated.

Many development opportunities are being sought in the Klapmuts area also and currently a large problem is being experienced with the amount of large trucks stopping overnight. To this extent parking needs to be investigated.

The Schedule 5B of the Constitution of SA, determines that “Traffic and Parking” is a Local Government competence and Section 77 of the MSA determines:

“77. Occasions when municipalities must review and decide on mechanisms to provide municipal services.—A municipality must review and decide on the appropriate mechanism to provide a municipal service in the municipality or a part of the municipality—

(a) in the case of a municipal service provided through an internal mechanism contemplated in section 76, when—

(i) an existing municipal service is to be significantly upgraded, extended or improved;

(ii) ……..”

As parking has become a severe problem and, as it is a Municipal Competence, the Act requires that a Section 78 process be performed to officially determine the best way forward.

6.2 Discussion

For more detail, please refer to the attached report under **ANNEXURE A**.

6.2.1 Requirements of the Section 78(1) process.

The Municipal Systems Act, Act 32 of 200, as amended, requires the following under Section 78(1):

"*Criteria and process for deciding on mechanisms to provide municipal services.—*

(1) When a municipality has in terms of section 77 to decide on a mechanism to provide a municipal service in the municipality or a part of the municipality, or to review any existing mechanism—

(a) it must first assess—

(i) the direct and indirect costs and benefits associated with the project if the service is provided by the municipality through an internal mechanism, including the expected effect on the environment and on human health well-being and safety;

(ii) the municipality's capacity and potential future capacity to furnish the skills, expertise and resources necessary for the provision of the service through an internal mechanism mentioned in section 76 (a);

(iii) the extent to which the re-organisation of its administration and the development of the human resource capacity within that administration as provided for in sections 51 and 68, respectively, could be utilised to provide a service through an internal mechanism mentioned in section 76 (a);

(iv) the likely impact on development, job creation and employment patterns in the municipality, and

(v) the views of organised labour; and

(b) it may take into account any developing trends in the sustainable provision of municipal services generally."

These requirements will be dealt with separately below:

6.2.2 The direct and indirect costs and benefits associated with the project if the service is provided by the municipality through an internal mechanism, including the expected effect on the environment and on human health well-being and safety

g. Direct and Indirect Cost and Benefits

An additional 2500 parking bays are needed to provide sufficient parking within the greater Stellenbosch. There currently certain fixed positions where such parking can be provided and it is envisaged that such parking will have to be provide via multi-storey parking garages.

The Capital Cost of these parking garages is provided within table 5.2.1 below:

Table 5.2.1 Estimated Capital costs of parking bays

Parking Area	Estimated Costs
Franschhoek Tennis Courts	R21,600,000
The Braak	R92 100 000
Bloemhof.	R63,000,000
Behind City Hall	R94,000,000
Klapmuts Truckstop	R5 000 000
Total	R275 700 000

In order to manage all of these bays a further workforce will be needed. It is noted that these garages will probably have to be operated on a 24 hour per day basis.

Staffing will have to be adjusted for a 24 hour operation as well as operating 2500 more parking. It is estimated that staff would be needed as per table below:

Nr	Job Title	Per Garage	Per day of three shifts	Extra shift for leave	Total	Salary per person	Salary total
1	Parking Office attendant	2	6	2	8	R 50 000	R 433 333
2	Security one per floor	12	36	12	48	R 40 000	R 2 080 000
3	Parking machine attendant	1	3	1	4	R 50 000	R 216 667
4	Supervisor	1	3	1	4	R 80 000	R 346 667
5	Total	16	48	16	64	R 220 000	R 3 076 667

Nr	Expenditure Type	Per Annum
1	Salaries	R3 100 000
2	Maintenance (One thirtieth of Capital Cost)	R9 000 000
3	Municipal Services (R5000 per Unit per Month)	R300 000
4	Cost impact on other Departments (20% of Salaries)	R620 000
5	Capital Loan Servicing (10% of Capital Cost)	R27 570 000
6	Total Operational Cost	R40 590 000

In order to break even the income from parking must match the expenditure. It is assumed that an average 80% of parking will be utilised in day time (8 hours) and 20% over the rest (16hours). Parking hours are then calculated on 2200 parking bays. (2200*8*0.8) + (2200*16*0.2) = 14080 + 7040 = 21120 park hours per day in which parking bays are engaged. This amount of park hours must therefore bring in an income of R40 590 000 per annum. This means that the cost of one hour parking should be R5.30 per bay.

h. Expected effect on the environment and on human health well-being and safety.

Parking Garages will accommodate the high number of private vehicles visiting the CBD. The current shortfall of parking result in cars idling around and driving around looking for parking, causing excessive CO_2 emissions and congestion which negatively impact the environment. The provision of the shortfall in parking will reduce the unnecessary driving and idling and subsequently the CO_2 emissions. Traffic congestion will also be reduced. It must be stated that this is only true as long as the parking provision aims to address the shortfall in parking in the CBD and not wanting to provide unnecessary more parking bays. In light of the above, the overall impact on the environment is expected to be positive – other than the short-term impact of noise pollution etc. caused by construction.

The safety of people and vehicles will generally be similar or slightly more in parking garages than parking in the open

i. The municipality's capacity and potential future capacity to furnish the skills, expertise and resources necessary for the provision of the service through an internal mechanism mentioned in section 76 (a).

The Municipality generally have the skills to operate a business such as a parking garage, since most of its services have to be managed in a similar business manner. Additional staff will be needed.

j. the extent to which the re-organisation of its administration and the development of the human resource capacity within that administration as provided for in sections 51 and 68, respectively, could be utilised to provide a service through an internal mechanism mentioned in section 76 (a);

Section 51:

51. Organisation of administration.—A municipality must within its administrative and financial capacity establish and organise its administration in a manner that would enable the municipality to—

(a) be responsive to the needs of the local community;

(b) facilitate a culture of public service and accountability amongst its staff;

(c) be performance orientated and focused on the objects of local government set out in section 152 of the Constitution and its developmental duties as required by section 153 of the Constitution;

(d) ensure that its political structures, political office bearers and managers and other staff members align their roles and responsibilities with the priorities and objectives set out in the municipality's integrated development plan;

(e) establish clear relationships, and facilitate co-operation, co-ordination and communication, between—

(i) its political structures and political office bearers and its administration;

(ii) its political structures, political office bearers and administration and the local community;

(f) organise its political structures, political office bearers and administration in a flexible way in order to respond to changing priorities and circumstances;

(g) perform its functions—

(i) through operationally effective and appropriate administrative units and mechanisms, including departments and other functional or business units; and

(ii) when necessary, on a decentralised basis;

(h) assign clear responsibilities for the management and co-ordination of these administrative units and mechanisms;

(i) hold the municipal manager accountable for the overall performance of the administration;

(j) maximise efficiency of communication and decision-making within the administration;

(k) delegate responsibility to the most effective level within the administration;

(l) involve staff in management decisions as far as is practicable; and

(m) provide an equitable, fair, open and non-discriminatory working environment.

Due to the current operation that is already in existence and that this business has to be expanded to cater for 2200 parking bays, it merely means that the current operations, are increased to accommodate the additional 2200 parking bays, all of the above mentioned items, from (a) to (m) are conformed with, but additional staff would have to be employed.

Section 68:

68. Capacity building.—

(1) A municipality must develop its human resource capacity to a level that enables it to perform its functions and exercise its powers in an economical, effective, efficient and accountable way, and for this purpose must comply with the Skills Development Act, 1998 (Act No. 81 of 1998), and the Skills Development Levies Act, 1999 (Act No. 28 of 1999).

(2) A municipality may in addition to any provision for a training levy in terms of the Skills Development Levies Act, 1999, make provision in its budget for the development and implementation of training programmes.

(3) A municipality which does not have the financial means to provide funds for training programmes in addition to the levy payable in terms of the Skills Development Levies Act, 1999, may apply to the Sector Education and Training Authority for local government established in terms of the Skills Development Act, 1998, for such funds

The whole Section 68 will be conformed with if additional staff are employed as in the normal operation of all current staff.

k. The likely impact on development, job creation and employment patterns in the municipality,

Due to the need to employ additional staff this requirement will have a positive outcome.

l. The views of organised labour

Organised labour felt that internal job creation should be of paramount importance and would rather see that an internal option be followed whereby the Municipality would be in full control of the garages and also employ the staff to manage these facilities.

6.2.2 **Requirements in terms of Section 78(2)**

Section 78(2) states:

(2) After having applied subsection (1), a municipality may—

(a) decide on an appropriate internal mechanism to provide the service; or

(b) before it takes a decision on an appropriate mechanism, explore the possibility of providing the service through an external mechanism mentioned in section 76 (b).

It is felt that the amount of funding (R275 700 000 Capital) needed that this is possibly a good business to rather operate with an external service provider, where funds are provided by the external source, operated and maintained by this source and the parking garages become the property of the municipality after a certain length of time, normally 20 years.

It is therefore proposed that Section 78(2)(b) be followed: “After having applied subsection (1), a municipality may, before it takes a decision on an appropriate mechanism, explore the possibility of providing the service through an external mechanism mentioned in section 76 (b).”

6.3 Environmental implications

It is expected that the impact on the Environment will be lessened by Parking Garages, since less CO_2 will be generated through vehicles finding parking space quicker as well as the NMT scenario being implemented within the core of the University

6.4 Financial implications

The financial implications are explained above but in summary:

Nr	Expenditure	Cost
1	Expected capital cost	R275 700 000
2	Expedited Operational Cost per annum	R40 590 000

6.5 Legal Implications

c. The Constitutional, Act 108 of 1996, as amended, States under Schedule 5B, inter alia:

Part B

The following local government matters to the extent set out for provinces in section 155(6)(a) and (7):

- Traffic & Parking

d. The Municipal System Act, Act 32 of 200, has reference and in Particular:

i. Section 78(1) and (2)

ii. Section 51

iii. Section 68

These sections are discussed under Item 5.1

6.6 Staff Implications

If an internal option is chosen there will be a staff impact in that it is estimated that a further 64 staff members would have to be employed.

6.7 Risk Implication

The risk of inadequate parking and unhealthy components thereof, are reduced.

6.8 Previous / Relevant Council Resolutions:

12TH COUNCIL: 2017-09-27: ITEM 7.6.1

RESOLVED (majority vote with abstentions)

(a) that a Section 78 process be launched and that an internal parking service delivery increase be investigated through the Section 78(1) approach;

(b) that parking service delivery increase be based on the towns of:

i) Stellenbosch
ii) Klapmuts, and
iii) Franschhoek; and

(c) that a formal report be submitted to Council as required by Section 78(2), which will indicate the best way of rendering internal parking and any recommendations to a possible external method of rendering parking services.

Meeting:	*12th Council: 2017-09-27*	*Submitted by Directorate:*	*Engineering Services*
Ref no:	*17/2/3/6*	*Author*	*D Louw*
Collab:	*538693*	*Referred from:*	*Mayco: 2017-09-13*

ANNEXURE 1

Provincial Sustainable Transport Program

STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

The provision of parking facilities and parking management services in Stellenbosch Municipality

Section 78 (1) Assessment

November 2017

TABLE OF CONTENTS

LIST OF TABLES

1. Introduction

1.1 Background

Stellenbosch is experiencing severe traffic congestion due to various reasons including the undersupply of parking facilities. In an attempt to relieve the traffic congestion in Stellenbosch, the municipality embarked on a number of projects which include:

- The improvement of NMT facilities
- The development of rideshare and public transport through the Large Employer Trip Reduction Program (LETRP) project
- The investigation of into an Integrated Public Transport Network
- Possible TOD development

All of these alternative solutions are aimed at reducing the demand for travelling by private vehicle. The provision of parking is not a demand side management strategy, but rather a supply side solution to addressing the congestion problem.

The town of Stellenbosch and Franshoek has developed over more than 250 years. The development started before the advent of the private motor vehicle. Most road reserves are therefore not responding to the need for a hierarchical road network and are further limited by the heritage features such as water channels and historical perimeter walls. Most of the centre of town was zoned for residential purposes many years ago. They have been rezoned to business over decades and densification took place to such an extent that adequate parking could not be provided on-site.

Off-street parking has become inadequate and visitors to the centre of Stellenbosch do not get parking the first time they arrive at their desired destination. A study undertaken earlier this year found that 90% of vehicles entering Andringa-, Church- and Ryneveldt Streets did not get parking the first time they entered these streets. They will therefore have to drive around a number of times before they could find a parking and contribute to the congestion being experienced.

The Comprehensive integrated Transport Plan (CITP), which is a statutory strategy document, also identified the shortage of parking a challenge that need to be addressed.

Council approved at its 12th Council meeting held on 27 September 2017 that:

a) A Section 78 process be launched and that an internal parking service delivery mechanism be investigated through the Section 78(1) of the Systems Act (Act No 32 of 2000).
b) That parking service delivery increase be based on the towns of Stellenbosch, Franshoek and Klapmuts
c) That a formal report be submitted to Council as required by Section 78(2), which will indicate the best way of rendering internal parking or recommendations to a possible external method of rendering parking services.

1.2 Methodology and Report Layout

Section 78(1) of the MSA sets out the criteria and process that must be followed when deciding on the mechanism to be used for service provision. This report, therefore, adopts the structure set out in Section 78(1). The following sources of information have been used:

- Council approved documents: the IDP and the CITP (and related budget information).
- The original decision to do a Section 78(1) assessment.
- Interviews with key officials within the Municipality.
- Consultation with the relevant labour unions.

The document is structured as follows:

- ***Chapter 2*** outlines the nature and extent of the service envisaged.
- ***Chapter 3*** describes the requirements of the Municipal Systems Act.
- ***Chapter 4*** follows the MSA process and evaluates the suitability of an internal mechanism to deliver the service.
- ***Chapter 5*** summarises the conclusions.
- ***Chapter 6*** sets out the recommendations of the review.

2. Provision of Municipal Public Parking

This chapter outlines the nature and extent of the public parking service provision envisaged by the Municipality. It gives an indication of the resources that would be required to operate and manage the service.

2.1 Endorsement by the CITP and the IDP

The Municipality has an approved Integrated Development Plan (IDP) for the period 2012 to 2017. A component plan to the IDP is the Comprehensive Integrated Transport Plan (CITP) for the period 2015 – 2020, which has also been approved by the Municipal Council. The CITP includes proposals for the development of more parking areas . The following principles guide the provision of public parking:

- Compliance with the Department of Transport guidelines for parking requirements in terms of the Technical Recommendation for Highways TMH16 and 17.
- Compliance with the geometric and configurative requirements as prescribed in the Department of Transport TMH 17
- Compliance to the municipal zoning scheme
- Improve parking services and quality of life of residents.
- Provision of parking on the periphery of the town centre to be still within walking distance from the centre of town or in association with a shuttle service if parking is provided outside of town
- Financial sustainability

2.2 The extent of the parking service envisaged.

The portions of land identified for the provision of parking in Stellenbosch has been identified and are as follows:

- The Braak along Bird and Alexander streets
- Existing municipal parking behind the Council Hall
- Bloemhof parking area in Van Riebeeck Street.

The location of these sites are shown in Figure 2.1

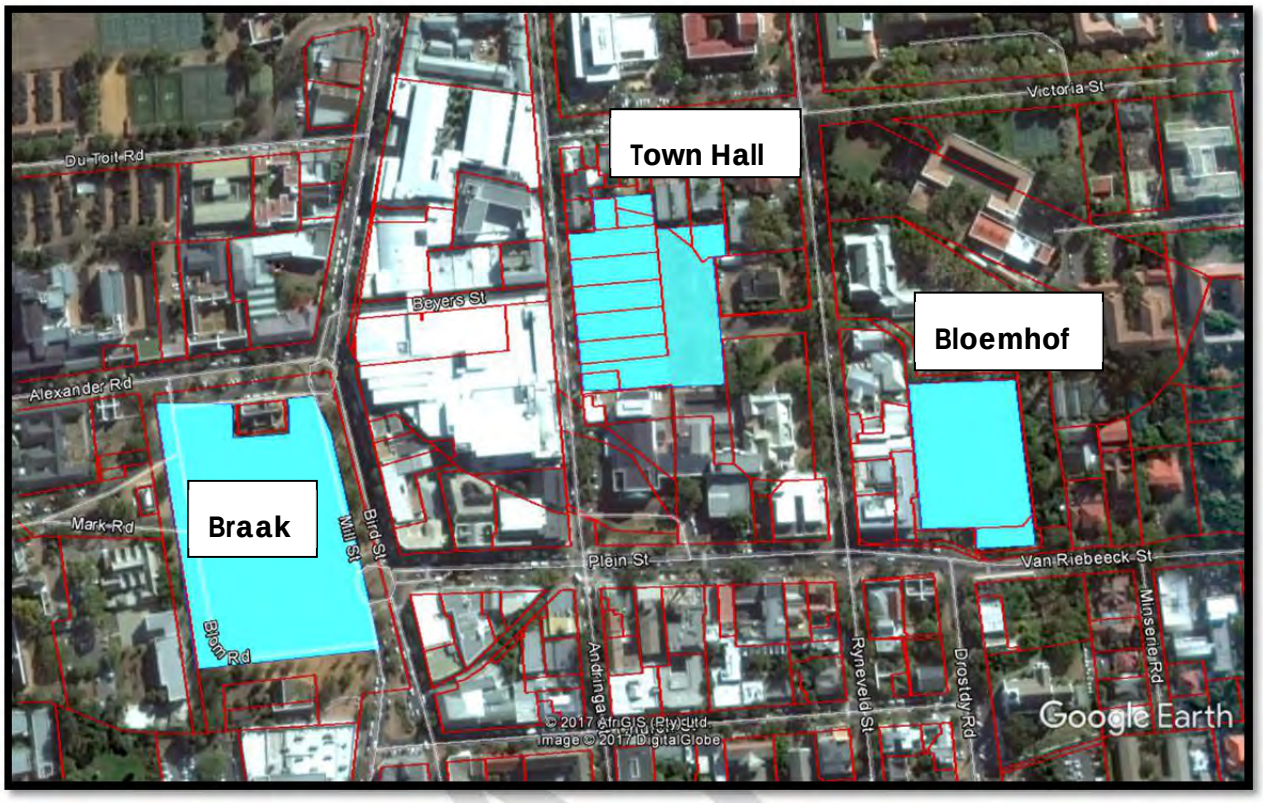


Figure 2.1: Location of proposed public parking areas.

The provision of the public parking service will be as follows:

- **The Braak**

  The parking will be provided underground to keep the open space that has heritage status. It could be considered to provide double storey underground parking if feasible. The area is approximately 15000m2 in extent and will be able to accommodate 1000 parking bays.

- **Bloemhof Parking Area**

  This 7017m2 area is currently being used as a parking area. Most people parking here work in the Ecclessia Building that house the municipal Engineering- and Corporate Services Departments. Day visitors also use the parking at a daily rate of R45 per vehicle. The area has a gravel surface and has capacity of accommodating 250 vehicles. A three level parking area will be provided here, with one level being underground and two above ground. A total of 720vehicles will eventually be accommodated here.

- **Behind Town Hall**

  The parking behind the Town Hall will be provided by the redevelopment of the existing parking area to a three storey parking facility, with one level being underground. The area is 10,600m² in extent and will be able to accommodate 1100 parking bays.

The land indentified for the provision of public parking in Franshoek is the old tennis court located behind the Franshoek town hall as shown in Figure 2.2.

Figure 2.2: Location of Parking Area in Franshoek

3. Requirements of the Municipal Systems Act

3.1 The responsibility

Section 78 (1) of the Municipal Systems Acts states that:

"When a municipality has in terms of Section 77 to decide on a mechanism to provide a municipal service in the municipality, or to review an existing mechanism"

Accordingly, a Municipality:

a) Must first assess –

   i. The direct and indirect costs and benefits associated with the project if the service is provided by the municipality through an internal mechanism, including the expected effect on the environment and on human health, well-being and safety;

   ii. The municipality's capacity and potential future capacity to furnish the skills, expertise and resources necessary for the provision of the service through an internal mechanism mentioned in section 76(a);

   iii. The extent to which the re-organisation of its administration and the development of the human resource capacity within that administration, as provided for in sections 51 and 68, respectively, could be utilised to provide a service through an internal mechanism mentioned in section 76 (a);

   iv. The likely impact on development, job creation and employment patterns in the municipality, and

   v. The views of organised labour; and

b) It may take into account any developing trends in the sustainable provision of municipal services generally.

Section 78(2) of the MSA then states that, after having applied subsection (1), a municipality may -

a) Decide on an appropriate internal mechanism to provide the service; or

b) Before it takes a decision on an appropriate mechanism, explore the possibility of providing the service through an external mechanism mentioned in section 76(b).

What the above means is that when a municipality wants to deliver a new service, it must first decide whether it is broadly feasible to do so internally or whether it should consider outsourcing the service provision.

3.2 Definitions

Key considerations in the interpretation of the MSA relate to the definitions of the term "service", and "mechanism".

A "Municipal service" is defined as "a service that a municipality in terms of its powers and functions provides or may provide to or for the benefit of the local community irrespective of whether –

a) such service is provided, or to be provided, by the municipality through an internal mechanism contemplated in section 76 or by engaging an external mechanism contemplated in section 76; and

b) fees, charges or tariffs are levied in respect of such a service or not".

For the purposes of this review the parking service includes not only the provision of the parking area, but related services such as fee collection, security, ticketing systems, intelligent transport systems and facilities.

It is also useful to draw a distinction between the provision of a municipal service, on the one hand, and the actions taken and decisions made by a municipality in relation to a municipal service, on the other. The terms "service provider" and "service authority" are sometimes used to describe those two roles. Municipalities can, and often do, outsource the provision of municipal services, in terms of a service delivery agreement. A private (or public) company is then the service provider and the municipality remains the service authority.

The term "mechanism" is deemed to refer to either an internal mechanism (defined by section 76(a) as a department, business unit or any other component of the Municipality's administration) or an external mechanism (a municipal entity, another municipality, an organ of state, a community based organisation or other NGO, or any other institutions, entity or person legally competent to operate a business activity).

3.3 The Methodology for Assessment

Section 78 (1) sets out the method by which the delivery of the service via an internal mechanism is to be assessed. This report adopts the s78 (1) methodology.

3.4 Criteria for Assessment

In terms of Section 73(2), the municipality has the duty to ensure that the delivery of its services adheres to the following guidelines:

Municipal services must be

a) equitable and accessible;

b) provided in a manner that is conducive to:

   i. The prudent, economic, efficient and effective use of available resources; and

   ii. The improvement of standards of quality over time;

c) financially sustainable;

d) environmentally sustainable; and

e) regularly reviewed with a view to upgrading, extension and improvement.

Thus, the Section 78(1) investigation must consider the internal mechanisms for compliance with the above requirements.

4. Assessment of Service Delivery

This section sets out the assessment for internal service delivery, using the structure provided by section 78(1) of the MSA.

4.1 Direct and indirect costs and benefits including the effect on the environment, human health, wellbeing and safety

The assessment undertaken here is at a high level, in order to give an indication of the resources required by the Municipality and the economic, environmental and social impact of providing the service internally.

Transport is widely recognised as a key driver of socio-economic growth and development, particularly in developing and emerging economies where many citizens are unemployed. The need for an efficient, effective, affordable and safe transport system to support economic growth and development is particularly relevant in South Africa. Indeed, recognition of the central role to be played by transport in South Africa's growth and transformation agenda is repeatedly highlighted in the National Development Plan 2030.

Parking areas use valuable land to accommodate vehicles, which could alternatively be used for higher intensity economic activity. By not providing parking on the other hand can contribute to higher frustration for all road users as a result of increased traffic congestion. An earlier study in the tourism centre of Stellenbosch revealed that 90% of vehicles entering this area do not find parking the first time they enter, but drive around looking for parking, adding to the already congested traffic situation. There is also the belief that providing more parking bays will attract more traffic to the already congested CBD of Stellenbosch. Although this seem to be a logical consequence, the bulk of the parking will be provided at the Braak site, which will be accessed from Alexander Street, which will intercept traffic from the busy R44 before they enter the CBD. Also as previously mentioned, vehicles will be able to drive immediately and direct to available parking areas, preventing congestion from driving around looking for parking.

Movement into and around the Municipality is hampered by a lack of good quality public parking areas and good quality parking services. The development of such services will help to facilitate safe, reliable and efficient access to business activities in the CBD.

4.1.1 Direct and Indirect Costs and Benefits

Benefits

The major benefit of a formal parking service is that motorists can directly drive to an available parking bay, without having to unnecessarily driving around looking for parking. The application of the latest technology and a specific cell phone application will make it possible for motorists to identify an available parking area, book it and drive there directly without unnecessarily driving around looking for parking and contributing to traffic congestion.

Table 4-1 Benefits of an improved parking service

Present	Future
Insufficient no of parking bays	An additional 2200 parking bays in Stellenbosch and 240 bays in Franshoek.
90% of motorist drive around looking for parking.	Motorists drive directly to a pre-booked parking area.
Access control outdated, slow and add to congestion.	Access control with modern and higher capacity which reduce traffic impact on adjacent streets.
Insufficient parking layout and configuration.	Improved layout configuration and parking system performance.
Very poor cost recovery and fee collection (below 30%).	Almost perfect monitoring and 100% fee recovery through application of technology.

Direct costs

The planned parking service to be run by the Stellenbosch Municipality is going to be more expensive than the current parking areas operated by a private company. The primary reasons for this are:

1. A quality parking service with technologically advanced features will require a high initial capital outlay.
2. The parking management and fee collection system will be upgraded and strict service and maintenance schedules will be followed.

3. Employment legislation (Labour Relations Act, Basic Conditions of Employment Act, Health and Safety Act) must be adhered to.
4. Public safety will be a priority, with systems implemented to reduce accidents and personal security incidents.
5. Fares are to be balanced between discouraging motorists from not using their private vehicles and recovering the costs of providing the parking infrastructure. This is a sensitive balancing act that can hamper the success of the project if not correctly implemented.

The costs of the proposed parking areas have been estimated, but need to be refined as more detail designs are being done. The estimated costs for the four parking areas are shown in Table 4.1 below:

Table 4-22 Estimated costs of parking bays

Parking Area	Estimated Costs
Franshoek Tennis Courts	R21,600,000
The Braak	R92,086,856
Bloemhof.	R63,000,000
Behind City Hall	R94,000,000

At current interest rates, the loans to provide these infrastructure can be serviced over a ten year period not taking into consideration price escalation. This calculation also assumes a parking occupancy of 75% for 25 days a month at current parking tariffs.

Detail business Plans need to be prepared to make a more accurate assessment of the business viability of providing the parking service.

Apart from the above costs, the operational costs to provide for include:

- Security costs
- Ticketing
- Maintenance

- Management
- Utility services

The service is expected to commence operations in Year 5 (2023/24).

The initial Operating Business Plan will give an indication of the direct operating costs at a later stage. The operating income has been estimated to be R3,650,000 per month. Their seem to be a viable business case for the provision of these parking facilities from initial assessments.

4.1.2 Environment

Parking Garages will accommodate the high number of private vehicles visiting the CBD. The current shortfall of parking result in cars idling around and driving around looking for parking, causing excessive CO^2 emissions and congestion which negatively impact the environment. The provision of the shortfall in parking will reduce the unnecessary driving and idling and subsequently the CO^2 emissions. Traffic congestion will also be reduced. It must be stated that this is only true as long as the parking provision aims to address the shortfall in parking in the CBD and not wanting to provide unnecessary more parking bays. In light of the above, the overall impact on the environment is expected to be positive – other than the short-term impact of noise pollution etc. caused by construction.

4.1.3 Human Health, Wellbeing and Safety

The impact on human health, wellbeing and safety is expected to be positive, since the intended project places a particular emphasis on the improvement of safety and security. Reduced levels of frustration associated with looking for parking and idling will improve human wellbeing. The conditions of the existing parking areas are also bad and the quality of the facility and the service to be provided will be conducive for a more healthy and safe environment and will also improve overall wellbeing.

4.2 Stellenbosch Municipality's capacity and potential future capacity to furnish the necessary skills, expertise and resources

In order to run the envisaged parking service internally, the Stellenbosch Municipality would need to develop sufficient organisational capacity to perform the necessary functions.

4.2.1 Understanding the functions required

There are a range of strategic and operational functions that need to be fulfilled in order for a parking system to run effectively and efficiently. These functions are described below.

- ***Operational planning:*** this includes the technical design of the service (demand assessment, access to the facility, vehicle maneuverability and pricing strategy) and ongoing service refinement.

- ***Operations:*** The provision of the actual parking service on a set layout and configuration with the location of the paypoints at points convenient for motorists and the minimum delay at the access points. Delays can rather be experienced at the pay points to reduce traffic congestion. This function includes operations management, service monitoring, driver vehicle operations and incident response (e.g. ticketpayment machines bear down).

- ***Facility Management:*** The specialised management of the facility required to provide the parking service, including procurement, maintenance and servicing, cleaning, insurance, accident administration, licensing and financial asset management.

- ***Marketing and Communications:*** is focused on publicising the parking service to the community to encourage service patronage, communicate service changes or updates and to distribute motorist information in a usable format. An additional aspect of the communication is the ability to identify available parking bays through a downloadable application. The operation of the application must be managed and maintained to ensure effective communication that ensures optimum operation of the parking area.

- ***Contract management:*** All functions that are outsourced to external service providers will be contracted and these contracts need to be managed. Service providers need to be paid timeously as well as monitored in order to ensure that they are meeting their contractual obligations.

- ***Fare management:*** Is the sale of tickets and the collection of fares from the motorists. This function also ensures that motorists have paid the correct fare for the duration they have used the facility. The fare structure must be low enough to ensure that motorist use the facility and at the same time be sufficient to ensure cost recovery of all capital outlay and operational expenditure. The fare management system must allow for all forms of payment to be possible.

- ***Financial management:*** Managing the various financial elements of the system including revenues (fare revenue, any grants or subsidy contributions

from national or provincial government, municipal contribution, other system revenue) and costs (operating and capital costs).

- ***Intelligent Parking Systems (IPS):*** This function relates to the monitoring of the parking system to ensure services are operating optimally. Information of the average duration motorists park, what time of the day the parking bay is full. The origin of the vehicles etc will be available and can be used in the optimum management of the facility. This function requires a comprehensive information technology framework that connects parking activity to a central server. The information from the parking bay is obtained through a device that will be installed in the parking bay which provided the necessary management data.

  The primary responsibility of the IPS system is to monitor whether or not a specific parking bay is occupied, and divert this information to the motorist who are connected to the server via a cellphone application.

  The system should automatically generate reports that can provide strategic management information.

- ***Safety and security co-ordination:*** ensures the safety of the motorist using the parking facility. This function includes the co-ordination of the SAPS and other private security service providers.

4.2.2 Capacity Requirements

It is estimated that the Municipality would need to employ between 35 and 40 people to run the parking facilities. Main job categories include service managers, parking attendants, facility manager, bus drivers, maintenance staff, ticket sellers/cashiers, security personnel, inspectors, cleaners, financial staff, infrastructure specialists, administrative staff and IT staff (primarily to maintain the Intelligent Parking Systems and the Fare Management Systems).

The Municipality currently has 1,174 budgeted posts (of which only 1,054 are filled). The Transport, Roads and Stormwater division has 100 staff across three divisions:

- The Roads and Stormwater division has 86 staff, mostly road workers
- Traffic Engineering division has 14 staff
- Transport Planning and Public Transport division has a single approved position, which has recently been filled.

Establishing and running the proposed parking service, will therefore, increase the Stellenbosch Municipal Transport, Roads and Stormwater ffing structure by between 30% and 40% (based on filled posts).

The Municipality does not have the capacity to increase its staff complement by the extent required in the short term. It may, in the long term, be able to develop the capacity by recruiting from the existing industry and instituting training programmes to develop the required skills over time. However this would also require an increase in the overall management capacity of the Municipality – not just for the Engineering Services Department, but also other Departments, since there would be additional burdens placed on Departments such as Financial Services, Community Safety, Corporate Services and the Municipal Manager's Office.

4.3 Extent that re-organisation could be utilised

Section 78(1)(a)(iii) states that a municipality "must first assess the extent to which the re-organisation of its administration and the development of the human resource capacity within that administration as provided for in sections 51 and 68, respectively, could be utilised to provide a service through an internal mechanism mentioned in section 76(a)"

Section 51(g)(i) states that "a municipality must within its administrative and financial capacity establish and organise its administration in a manner that would enable the municipality to perform its functions through operationally effective and appropriate administrative units and mechanisms, including departments and other functional or business units."

Section 68(1) states that "a municipality must develop its human resource capacity to a level that enables it to perform its functions and exercise its powers in an economical, effective, efficient and accountable way..."

The analysis under section 4.2 above indicates the extent of the organisational resources required to run a parking service. It is clear that, in the near term, Stellenbosch Municipality does not have the capacity to take on these functions through a re-organisation of its existing staff and structures. The Directors of Departments that may potentially be responsible for such a service, Engineering Services and Community Safety, have also both indicated that they do not have the capacity to initiate such a service.

4.4 Likely impact on development, job creation and employment patterns in the municipality

The initiation of the parking service will create at least 40 jobs within the Municipality during the operation phase and up to 300 new jobs during the construction phase of the project.

The overall impact of a parking service is expected to have significant benefits for the broader development, as discussed in the cost benefit analysis above, by facilitating continued economic growth and job creation through the establishment of an efficient transport system.

4.5 Views of organized labour

On 20 April 2018 a letter was sent to the following unions:

- Independent Municipal and Allied Trade Union (IMATU)
- South African Municipal Workers Union (SAMWU)

The Unions have not yet had the opportunity to respond. However it is unlikely that their views will alter the current findings of this report, although their views will be important should a S78 (3) report be required.

Copies of the correspondence are contained in Appendix A.

4.6 Trends in the sustainable provision of municipal services

Section 78(1)(b) states that a municipality "may take into account any developing trends in the sustainable provision of municipal services generally."

The provision of services by the municipality must be provided in a sustainable manner, where the costs is not going to grow faster than the benefit the service or facility is bringing. Our experience from the public transport sector where public transport systems have been rolled out through external mechanisms in Cape Towm, Johannesburg and Tshwane is that the income has not realised as anticipated, resulting in the public transport service sustainability being questioned.

We need to learn from the experience of the above Cities and make the necessary adjustments to the income stream to ensure that at a low case scenario, the parking system will stil operate in a sustainable manner.

With regards to the specific focus of this assessment, Cape Town, Johannesburg, George, Pretoria, Polokwane and eThekwini have all considered external options for the provision of services. The typical approach has been to allow bus operations to be run by the private sector (usually a company or companies representing consortia of existing bus and minibus taxi owners and operators). The contracts governing the bus operations are usually managed by the Municipality via a transport department. The relevant department is also expected to manage contracts governing fare management, infrastructure design and development, inspection and monitoring(intelligent parking systems) and marketing and communications rather than providing these services internally.

5. Conclusions

5.1 Aspects Reviewed

The above report has provided an overview of the extent of the parking service as identified in Chaper 1 of this report, considered the process that the Municipality must follow in terms of section 78(1) of the MSA, and then reviewed each issue listed by section 78(1). These include the costs and benefits of providing the service, the Municipality's capacity to provide the service, and international and local trends with respect to transport service provision.

5.2 Conclusions

The conclusions reached from interviewing key municipal officials and considering each of the aspects required by s78 (1) are that the Municipality does not currently have the financial resources or organisational capacity to internally provide a public transport service. The major factors counting against it are the increased budget required to cover the establishment and recurring costs of the service, the significant increase in staffing that would be required and a national shift in the approach to sustainable transport.

Irrespective of the mechanism selected to deliver a parking service (internal vs. external), the Municipality should consider pursuing an alternative approach to parking service in and around the Stellenbosch and Franshoek CBD, based on the experience of other cities and towns. The experience of Boulder in the USA can be beneficial as it has become world renowned for its sustainable transport system, that stroke a good balance between non-motorised transport modes and the private vehicle.

6. Recommendations

Based on the conclusions reached above, it is recommended that:

1. The Municipality consider an external mechanism for the provision of parking services in Stellenbosch. This consideration should be conducted in terms of section 78(3) of the Municipal Systems Amendment Act (No 44 of 2003).

2. That the Municipality pursue an alternative approach to parking improvement based on the principles of the Provincial Sustainable Transport Programme.

3. That the Municipality seek a partnership with the Western Cape Government's Department of Transport and Public Works for support in implementing incremental improvements to parking services and the broader transport system, in line with the principles of the Provincial Sustainable Transport Programme.

4. That the municipality develop a relationship with Boulder in the USA who has similar characteristic as Stellenbosch in terms of studnt population, town size, agricultural activities, etc, and has successfully introduced initiatives that improve mobility and access in a sustainable manner.

5.6.3	**PNIEL ELECTRICITY NETWORK TAKEOVER FROM DRAKENSTEIN MUNICIPALITY: PROJECT TIMELINE AND MOU**

Collaborator No:
IDP KPA Ref No:
Meeting Date: ***14 March 2018***

1. SUBJECT

PNIEL ELECTRICITY NETWORK TAKEOVER FROM DRAKENSTEIN MUNICIPALITY: PROJECT TIMELINE AND MOU

2. PURPOSE

To report on the proposed timeline for the taking over of the Pniel Electricity Takeover from Drakenstein as well as the updated Memorandum of Understanding (MOU).

3. DELEGATED AUTHORITY

Municipal Council.

In terms of the Constitutional Act 108 of 19945 Chapter 7, S151(3) and Schedule 4B

4. EXECUTIVE SUMMARY

It has the wish of Stellenbosch Municipality to include the Pniel/Hollandsche Molen electricity network into its fold since 2008. This matter has now culminated in a joint Memorandum of Understanding (MOU) between the Municipalities of Drakenstein and Stellenbosch. After an independent assessment of the network to be taken over by Stellenbosch from Drakenstein, the electricity network cost of R16 236 253 has been arrived at.

It is now the intention to conduct a formal public participation process in order to formally apply to NERSA for an extension of the electricity supply licence of Stellenbosch Municipality. It is endeavoured to take over the network, customer and metering systems on the evening of 30 June 2018 and to operate the electricity network beyond that date. Council is requested to provide approval for the signing of the MOU plus the performing of all the processes necessary to complete a successful takeover.

5. RECOMMENDATIONS

(a) that this report be noted;

(b) that the Final MOU be accepted;

(c) that the Municipal Manager be authorised to sign the MOU on behalf of the Municipality;

(d) that the amount of R16 236 253 for the purchase of the Pniel/Hollandsche Molen Electricity Network from Drakenstein be considered at the setting up of the 2018/2019 Capital Budget;

(e) that an application be forwarded to NERSA to incorporate the Pniel/Hollandsche Molen Electricity Network into the license of Stellenbosch Municipality; and

(f) that an application be forwarded to Drakenstein Municipality to supply bulk electricity to the Pniel/Hollandsche Molen upon a successful response from NERSA and the appropriate capital amount be placed on the 2018/2019 capital budget,

6. DISCUSSION / CONTENTS

6.1 Background

During approximately 2008, Stellenbosch Municipality commenced with the discussions of taking over the Pniel/Hollandsche Molen Electricity Network. Various options were looked at but in 2015 investigations proved that purchasing electricity from Drakenstein in bulk and reselling to the Pniel/Hollandsche Molen areas at retail, to be the most advantageous option for Stellenbosch Municipality.

Stellenbosch Municipality acquired a mandate to discuss terms with Drakenstein Municipality and the final discussion agreed to was:

a. Stellenbosch to pay the depreciated replacement value (drv) of the networks within the municipal boundary of Stellenbosch.

b. The full value of additional circuit breakers and metering units to be installed.

c. A special selling tariff at the same Eskom tariff that Drakenstein Purchases

11kV electricity at, plus a surcharge of 10%

Upon investigation it was felt that the 10% surcharge is too high and further investigations were entered into.

It was decided to jointly appoint a consultant to determine the actual depreciated replacement value of the network and also the principles how the network will be purchased. It was further decided to propose that Stellenbosch Municipality purchase electricity direct from Eskom instead of the previous proposal that electricity be purchased from Drakenstein Municipality. This methodology is perceived to be the least costly.

The proposed MOU indicated the following:

a. Transfer of the ownership of the electricity network from Drakenstein to Stellenbosch

b. Verified purchase price of R16 000 000.00

c. Proposed payment structure which entails that Stellenbosch pays the amount upfront, which is then held in trust until all conditions are met and then paid to Drakenstein Municipality. However, Drakenstein Municipality has indicated that this could be done in stages depending on the availability of the funds on our budget. Our current budget made provision for R10 300 000 and was therefore not sufficient.

d. Suspensive conditions

   i) NERSA (National Energy Regulator of South Africa) approval to be sought which includes the public participation process required by the Electricity Regulation Act (ERA)

   ii) Approval of both the Stellenbosch and Drakenstein Councils

   iii) Transfer of the network to Stellenbosch

e. Connection costs to Eskom and separation cost to Drakenstein Municipality

Council made the following resolution:

(a) that the content of this report be noted;

(b) that the Memorandum of Agreement (MOA) be noted;

(c) that approval be given to the Municipal Manager to negotiate a final version of the Memorandum of Agreement (MOA); and

(d) that Council considers the approval of the final Memorandum of Agreement (MOA) at a future Council Meeting.

6.2 Discussion

6.2.1 Asset Evaluation

Drakenstein Municipality and Stellenbosch Municipality have met on various occasions at which time the network was assessed by an independent consultant: Hendrik Barnard and Lyners Consulting Engineers and meetings held with, technical staff, legal representatives and financial staff present from both sides.

The Consultant reviewed the assessment of assets and the amount of R16 236 253 was calculated. Report attached as **ANNEXURE A**

This is slightly higher than the initial price of R16 000 000 in the draft MOU.

6.2.2 Initial Scope of the Takeover

The updated MOU is attached as **ANNEXURE B**

The following plan of action was decided upon:

a. That Stellenbosch will initially purchase electricity from Drakenstein at the equivalent of the Eskom Megaflex Tariff at 11kV.

b. Stellenbosch would pay a connection fee to Drakenstein for a set of meters and an isolated 11kV supply

c. That Stellenbosch would put in motion a process to purchase electricity from Eskom directly and for this purpose would identify a site to build a substation from to which the current network will be transferred to.

6.2.3 Takeover Program

The following program was devised to which the process will be run:

a. Stellenbosch conducts a public participation process during March 2018, which is a requirement of NERSA

b. Report back to Councils in the March 2018 Council meetings upon a final MOU

c. Sign MOU

d. Apply for a license adjustment from NERSA

e. Place an order with Drakenstein to construct the 11kV connection at a quoted price of R1 500 000.

f. Finalise customer and asset detail to be taken over by May 2018

g. Conduct financial billing and prepayment system takeover exercises in May 2018

h. Do due diligence exercise in June 2018

i. Conclude a Electricity Purchase agreement with Drakenstein Municipality

j. Network takeover at 24:00 on 30 June 2018

k. Payment of R16 236 254 at earliest possible time when the financial systems goes open on the 2018/2019 Financial budget

6.3 Environmental implications

No environmental implications.

6.4 Financial implications

The financial implications are explained above but in summary:

Nr	Expense	Cost
1	Assessed capital cost	R16 236 253
2	Quoted Connection fee	R1 500 000

6.5 Legal Implications

e. The Constitutional, Act 108 of 1996, as amended,

Chapter 7 151(3): A municipality has the right to govern, on its own initiative, the local government affairs of its community, subject to national and provincial legislation, as provided for in the Constitution.

States under Schedule 4B inter alia:

- Electricity and Gas Reticulation

f. The Electricity Regulation Act, Act 4 of 2006, as amended

Amendment of licence

17(1) The Regulator may vary, suspend or remove any licence condition, or may include additional conditions-

(a) on application by the licensee;

(b) with the permission of the licensee;

(c) upon non-compliance by a licensee with a licence condition;

(d) if it is necessary for the purposes of this Act; or

(e) on application by any affected party.

(2) The Minister must prescribe the procedure to be followed in varying, suspending, removing or adding any licence condition.

6.6 Staff Implications

No staff will be taken over.

6.7 Risk Implications

The risk of a foreign electricity network to be taken over.

6.8 Previous / Relevant Council Resolutions:

14TH COUNCIL MEETING: 2017-11-29: ITEM 7.6.5

RESOLVED (nem con)

(a) that the content of this report be noted;

(b) that the Memorandum of Agreement (MOA) be noted;

(c) that approval be given to the Municipal Manager to negotiate a final version of the Memorandum of Agreement (MOA); and

(d) that Council considers the approval of the final Memorandum of Agreement (MOA) at a future Council Meeting.

6.9 Comments from Executive Management:

6.9.1 Director: Infrastructure Management

Writer of this report

6.9.2 Director: Community & Protection Services:

The Directorate Community and Protection Services support the item.

ANNEXURE 1

Caring
Innovative
Focussed

Neil
LYNERS
and Associates (RF) (Pty) Ltd

Consulting Engineers & Project Managers

Our reference : E17077/COR/TP/lv/05

Your reference :

27 November 2017

Postal Address : P O Box 4901 TYGERVALLEY 7536
Street Address : Office 2, Ground Floor, Riverside Place
South Gate Entrance, Carl Cronjé Drive
Tyger Valley Waterfront BELLVILLE 7530

Tel: +27 (0) 21 914 0300 | Fax: +27 (0) 21 914 0437
E-mail: bellville@lyners.co.za | Website: www.lyners.co.za

PNIEL AND HOLLANDSE MOLEN ELECTRICITY TAKEOVER (2017/18) – EXECUTIVE SUMMARY & ENGINEER'S RECCOMENDATION

Drakenstein currently supplies electricity to the Pniel and Hollandse Molen area. Stellenbosch municipality intend to take over the area and supply customers. Discussions have been on-going for many years.

Neil Lyners & Associates was appointed to analyse this and make recommendations.

The recommendations made are as follows:

- Stellenbosch pay directly for network separation, metering and billing costs as quoted by Drakenstein.
- Stellenbosch pay R 16 236 253, the depreciated replacement value, for the network.
- That a clean network break be made between the two municipalities and that Stellenbosch obtain a direct 66 kV supply from Eskom.
- All of this be subject to approval and granting of a license by NERSA.

The value of the network to be compensated for was previously agreed to be the Drakenstein Book value. This refers to the depreciated replacement values. The Engineer then undertook the required work to establish the book value:

- The network asset register was analysed and all assets in the takeover area was selected.
- These were then compared with the network operating diagrams and some field investigations were undertaken.
- The required changes were made to the MV assets.
- The LV assets lacked location details in the Drakenstein asset register.
- A proxy was developed and the LV assets were calculated from this.
- An assessment was done of the replacement values and installation dates and some adjustments were made
- The full depreciated replacement value was then calculated.

Neil Lyners & Associates can with a high level of certainty say that the R 16 236 253 is a fair representation of the book values of the assets to be transferred.

For any further information please contact the undersigned or Mr Hendrik Barnard – 083 654 8402.

Yours faithfully

Theo Potgieter Pr Eng
(Head of Electrical Department)
for LYNERS

ANNEXURE 2

MEMORANDUM OF AGREEMENT

Van der Spuy & Partners
member of the phatshoane henney group of associated firms
PAARL
□ 218 □ 860 1240 FAX: 860 1241

MEMORANDUM OF AGREEMENT

entered into and between

DRAKENSTEIN MUNICIPALITY

herein represented by

JOHAN LEIBBRANDT

in his capacity as Municipal Manager duly authorised thereto,

(hereinafter referred to as "DRAKENSTEIN")

and

STELLENBOSCH MUNICIPALITY

herein represented by

GERALDINE METTLER

in her capacity as Municipal Manager, duly authorised thereto

(hereinafter referred to as "STELLENBOSCH")

WHEREAS the Parties agreed in principal to carry over the Pniel area electricity network as shown in Annexure "A" (hereafter called "the Network"); to Stellenbosch Municipality; and

WHEREAS a reasonable price was calculated; and

NOW THEREFORE the Parties agree as follows:

1. **TRANSFER**

1.1. DRAKENSTEIN will transfer ownership of the Network to STELLENBOSCH as soon as the suspensive conditions have been met.

1.2. The Parties will endeavour to finish the transfer by 30 June 2018.

2. **PURCHASE PRICE**

2.1. STELLENBOSCH will pay R16 000 000.00 (SIXTEEN MILLION RAND) for the Network to DRAKENSTEIN.

2.2. Payment will be made into the **VAN DER SPUY & PARTNERS Trust account 404 975 1024, ABSA 334 210, REFERENCE: AR4834**.

2.3. STELLENBOSCH will make payments into the account named in clause 2.2 above as and when money becomes available. Moneys paid will be invested for STELLENBOSCH'S interest until date of payment.

2.4. The money will be paid to DRAKENSTEIN when the transfer has been completed and the conditions of clause 3 & 4 below has been met.

3. SUSPENSIVE CONDITIONS

This agreement is subject to:

3.1. STELLENBOSCH obtaining the approved from NERSA; and

3.2. the approval by the Municipalities of STELLENBOSCH and DRAKENSTEIN; and

3.3. the transfer of the power supply to the Network from DRAKENSTEIN to STELLENBOSCH or Escom

4. **SEPARATION AND CONNECTION COSTS**

4.1. STELLENBOSCH will pay all costs of the separation process including the possible upgrading costs.

4.2. STELLENBOSCH will also be responsible for all the Eskom connection fees.

5. **NO VARIATION**

5.1. No addition to or variation, deletion, or agreed cancellation of all or any clauses or provisions of this Agreement will be of any force or effect unless in writing and signed by the Parties.

6. **BREACH**

6.1. If a party ("Defaulting Party") commits any breach of this Agreement and fails to remedy such breach within 5 (five) Business Days of receipt of written notice requiring the breach to be remedied, then the party giving the notice ("Aggrieved Party") will be entitled, as its option;

6.2. to claim immediate specific performance of any of the Defaulting Party's obligations under this Agreement, with or without claiming whether or not such obligation has fallen due for performance and to require the Defaulting Party to provide security to the satisfaction of the Aggrieved Party for the Defaulting Party's obligations; or

6.3. to cancel the Agreement and claim damages.

6.4. The failure of any of the Parties at any time during the Contract Period of the Agreement to demand strict performance by the others of any of the obligations, warranties, covenants or representations herein contained shall not be construed as a continuing waiver thereof, and any party may at any time demand strict and complete performance from the others of any obligation, warranty, covenant or representation.

7. **DISPUTES**

If any party raises a dispute the parties shall:

7.1. Re-negotiate the terms of the transaction in order to resolve the dispute, or

7.2. If the dispute cannot be resolved, then either Party may refer the matter to the Referee for resolution as set out in ANNEXURE B

7.3. Notwithstanding the provisions of this clause 7, any Party shall be entitled to approach a competent court of law having jurisdiction to obtain any urgent relief which may be required by such Party.

7.4. Should urgent circumstances necessitate protection of any of the rights of a Party, such Party will be entitled, notwithstanding the terms hereof, to obtain interim legal relief on an urgent basis from any competent court in anticipation of the ruling of the Referee.

THUS DONE AND SIGNED at PAARL on the _____ day of _____ 2017 in the presence of the undersigned witnesses.

AS WITNESSES:

1. _____

2. _____ _____

for and on behalf of

DRAKENSTEIN MUNICIPALITY

THUS DONE AND SIGNED at PAARL on the _____ day of _____ 2017 in the presence of the undersigned witnesses.

AS WITNESSES:

1. _____

2. _____ _____

for and on behalf of

STELLENBOSCH MUNICIPALITY

ANNEXURE “B”

DISPUTE RESOLUTION BY REFEREE

1. Should any dispute arise between the Parties in respect of their rights and duties contained in this agreement, the Parties will meet immediately to try and resolve such dispute. Should they fail to resolve such dispute within 7 (seven) days after such dispute has been declared by any of the Parties, the said dispute will be submitted to a Referee for resolution in terms of the conditions contained herein, if any of the Parties request such resolution, in writing, from the other party.

2. Should urgent circumstances necessitate protection of any of the rights of a Party, such Party will be entitled, notwithstanding the terms hereof, to obtain interim legal relief on an urgent basis from any competent court in anticipation of the ruling of the Referee.

3. THE HEARING OF THE DISPUTE RESOLUTION WILL BE HELD:

3.1. At Paarl or any other place agreed between the Parties, as soon as possible after appointment of the Referee at the place and on the date and time as determined by him;

3.2. informally, with only the representatives of the Parties present (which may include a legal representative, except if the Referee rules otherwise);

3.3. on the basis that both Parties should present the Referee and the other Party with a written explanation of their viewpoint, containing full details of the matter according to their opinion, within 2 (two) days of appointment of the Referee;

3.4 according further to the procedure prescribed by the Referee for the resolution of the dispute, without the necessity to abide by formal procedural legal rules, in order to solve the dispute easily, economically and confidentially.

4. THE REFEREE:

4.1. will be entitled in his discretion to make enquiries and/or to obtain evidence and/or to accept further submissions from the Parties;

4.2. will be entitled to consult attorneys, advocates or any other expert in respect of any matter he considers expedient;

4.3. will make a ruling in his discretion in respect of the admissibility, relevancy, and importance of evidence, whether oral or written;

4.4. will, should the agreement be vague or imperfect regarding a substantive issue relating to the dispute, interpret the agreement in such a manner so as to give effect to the general purpose of the Parties as he understands it in the context of the agreement, and which is fair to the parties in the applicable circumstances;

4.5. will announce his ruling within 14 (fourteen) days after it has been requested in terms of clause 1, also taking into account the urgency of the matter in dispute;

4.6. will appoint the party responsible for his costs and that of any consulted expert and that party will pay such costs;

4.7. will act as expert and not as arbitrator.

5. THE REFEREE WILL, IF THE MATTER IS:

5.1 mainly a legal matter, be a practicing attorney with at least 15 (fifteen) years experience;

5.2. mainly an accounting matter be a practicing chartered accountant with at least 15 (fifteen) years' experience;

5.3. mainly an electricity matter be a practicing electrical engineer with at least 15 (fifteen) years' experience

5.4. any other matter, be an independent person appointed by agreement between both Parties.

6. Should the Parties fail to agree on whether the dispute is a legal, accounting or any other matter within 48 (forty eight) hours after a hearing for the dispute was requested, the matter will be considered to be a legal matter.

7. If the Parties fail to appoint a Referee within 48 (forty eight) hours after a hearing for the dispute was requested in terms of clause 1, the Referee will on request by any one of the Parties, be appointed by the President of the Cape Law Society (or his successor in title).

8. THE DECISION OF THE REFEREE WILL BE:

8.1. binding on all Parties to this agreement and may, if applicable, be made an order of the High Court of South Africa (Western Cape High Court, Cape Town) on request of any of the Parties in dispute; and

9. EXECUTED IMMEDIATELY

9.1. The Parties agree to keep the proceedings and matter of dispute, as well as any evidence given during the proceedings confidential, and will not, except for the purpose of an order in accordance with clause 8.1, disclose any information to the public.

10. THE PROVISIONS WITH REGARD TO THE DISPUTE RESOLUTION SET OUT ABOVE:

10.1. constitute an irrevocable consent by both Parties to any proceedings and neither Party will have the right to withdraw, claim or declare that he/she is not bound to the abovementioned provisions;

10.2. is divisible of the agreement and will be of full force and effect notwithstanding the termination, or invalidity for any reason whatsoever, of the agreement.

_____

5.6.4	UPDATE REPORT ON THE DROUGHT SITUATION AS WELL AS THE COSTING THEREOF

Collaborator No:
IDP KPA Ref No:
Meeting Date: ***14 March 2018***

1. SUBJECT:
UPDATE REPORT ON THE DROUGHT SITUATION AS WELL AS THE COSTING THEREOF

2. PURPOSE

To provide an update on the Drought Situation and the Preparation of augmenting the supply of water as well as the costing thereof.

3. FOR DISCUSSION

Executive Mayor and Mayoral Committee

4. EXECUTIVE SUMMARY

5. RECOMMENDATIONS

(a) that this report be noted;

(b) that MAYCO notes the total required funding to complete the full project at R77 980 756.94 rounded off to R78 000 000;

(c) that MAYCO accepts that a total of R67 071 468.66 must be spent this year to complete a workable borehole water networked system;

(d) that an amount of R10 400 000.00 be considered in the 2018/19 budget to formally complete all borehole augmentation work;

(e) that the 2017/18 budget be adjusted to accommodate the R67 071 468.66 intended expenditure and that the shortfall be found from other projects; and

(f) that an updated report be brought to MAYCO in May 2018.

6. DISCUSSION / CONTENTS

Please find full report attached as ANNEXURE A.

6.1 Background

The Stellenbosch Municipality has been actively fighting water losses and non-revenue water through the water conservation and water demand management project. This project includes various initiatives including pipe leak repairs, pipe replacement, domestic leak repairs, customer meter replacement, water meter audits, installation of volume controlled meters, pressure management etc. Various contracts

are on-going and significant strides and achievements have been made to drive physical water losses downs from about 21% of 15% for the Stellenbosch area.

The domestic leak repairs tender is in process to be advertised to be renewed.

The on-going drought in the Western Cape is impacting on water supply security and the likelihood of water in the 6 large dams supplying Cape Town and surrounding towns running out by early 2018 has become a reality. The Municipality has therefore decided to implement a Drought Response Plan over and above the water conservation and water demand management efforts to implement the emergency measures required to mitigate the effects of the drought. This progress report provides a high level progress update on the Drought Response Plan implementation.


CWLU3

Drought Response Plan

5Hatch Africa, the consultants appointed for the water conservation and water demand management project implementation were given to task to compile a Drought Response Plan (90 days action plan) in June 2017. The first draft was compiled by 9 June 2017 and the plan is continually being updated.

The Drought Response Plan details a set of actions for drought mitigation based on triggers and criteria agreed upon by the Municipality.

The plan includes the outcome and recommendations from various consultant studies, and specialist studies and documents to combined efforts being implemented for drought mitigation.

The Municipality issues a weekly Drought Monitoring Report where all dams levels, days of water storage remaining and other critical information is published and circulated to stake holders.

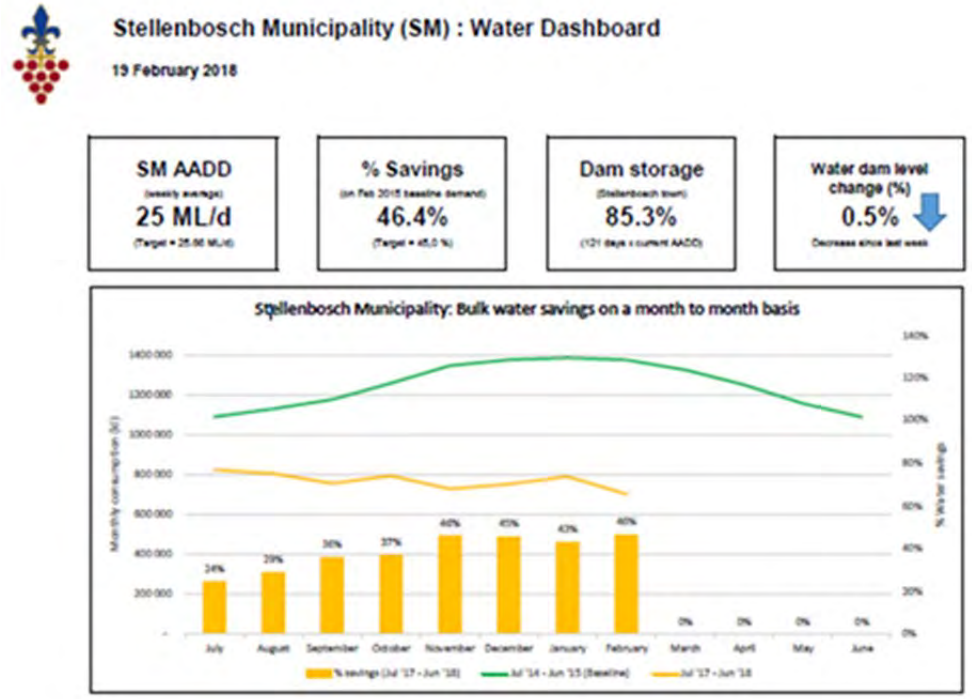
The Plan also includes disaster risk management actions to be implemented in the event that the dams supplying Stellenbosch actually run out of usable water.

Water Restrictions

- The CoCT and Stellenbosch Municipality have now introduced Level 6B Water Restrictions from 1 Feb 2018.
- Stellenbosch has implemented level 6B Water Restrictions from 19 Feb 2018.
- Water restrictions continue to be an important tool to reduce consumer demand and the Municipality is actively promoting responsible water usage by distributing posters and flyers, sign in all public building and through billboards.

Drought Monitoring

- Stellenbosch Municipality repeats on a weekly base to DWS and to other official structures on drought interventions and statistics.
- Stellenbosch Dashboard.



Stellenbosch Municipality: Bulk water savings per supply area

Town/ supply area	Baseline demand (Feb 2015) ML/d	Current demand (average of last 7 days) ML/d	% Reduction (Target – 45%)
Stellenbosch town [1]	29.4	15.9	46.0%
Franschhoek area	6.2	2.6	61.3%
Dwars River area	3.2	2.8	12.6%
Klapmuts [2]	2.3	1.3	44.3%
Rural water schemes	6.6	2.6	62.2%
Total	**46.6**	**25.0**	**46.4%**

Stellenbosch Municipality: Bulk water savings per source

Town/ supply area	Baseline demand (Feb 2015) ML/d	Current demand (average of last 7 days) ML/d	% Reduction (Target – 45%)
CCT	16.4	8.5	48.0%
SM - WCWSS [3]	30.2	16.5	45.5%
Total	**46.6**	**25.0**	**46.4%**

[1] De Zalze supplied from Faure rural water scheme during 2014/15 financial year, currently supplied with water from the Stellenbosch system.

[2] Current demand is average of last 14 days

[3] Integrated system

The table indicates also that we have found about 161 l/second, whereas we are currently using 248 l/s. We are therefore attempting to find sufficient water to be able to deliver 248l/s and some boreholes are already being drilled.

The following conditions were found which were out of the ordinary:

a. Effective boreholes tended to be further away from existing networks
b. Quality of water tended to contain more impurities such iron, manganese.
c. The possibilities of finding harmful pathogens in some case are quite high.
d. As a result the network to be installed and the purification standard was found to be more expensive.

Table 6.2.1: Estimated capacity of holes already drilled.

Area	Required Yield AADD (Max Quarter in last year) (kl/d)	Required Yield AADD (Max Quarter in last year) l/s	Savings: 45% of Yield (kl/d)	Savings: 45% in (l/s)	AADD: Allowed (kL/d)	AADD: after 45% (l/s)	Number of Existing Boreholes	Yield of existing boreholes (kl/d)	Yield (l/s)	New Boreholes already drilled	Expected Yield from New Boreholes already drilled(l/s)	Existing Borehole Combined Yield (l/s)	Number of holes to be drilled	Yield (l/s) of Boreholes to be drilled	Yield of Boreholes to be drilled (kl/d)	Total Target Combined Yield (l/s)
Stellenbosch	26 752	310	12 038	139.3	14 714	170.3	5	4 493	52.0			52.0	9	63	5 443	115.0
Franschhoek (Wemmershoek)	3 528	41	1 588	18.4	1 940	22.5				4	46.9	46.9				46.9
Kylemore (Dwarsrivier)	2 142	25	964	11.2	1 178	13.6	2	847	9.8	1	3.0	12.8	3	15	1 296	27.8
Muldersvlei	376	4	169	2	207	2.4	0					0.0				0.0
Polkadraai	952	11	428	5	524	6.1	0					0.0				0.0
Faure, De Zalze & Raithby	1 663	19	748	8.7	915	10.6	3					0.0				0.0
Croydon							0					0.0				0.0
Helderberg	46	1	21	0	25	0	0					0.0				0.0
Meerlust	45	1	20	0	25	0				1	1.1	1.1				1.1
Klapmuts	1 603	19	721	8.3	882	10.2										
Kaylenhof	1 885	22	848	9.8	1 037	12										
Total	3 488	40	1 570	18.2	1 918	22.2				5	48.0	48.0	3	15	1 296	63.0
TOTAL	38 962		17 546	203	21 446	248	10	5 340	62	10	96	161	15	93	8 005	254

Table 6.2.2: Details of holes already drilled

Borehole (BH)	Town/Area	Status	Comment	bp test results						Yield needed	Max yield of	Safe		Yield Comment
			Comment	Max drill depth (m)	Pump rate (l/s)	Pump duration (h)	Rest duration (h)	Safe yield (kl/d)	recommended Pump depth					
Cloetesville BH	Stellenbosch	Existing BH	Potential production B H		8.5	12	12	367		9 936	11 016	5 551	SS	Tested
Doornbosch BH		Existing BH	Potential production B H		15.0	12	12	648						Tested
Die Braak BH		Existing BH	Production BH		15.0	12	12	648						Tested
Van der Stel BH		Existing BH	Production BH		15.0	16	8	864						Tested
Kayamandi BH		Existing BH	Potential production B H		10.0	12	12	432						Tested
STB_Centre_ExBH_1		Completed	Production BH		15.0	12	12	648	139					Blow yield Tested
STB_Centre_ExBH_2		Completed	Production BH		10.0	12	12	432	100					Blow yield Tested
STB_Centre_ExBH_3		Completed	Production BH		15.0	12	12	648	100					Blow yield Tested
STB_Centre_ExBH_4		Completed	Production BH		10.0	12	12	432	100					Blow yield Tested
STB_Centre_ExBH_5		Not drilled	Feb-18		10.0	12	12	432	unknown, 70					Not yet drilled
STB_Centre_ExBH_7		Not drilled	Postponed											
Drill_Site_Horizontal		Not drilled	Postponed											
STB_PDK_ExBH_1		Not drilled	Postponed											
STB_PDK_ExBH_2		Completed	DryB H (to be verified)											
STB_PDK_ExBH_3		Completed	Exploration BH only	200	4.0	12	12		36					Drilled, not tested
STB_PDK_ExBH_4		Completed	DryB H	200										
JH_ExBH_1	Jonkershoek	Started	Feb-18			12	12		60					Not yet drilled
JH_ExBH_2		Not drilled	Feb-18			12	12		60					Not yet drilled
JH_ExBH_3		Not drilled	Feb-18			12	12		60					Not yet drilled
JH_ExBH_4		Not drilled	Feb-18			12	12		60					Not yet drilled
WH_ExBH_1	Wemmershoek	Completed	Potential production B H	190				0		4 052	4 925	3 038	EF	
WH_ExBH_2		Completed	DryB H	255										
WH_ExBH_3		Completed	Exploration/ Monitoring	220										
WH_ExBH_4		Completed	Not drilled											
WH_ExBH_5		Not drilled	Postponed											
WH_ExBH_6		Completed	DryB H											
WH_Redrill_BH_2		Completed	Exploration/ Monitoring	261										
WH_P_Bh1		Completed	Production BH	400	7.0	12	12	302	150					Drilled, not tested
WH_P_Bh2		Completed	Production BH		20.0	16	8	1 152	150					Tested, awaiting yield test data
WH_P_Bh3		Completed	Production BH		10.0	12	12	432	150					Drilled, not tested
WH_P_Bh4		Completed	Production BH		20.0	16	8	1 152	150					Drilled, not tested
FH_ExBH_1	Franschhoek	Not drilled	Postponed											
FH_ExBH_2		Not drilled	Postponed											
FH_ExBH_3		Not drilled	Postponed											
FH_ExBH_Horizontal1		Not drilled	Postponed											
FH_ExBH_Inclined_1		Not drilled	Mar-18											
KLM_ExBH_1	Kylemore	Completed	Potential production B H	280	2.0	12	12	86	120	2 402	2 912	1 317	EA	Drilled, not tested
KLM_ExBH_2		Completed	DryB H											
KLM_ExBH_3		Completed	DryB H											
KLM_ExBH_4		Completed	Production BH		10.0	12	12	432	80					
KLM_ExBH_5		Completed	Low yielding		3.0	12	12	130	80					Drilled, not tested
KLM_ExBH_6		In progress	Dry											
KML_EXbh_1H		In progress	Potential production B H		1.7	24	0	147						
Kylemore BH3		Existing BH	Production BH		3.0	16	8	194						Tested
Kylemore BH2		Existing BH	Production BH		10.0									
Phiel BH	Phiel	Existing BH	Potential production B H		4.0	16	8	230						
ML_ExBH_1	Meerlust	Completed	Production BH	87	1.5	16	6	97		95	130	97	Meerlust	Tested
ML_ExBH_2		Not drilled	Postponed											
KM_ExBH_3	Klapmuts	Redrill	BH vandalised	156	3.0	12	12		60	5 443	3 888	1 728	KM	Drilled, not tested
KM_ExBH_4		Completed	Potential production B H		4.0	12	12	173	108					Drilled, not tested
KM_ExBH_5		Completed	Production BH		3.0	12	12	130						
KM_ExBH_6		Completed	Production BH		3.0	12	12	130	128					Drilled, not tested
KM_ExBH_8		Completed	Production BH		4.0	12	12	173	80					Drilled, not tested
		In progress	Feb-18		7.0	12	12	302	80					
KM_ExBH_13		Completed	Feb-18		7.0	12	12	302	80					
KM_ExBH_1	Koelenhof	Completed	Production BH	200	4.0	10	14	144	120				KK	Tested
KM_ExBH_2		Completed	Production BH	180	2.0	12	12	86	136					Tested
KM_ExBH_7		Not to be drilled	Postponed											
KM_ExBH_9		Completed	DryB H											
KM_ExBH_10		In progress	Low yielding											
KM_ExBH_11		Completed	Production BH	60	4.0	10	14	144	60					Tested, awaiting yield test data
KM_ExBH_12		Not drilled	Jan-18											
Old_Klapmuts borehole		Completed	Production BH	150	4.0	10	14	144	146					Tested

More funding is therefore required. The funding detail is shown in item 5.4 below

- Consultants appointment for WULA (Water use license applications). The DWS originally gave us 2 years to complete but this is now to be put into motion due to all other third party involvement.
- ESKOM only wanted to do connections to boreholes if Water Use Licenses are in place.
- Environmental approvals near wetlands and a combination of other environmental aspects.
- Groundwater monitoring and measurement implemented by DWS
- New groundwater use guidelines.
- Environ impacts of pipelines to be laid need water volumes and licensing.
- Increased capital works increased the consultancy fees according to ECSA fees.
- Tariff study to determine best practice
- Environmental consultants appointed to monitor work in environmental sensitive areas.
- All other working areas also to be rehabilitated after the projects are completed.

6.3 Environmental implications

The position of boreholes are determined as follows:

a. Probable geological positioning of underground aquifers

b. As close as possible to water purification plants.

c. As close as possible to reservoirs

d. As close as possible to pipe and electricity networks.

In some cases the final position of a hole with sufficient water has fallen within environmentally sensitive areas such as Wemmershoek and Jonkershoek or heritage sensitive areas such as Die Braak. It is also true that these areas proved to have the biggest sources of water. In fact about 80% of our water needs were found in these areas. The Municipality did get a Directive which allowed it to drill in sensitive areas and the Municipality found the most water in these areas. However in all of these cases boreholes were made intensely deep enough to penetrate the first rock layer, normally found at about 100m depth. The borehole sleeving was designed to seal off the upper layer such that the sensitivity of the upper layer of water was protected, and therefore also the primary source of water to plants in these areas. The boreholes in these areas are between 200m and 400m deep.

We also found problems where permission was granted to drill a hole but permission for the pipe connecting hole became a bone of contention. The National Environmental Management Act (NEMA) endeavours to protect the environment at far as practically possible, but the Act states that the upkeep of human life is more important than the upkeep of the environment where conditions are in contradiction.

Various newspaper reports were written from concerned citizens of the environment, but it must be noted that human life is of primary importance as stated within the Constitution:

Human dignity

10. Everyone has inherent dignity and the right to have their dignity respected and protected.

Life

*11. **Everyone has the right to life**.*

Environment

24. Everyone has the right -

*a. to an environment that is **not harmful to their health or well-being**; and*

b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -

i. prevent pollution and ecological degradation;

ii. promote conservation; and

iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Health care, food, water and social security

27. (1) Everyone has the right to have access to -

a. health care services, including reproductive health care;

*b. sufficient food and **water**; and*

c. social security, including, if they are unable to support themselves and their dependants, appropriate social assistance.

*(2) The state must take reasonable legislative and **other measures, within its available resources, to achieve the progressive realisation of each of these rights**.*

(3) No one may be refused emergency medical treatment.

It is therefore clear that the Constitution puts the life of humans first and therefore the right to water becomes paramount in a state of drought. Any piece of contrary legislation would become invalid if it contradicts the above and would therefore not be *reasonable* legislation.

The use of environmentally sensitive sites would therefore not be able to prevent the search for life-giving water and it is therefore felt that those places where water was found in environmentally or heritage sensitive areas, such as:

- Wemmershoek
- Jonkershoek
- Die Braak

Is justified within the severe drought conditions and within the State of Emergency we find ourselves in, as a result of this drought.

6.4 Financial implications

6.4.1 Increased costs of construction due to:

- Production boreholes are further away from existing infrastructure.
- Klapmuts and Dwarsrivier needed more boreholes to produce needed volumes of water
- Wemmershoek borehole water quality indicates high concentrations of minerals including iron and manganese that was not present in the existing borehole water. An additional 30 l/s purification plant needed in Wemmershoek to ensure correct water quality.
- Additional plant to be installed at Cloetesville to create a collection point at the sportsground to accommodate filling points.
- Additional borehole yield tests, beneath the blow yielding tests, to be included in the WULA's.
- Pipeline routes to be changed due to property and road issues.

6.4.2 Total projected costs in line with approved deviation approvals

- All divisions for drillers are based on a rates quotation. The amount of work determines the total payment.
- The civil and mechanical contractors are also appointed on the deviation on a rate per task or work done in line with the deviation.
- Existing consultancy fees are based on the ECSA fees and according to their roaster appointment.
- The deviation states that the exact amount of the intervention is uncertain but will be determined by the available funds and the deviations approved.

6.4.3 Total Funding needed to fully complete work

DROUGHT RESPONSE - POTABLE WATER AUGMENTATION BOREHOLES				
Financial Summary				
Contractor	Description	Work Orders (estimate)		Adjusted Work Order (estimate)
Civil	CSV		R 7 315 218.60	
		Total	R 7 315 218.60	R 2 815 218.60
Civil	EXEO		R 6 840 773.36	
		Total	R 6 840 773.36	R 4 340 773.36
Mechanical	Water Solutions SA		R 9 381 288.00	
		Total	R 9 381 288.00	R 9 381 288.00
Mechanical	Veolia		R 5 573 012.00	
		Total	R 5 573 012.00	R 4 873 012.00
Mechanical	Sustainable Engineering		R 10 725 949.00	
		Total	R 10 725 949.00	R 10 725 949.00
Mechanical	Aquamat		R 3 994 515.98	
		Total	R 3 994 515.98	R 3 994 515.98
Driller	JM/Senzogystix			
		Total	R 2 000 000.00	R 1 571 129.08
Driller	SA Rotsbore			
		Total	R 8 000 000.00	R 8 428 472.00
Driller	EDRS			
		Total	R 5 000 000.00	R 3 943 856.64
Driller	Master Drilling			
		Total	R 8 000 000.00	R 9 395 954.00
GEOSS	Geologists			
		Total	R 1 500 000.00	R 1 500 000.00
	Consultants			
		Total	R 1 000 000.00	R 1 000 000.00
Cornerstone	Environmentalists			
		Total	R 500 000.00	R 500 000.00
	Consultants			
		Total	R 3 650 000.00	R 2 600 000.00
	Consultants		-	
		Total	R 4 500 000.00	R 2 000 000.00
TOTAL PRICE (VAT Excluded)			R 77 980 756.94	R 67 070 168.66
Difference			R 10 910 288.28	

Funding that can be delayed to a next year:

Description	Cost Estimation
Top 100 Water users - Water Meters	R 2 000 000.00
Fire Brigades Civil Works - (4 X R250 0000)	R 1 000 000.00
PRVs - (8 X R500 0000)	R 4 000 000.00
Fire Brigade - Tank installations (4 X R350 0000)	R 1 400 000.00
Stellenbosch Town to Ida's Valley Water Works pipe line/ BH installations (10 X R200 000)	R 2 000 000.00
TOTAL	**R 10 400 000.00**

It is therefore proposed that we limit this year's spending to R67 070 168.66, but that we consider the amounts mentioned above in the 2018/19 Financial budget deliberations

6.5 Legal Implications

- Municipal Finance Management Act, Act 56 0f 2003, as amended
- Disaster Management Act, Act no 57 of 2002, as amended
- National Environmental Management Act, Act No. 107 of 1998, as amended

6.6 Staff Implications

Currently all additional functions are performed by contractors and will do so for a period of time. After their contracts have expired, our own staff would have to take over. This is expected to be required from July 2019 onwards.

6.7 Risk Implication

The Drought Risk has happened and is therefore called an issue. The Issue is being controlled as described in this report.

5.7	**PARKS, OPEN SPACES AND ENVIRONMENT: (PC: CLLR N JINDELA)**

NONE

5.8	**PROTECTION SERVICES: (PC: CLLR Q SMIT)**

NONE

5.9	**YOUTH, SPORT AND CULTURE: (PC: XL MDEMKA (MS))**

NONE

6.	**REPORTS SUBMITTED BY THE MUNICIPAL MANAGER**

NONE

7.	**REPORTS SUBMITTED BY THE EXECUTIVE MAYOR**

NONE

8.	**MOTIONS AND QUESTIONS RECEIVED BY THE MUNICIPAL MANAGER**

NONE

9.	**URGENT MATTERS**

10.	**MATTERS TO BE CONSIDERED IN-COMMITTEE**

NONE