



a world class African city

INSPIRE - GEOSPATIAL WORLD FORUM 2015

LISBON, PORTUGAL



Marcelle Hattingh

Director: Corporate Geo-Informatics

City of Johannesburg

South Africa

<http://www.joburg.org.za>



This is the story of a woman from Africa and her fight for survival in the African jungle of spatial information.

The scene is set in the city fondly known as Egoli, the City of Gold, at the southern tip of the continent.

The presentation is dedicated to all Geo-Scientists who have experienced the pains and delights of spatial information management.

The logo for Joburg, featuring the word "Joburg" in a stylized font with a yellow dot above the letter 'o'.

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Chapter 1

Setting the Scene



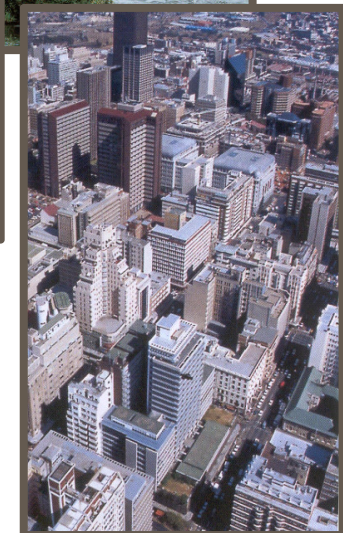
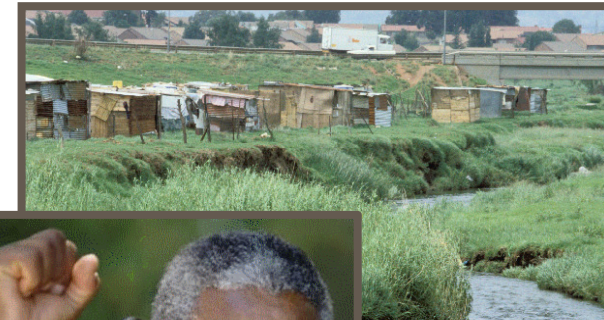
a world class African city

BACKGROUND

City facts

Distance To Lisbon From Johannesburg is:
5091 miles / 8193.17 km / 4423.96 nautical miles

- Johannesburg is larger than London, Sydney and New York, it covers 1644 km²
- It will take you 4 days to walk from the southern tip of Johannesburg to the central business district.
- Johannesburg is a City of disparities.
- Of the more than 1 million households some 33% are estimated to be housed in informal settlements or in backyard shacks.
- Around 29% (over 1 million) of the City's residents live in Soweto.
- Nelson Mandela started his career in Soweto and has been the City's most loved and celebrated citizen. We bid farewell to him on 6 December 2013.





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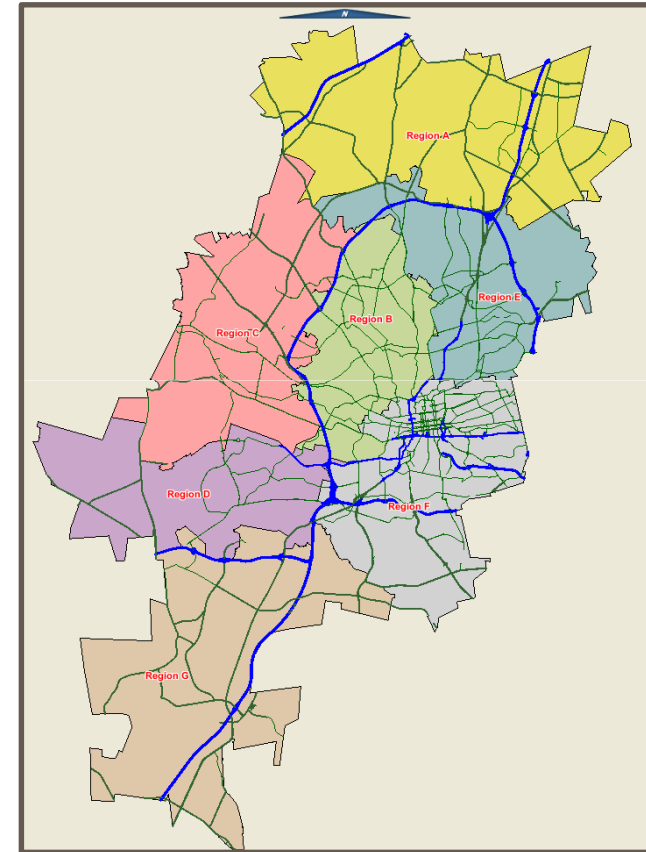
- Area = 1644 km²
- Stands (properties) = ± 850 000
- Total population = 4 434 827
- Formal Households = 1 173 555
- Informal Households = 261 294

Rate of change in the City per annum

- Townships = ± 240
- Subdivisions = ± 265
- Consolidations = ± 240
- Rezoning = ± 750
- Consent uses = ± 3 000
- Title Deeds = ± 495 000
- Street addresses = ± 8 000

BACKGROUND

City facts





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BACKGROUND

Municipal elections

news24
Breaking News. First
LAST UPDATED: 2012-09-18, 11:58

Met
View
Met

News Opinion Business Sport Lifest

ANC takes Johannesburg

2011-05-20 07:15

Pretoria - The African National Congress has won control of the Johannesburg metro, receiving more than 1.2 million votes, the Independent Electoral Commission confirmed early on Friday.

According to the final results, the ANC received 1 272 354 votes and as a result secured a total of 153 seats out of a total of 260 seats.

The party received 59% of the 2 154 506 votes cast, while the Democratic Alliance was the second largest party with almost 35% of the vote, securing 90 seats.

**Municipal Elections
18 May 2011**



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BACKGROUND

New Mayor appointed

New Mayor ... Accountability

Tuesday, September 18 2012 22°C Johannesburg

Archive

New Johannesburg mayor promises accountability

BY LIVHUWANI MAMMBURU, MAY 24 2011, 00:00 | 0 COMMENT(S)



Newly appointed City of Johannesburg mayor Parks Tau, who is still to be officially elected in the council sittings this week, says the management and staff of the city of Johannesburg must be held accountable for the job they do.

Tau was addressing the media today during the announcement by the ANC Gauteng of the 11 mayors who are going to lead various municipalities that were won by the party.

"We need to improve the performance of the management and staff as the organisation," he said.

"By that I mean, we need to make sure that we improve accountability of the management, of staff and to ensure that everybody is held accountable for the work they are employed to do," Tau told media.

"The people of Johannesburg, clearly during the election campaign articulated to us quite clearly that they need value for their money. All employees of the city must work hard to make sure that we improve service delivery."

7

Tau says going forward the city of Johannesburg approach was about consolidating the programme of transformation.

JOHANNESBURG July 23 Sapa | 23 July, 2012 14:19

Only five percent of municipalities obtained clean audit reports in the financial year 2011/2012, the auditor-general revealed on Monday.

However, Auditor-General Terence Nombembe said he was excited by the fact that six new municipalities had joined the clean audit category, taking the number to 13.

The municipalities with clean audits were in KwaZulu-Natal, Limpopo, Mpumalanga, and the Western Cape.

None of the municipalities in the Eastern Cape, Free State, Gauteng, Northern Cape and North West received clean audit reports.

But Nombembe said almost half (45 percent) obtained unqualified audit reports but with concerns.

These municipalities received unqualified reports after corrections during the audit process. Among the issues identified as a challenge were **procurement, service delivery, and errors in financial information.**

None of the country's metros received clean audits while 13 percent of municipalities did not submit financial statements in time for auditing.

There are currently **343 municipalities** in the country.

Nombembe commended municipalities who were putting in an effort to obtain clean audit statements.

"They are moving forward towards the clean audit space by consistently committing to take ownership of municipal performance practices, insisting on adequately qualified staff and effective performance management practices," said Nombembe.



City of Johannesburg
Office of the City Manager
Office of the Executive Mayor

2nd Floor, Council
Chamber Wing
Metropolitan Centre
158 Civic Boulevard

PO Box 1049
Johannesburg
South Africa
2000

Tel +27(0) 11 407 7300
Fax +27(0) 11 403 1012
www.joburg.org.za

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Ms. Marcelle Hattingh,
Director
Corporate GEO - Informatics
8th Floor – A Block
Metro Centre
Braamfontein 2017

Delivery by hand

6 June 2012

Dear Marcelle,

Auditor General matters relating to the City of Johannesburg

As you are aware, the City of Johannesburg was issued with a qualified audit opinion by the Auditor General for the 2010/2011 financial year ended 30 June 2011 as a result of serious discrepancies relating inter alia to meter readings, rates and billing issues for the year under review.

It is my specific requirement that these issues, or any similar issues, relating to the City of Johannesburg should not again receive an adverse audit opinion from the Auditor General for the 2011/2012 financial year ending on 30 June 2012. As you are also aware, Project Zero Tolerance was introduced earlier this year to specifically focus on the issues which gave rise to the audit qualifications last year, and I understand that you have been part of the Management Team which has been leading the resolution processes required through this project to avoid similar qualifications this year.

I am attaching a schedule which encompasses the 40 major issues that need to be resolved by 30 June 2012 in order to ensure that the City of Johannesburg does not once again receive audit qualifications relating to these issues. You will note from the attached schedule that you have been allocated the Specific Accountability for the resolution of items 1 and 2 on this attached list.

I wish to reiterate that what is meant by "Specific Accountability for the resolution of" in this context means that the obligation has been placed solely on your shoulders to resolve the issues which have been allocated to you, which allocation you have accepted, and for which issues you have accepted the responsibility to resolve in a transparent and correct manner on behalf of the City of Johannesburg by 30 June 2012 so as to avoid a repeat of the 2010/2011 audit qualification.

BACKGROUND

Accountability allocated

While you will obviously utilise the services of other employees in reaching a resolution of these issues, it is incumbent on you to assume control of the resolution process and to ensure that they are resolved without fail.

The satisfactory resolution of these issues, by way of this letter, therefore become and now form part of your performance requirements for the financial year.

I have no doubt that you will contribute significantly to this process of resolving the issues which gave rise to the audit qualifications last year, and I assure you of all my support and that of the rest of Senior Management through the City's operations in resolving these matters to the satisfaction of the Auditor General.

Please sign a copy of this letter as acknowledgement of your receipt and acceptance thereof and return it to me.

Yours Sincerely,

Gerald Dumas
Chief Operations Officer

- Annexure

“Specific Accountability for the resolution of...”

... means that the obligation has been placed solely on your shoulders to resolve the issues which have been allocated to you ...



Item 1 Properties in existence but not on LIS
Item 2 Deeds ownership data processed on LIS

BACKGROUND

Accountability allocated

City of Johannesburg AG Qualification Issues					
Item	Risk	Management Accountability	May 2012 reconciliation done	June 2012 reconciliation done	
Rates					
1	Properties in existence but not on LIS	Medium	Marcelle Hattingh		
2	Change of ownership by Deeds Office not processed on LIS	Medium	Marcelle Hattingh		
3	Properties on LIS but with incorrect or missing categories	Medium	Piet Eloff		
4	Properties on LIS but with incorrect or missing valuation	Medium	Piet Eloff		
5	Properties on LIS but not on SAP	High	Sihle More		
6	Properties on SAP but not on LIS	High	Sihle More		
7	Properties with different categories on LIS and SAP	High	Sihle More		
8	Properties with different valuations on LIS and SAP	High	Sihle More		
9	Change of ownership not processed on SAP - rates	Medium	Sihle More		
10	Change of ownership not processed on SAP - sewerage	Medium	Mike Dube		
11	All issues still outstanding on Risk Register for Rates and Taxes	High	Sihle More		
Water					
12	Properties in SAP without water meter or service	High	Graham Luden		
13	Properties with tariffs different to that for rates category for the properties	Low	Graham Luden		
14	Daily reconciliation and analysis between Download and Upload of meters not performed	High	Graham Luden		
15	Reconciling items in 10 above not cleared on a daily/as soon as possible basis	High	Graham Luden		
16	Good meter readings deleted and replaced by estimated readings on SAP	High	Graham Luden		
17	Meters billing interims for 6 months or longer	High	Graham Luden		
18	SAP accounts with deposits paid for water without meters	Medium	Mike Dube		
19	SAP accounts with new service connection paid for without water services	Medium	Mike Dube		
20	Changed meter information not being provided to SAP	High	Graham Luden		
21	Changed meter information provided not being processed in time on SAP	High	Mike Dube		
22	SAP accounts billed zero consumption or service charges only	High	Mike Dube		
Power					
23	Properties in SAP without electricity meter or service	High	Sicelo Xulu		
24	Properties with tariffs different to that for rates category for the properties	Low	Sicelo Xulu		
25	Daily reconciliation and analysis between Download and Upload of meters not performed	High	Sicelo Xulu		
26	Reconciling items in 10 above not cleared on a daily/as soon as possible basis	High	Sicelo Xulu		
27	Good meter readings deleted and replaced by estimated readings on SAP	High	Sicelo Xulu		
28	Meters billing interims for 6 months or longer	High	Sicelo Xulu		
29	SAP accounts with deposits paid for electricity without meters	Medium	Mike Dube		
30	SAP accounts with new service connection paid for without electricity services	Medium	Mike Dube		
31	Changed meter information not being provided to SAP	High	Sicelo Xulu		
32	Changed meter information provided not being processed in time on SAP	High	Sicelo Xulu		
33	SAP accounts billed zero consumption or service charges only	High	Mike Dube		
34	SAP accounts servicing LPU's for billed minimum demand without consumption	High	Mike Dube		
Revenue					
35	Outsorts not reconciled and cleared on a daily basis	High	Mike Dube		
36	Billing error logs not reconciled and cleared daily	High	Mike Dube		
37	Invoice error logs not reconciled and cleared daily	High	Mike Dube		

Page 1



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BACKGROUND

Performance management scorecard

Performance Scorecard:
[City of Johannesburg 2011/2012]

PERFORMANCE SCORECARD – SECTION 57 & FIXED TERM CONTRACT EMPLOYEES			
Employee Name:	Marcelle R. Hattingh	Employee Number	30038484
Job Title:	Director: Corporate Geo-Informatics	Department:	Development Planning & Urban Management
Manager:	ED: Development Planning & Urban Management	Date (Financial Year):	2011/2012
Position Purpose:	Provide an effective and efficient spatial information service that meets the		

Signed and accepted Signed by the DPUM	Weight		KPI No.	Key Performance Indicators	Baseline	Target	Evidence	Means of Verification
	SPO	KPA						
			7.3	Attainment of a clean audit report for CGIS	Qualified Audit	1=Disclaimer 2=Qualified audit 3=Unqualified audit 4=Clean audit report with matters of emphasis 5= Clean audit report with unrepeated issues from the previous AG's report	Audited Financial Statements and Performance Report	Audited Financial Statements and Performance Report approved by Mayoral Committee and Council

**Performance scorecard:
Clean audit report**



BACKGROUND

New organisational structure

Changes in the City: New organisational structure

Fixed Term Contract employees:

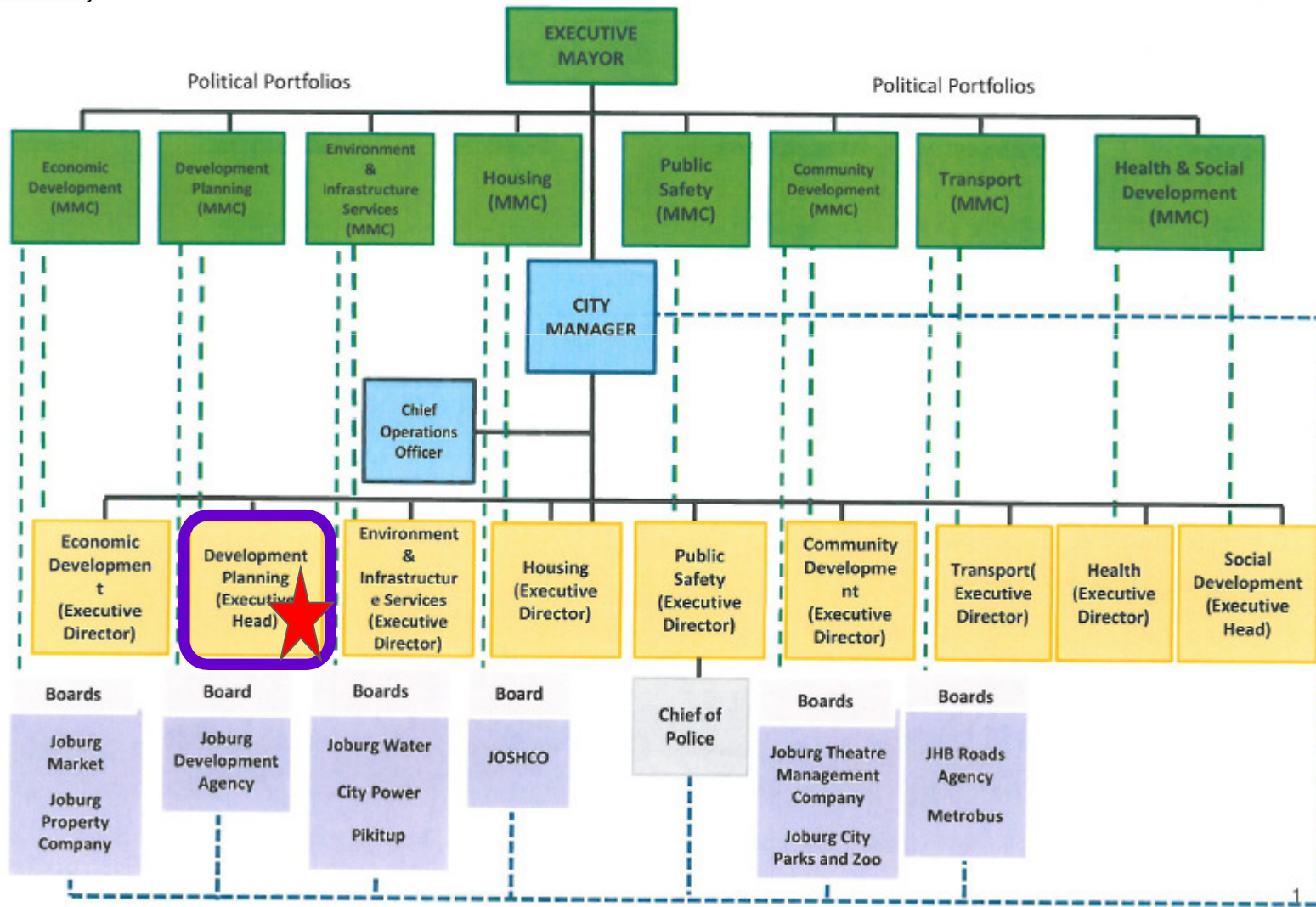
- Review of Role Descriptions
- Grading
- Advertise posts
- Apply for positions
- Recruitment process
- Appointments



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BACKGROUND

New organisational structure



The logo for Joburg, featuring the word "Joburg" in a stylized font with a yellow dot above the letter 'o' and a thin black line above the letters 'j' and 'o'.

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Chapter 2

So you think you can count?



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CITY OF JOHANNESBURG

Audits and Accountants



"You seem to have the qualifications we're looking for in an accountant"





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CITY OF JOHANNESBURG

Balance Sheet

Trial Balance					
AC	Name	Opening	Debits	Credits	Closing
1000	Cash in Bank	42500.00	17120.00	10102.10-	49517.90
1200	Accounts Receivable	51000.00	17120.00	17120.00-	
1500	Fixed Assets- Buildings	310000.00	0.00	0.00	310000.00
1501	Accum Depr- Buildings	0.00	0.00	0.00	0.00
1600	Fixed Assets- Furniture		0.00	0.00	10000.00
1601	Accum Depr- Furniture	0.00	0.00	0.00	0.00
1700	Fixed Assets- Automotive	50000.00	0.00	0.00	50000.00
1701	Accum Depr- Automotive	0.00	0.00	0.00	0.00
1800	Fixed Assets- Computers	80000.00	0.00	0.00	80000.00
1801	Accum Depr- Computers	0.00	0.00	0.00	0.00
1900	Fixed Assets- Art	510380.00	0.00	0.00	510380.00
1901	Accum Depr- Art	0.00	0.00	0.00	0.00
1999	Inventory	0.00	0.00	0.00	0.00
2000	Accounts Payable- Trade	18200.00-	246.10		18200.00
2100	Loans Payable	100000.00-	5000.00	0.00	95000.00
2200	Payroll Payable	0.00	4856.00	4856.00-	0.00
2250	GST Payable	5000.00-	16.10	1120.00-	6103.90
3000	Common Shares	100000.00-	0.00	0.00	100000.00
3100	Current Year Net Profit/Loss	0.00	0.00	0.00	0.00
3500	Retained Earnings	830680.00-	0.00	0.00	830680.00
4000	Sales- Software	0.00	0.00	16000.00-	16000.00
4100	Sales- Computer Equipment	0.00	0.00	0.00	0.00
4500	Cost of Sales- Computer Equip.	0.00	0.00	0.00	0.00
5000	Salaries	0.00		0.00	4856.00
5100	Office Expenses	0.00	0.00	0.00	0.00
5150	Computer Expenses	0.00	0.00	0.00	0.00
5199	Art Expenses	0.00	0.00	0.00	0.00
5200	Building Expenses	0.00	0.00	0.00	0.00
5250	Furniture Expenses	0.00	0.00	0.00	0.00
5300	Automotive Expenses	0.00	0.00	0.00	0.00
5400	Telephone	0.00	70.00	0.00	70.00
5500	Rentals	0.00	160.00	0.00	160.00
7000	Bad Debt	0.00	0.00	0.00	0.00
7500	Professional Fees	0.00	0.00	0.00	0.00
8000	Donations	0.00	0.00	0.00	0.00
Totals - Head Office		0.00	49444.20	49444.20-	
Totals - ALL Cost Centres		0.00	49444.20	49444.20-	0.00
Totals:		0.00	49444.20	49444.20-	0.00



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CITY OF JOHANNESBURG

Balance Sheet

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1501	Accum Depr- Buildings	0.00	0.00	0.00	0.00
1600	Fixed Assets- Furniture	10000.00	0.00	0.00	10000.00
1601	Accum Depr- Furniture	0.00	0.00	0.00	0.00
1700	Fixed Assets- Automotive	50000.00	0.00	0.00	50000.00
1701	Accum Depr- Automotive	0.00	0.00	0.00	0.00
1800	Fixed Assets- Computers	80000.00	0.00	0.00	80000.00
1801	Accum Depr- Computers	0.00	0.00	0.00	0.00
1900	Fixed Assets- Art	510380.00	0.00	0.00	510380.00
1901	Accum Depr- Art	0.00	0.00	0.00	0.00
1999	Inventory	0.00	0.00	0.00	0.00
2000	Accounts Payable- Trade	18200.00-	246.10	246.10-	18200.00
2100	Loans Payable	100000.00-	5000.00	0.00	95000.00
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3000	Common Shares	100000.00-	0.00	0.00	100000.00
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4100	Sales- Computer Equipment	0.00	0.00	0.00	0.00
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Totals:		0.00	49444.20	49444.20-	0.00

The logo for Joburg, featuring the word "Joburg" in a stylized font with a yellow dot above the letter 'o' and a thin black line above the letters 'j' and 'o'.

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Chapter 3

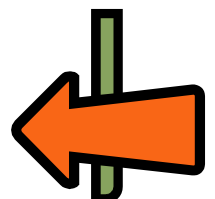
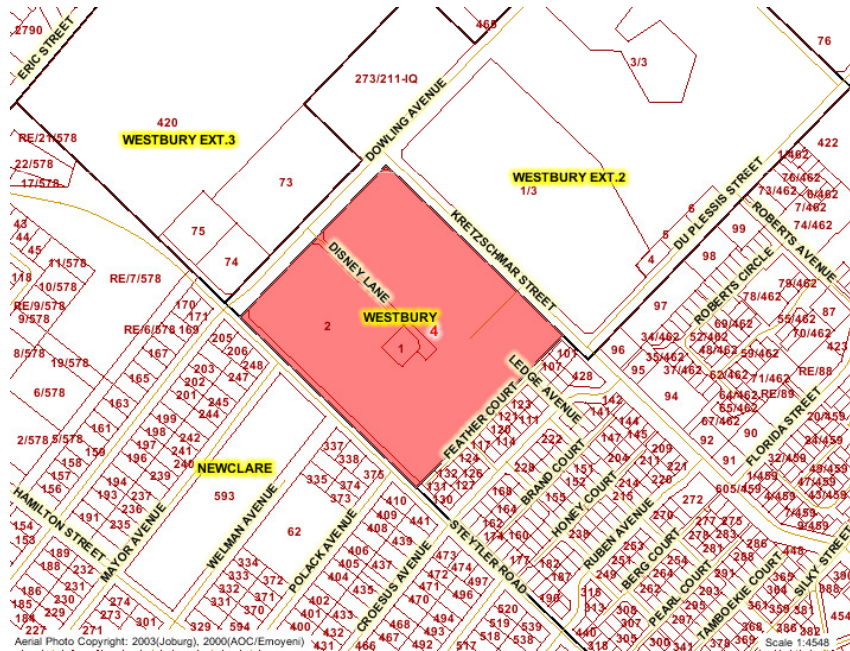
I can feel it
... close to home!



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LAND INFORMATION SYSTEM

Financial impact



TAX INVOICE

You can contact us in the following ways:

- Phone: Tel: (011) 375 5555 Fax: (011) 358 3408/9
- E-mail: JoburgConnect@joburg.org.za
- Correspondence: PO Box 1450 Johannesburg 2000

T. Nkosi
25 Allan Road
Grant Park
2015

VAT NO.: CITY OF JOHANNESBURG - 4080180291
VAT NO.: JOHANNESBURG WATER - 4270181027
VAT NO.: Pikitup - 4790181292
VAT NO.: CITY POWER - 4710181182

Date	2005/01/03
Statement for	January 2005
Physical Address	25 Allan Rd, Grant Park
Stand No./Portion	04244-000
Township	Grant Park

Stand Size	Number of Dwellings	Municipal Valuation
1403 m ²	1	Land R140 000 Improvements R193 000 Total Value R333 000

Invoice Number: 20148
Client VAT Number: S060106341
Next Reading Date: 2005/12/06
Deposit: R 500.00

Account Number: 503717235 (Pin code: 1234)

Previous Account Balance	R 920.10
Less Payments (Thank You)	- R 900.00
Sub Total	R 20.10
Current Charges (see reverse for detail)	R 821.56

Instalment Plan	R 4206.10
Original Instalment Plan	R - 736.40
Amount paid to date	R - 200.00
Current month instalment	R 3269.70
Capital instalment outstanding	R 200.00

AMOUNT DUE					TOTAL DUE
90 DAYS	60 DAYS	30 DAYS	CURRENT	NETALMENT	TOTAL AMOUNT OUTSTANDING
R 0.00	R 0.00	R 20.10	R1021.56	R3269.70	R4311.36

TOTAL DUE R 1041.66
DUE DATE 2005/02/02

Message

Remittance Advice:
This stub must accompany payment, please do not detach if paying at the post office
Date: 2005/01/03 T.Nkosi
Acc. No: 503717235 25 Allan Rd, Grant Park, 2015

EasyPay >>>>>> 9 1115 5037 1723 59
Post Office 0146 503717235
ABSA
City of Johannesburg Bank Acc. No. 405 439 8463
Branch Code 632005
Client Account No./Deposit reference 503717235

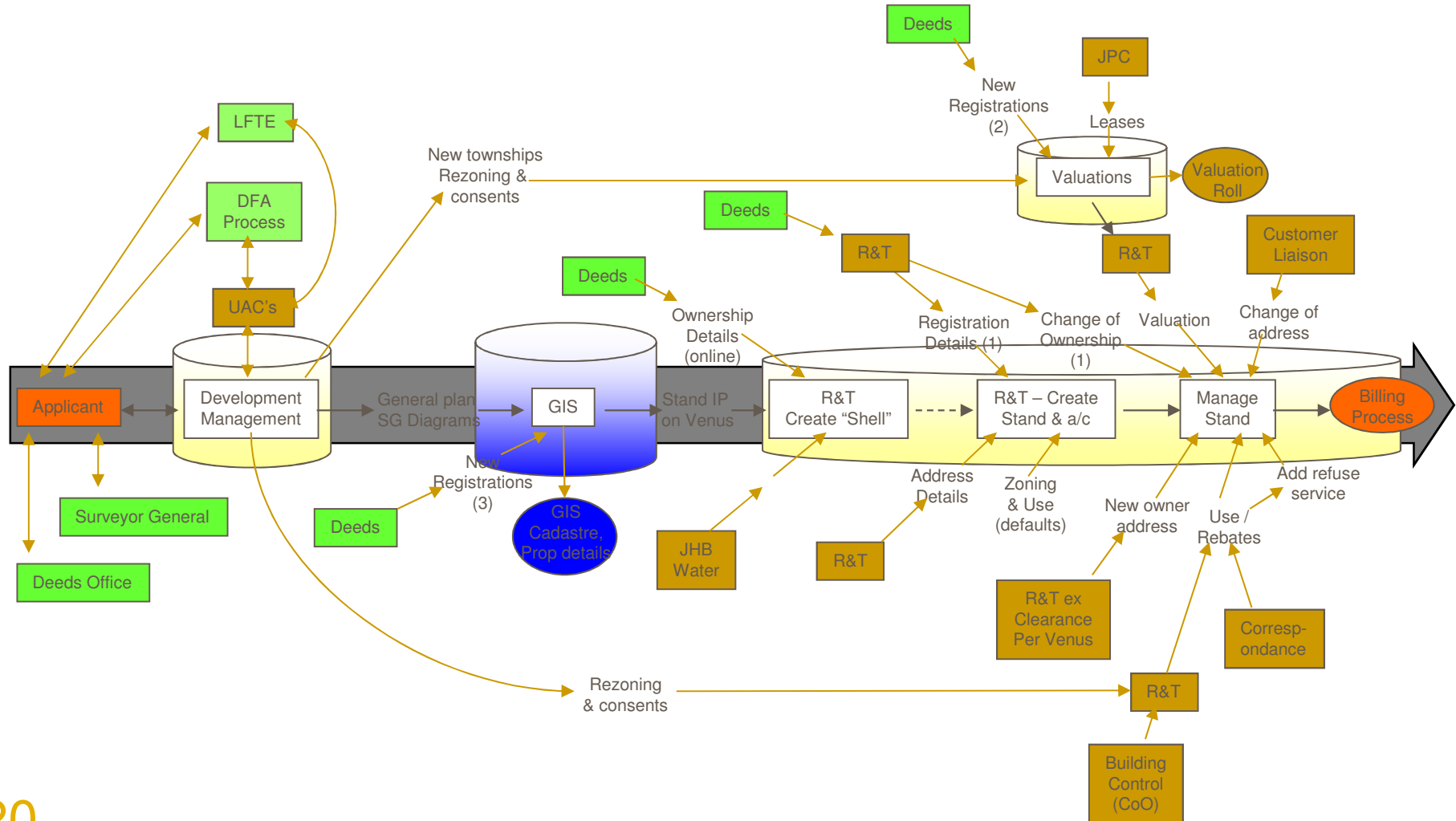
Total Due	R1041.66
Due Date	2005/02/02





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LAND INFORMATION SYSTEM Property Value Chain

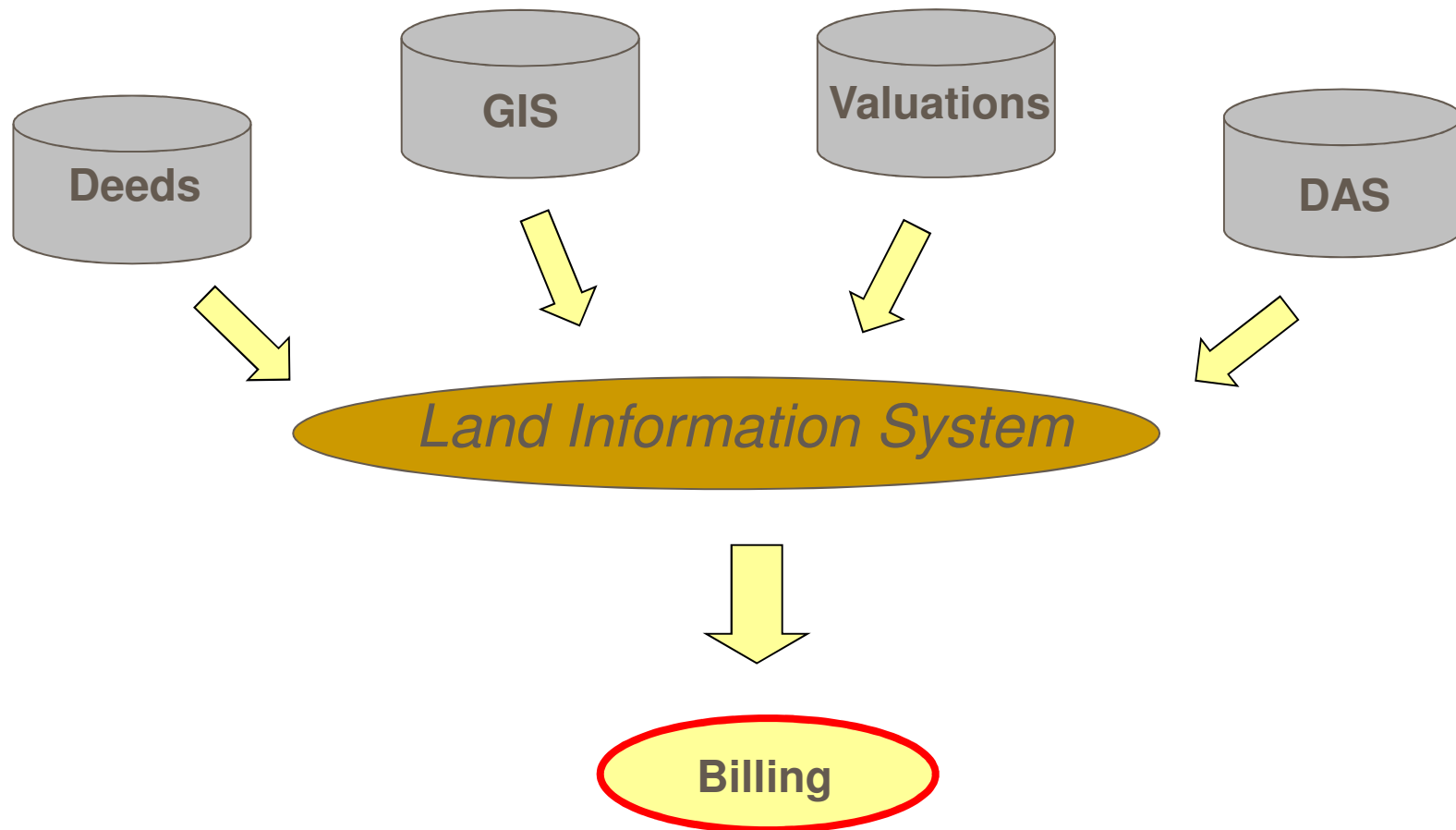




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LAND INFORMATION SYSTEM

One source of property information

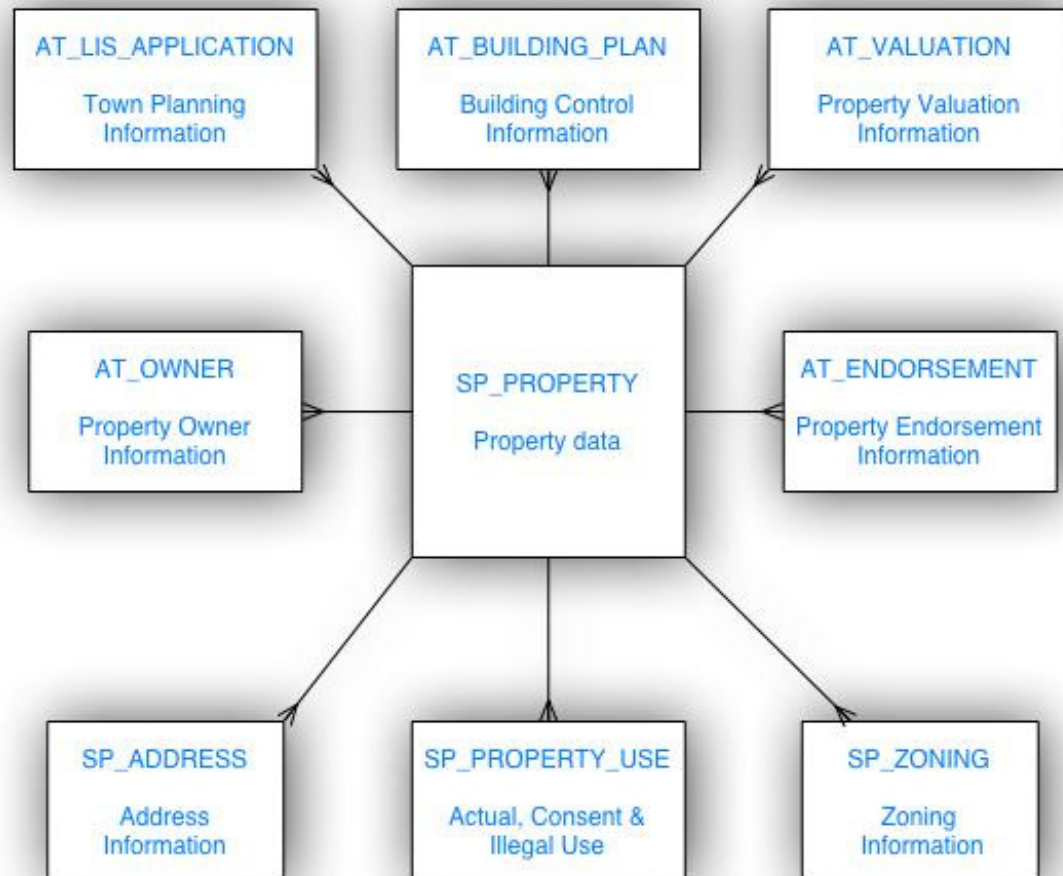




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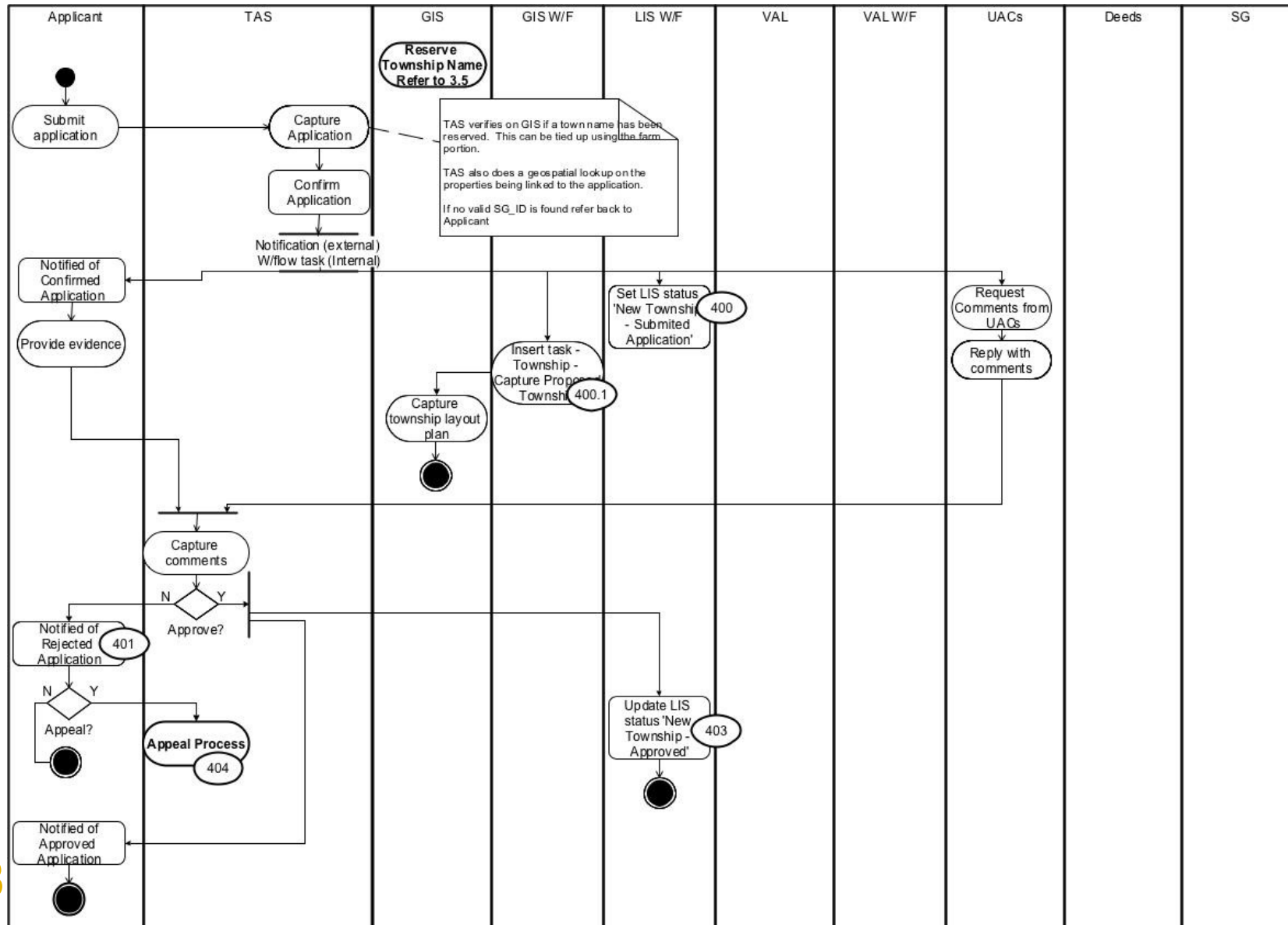
LAND INFORMATION SYSTEM

LIS Database view (high level)



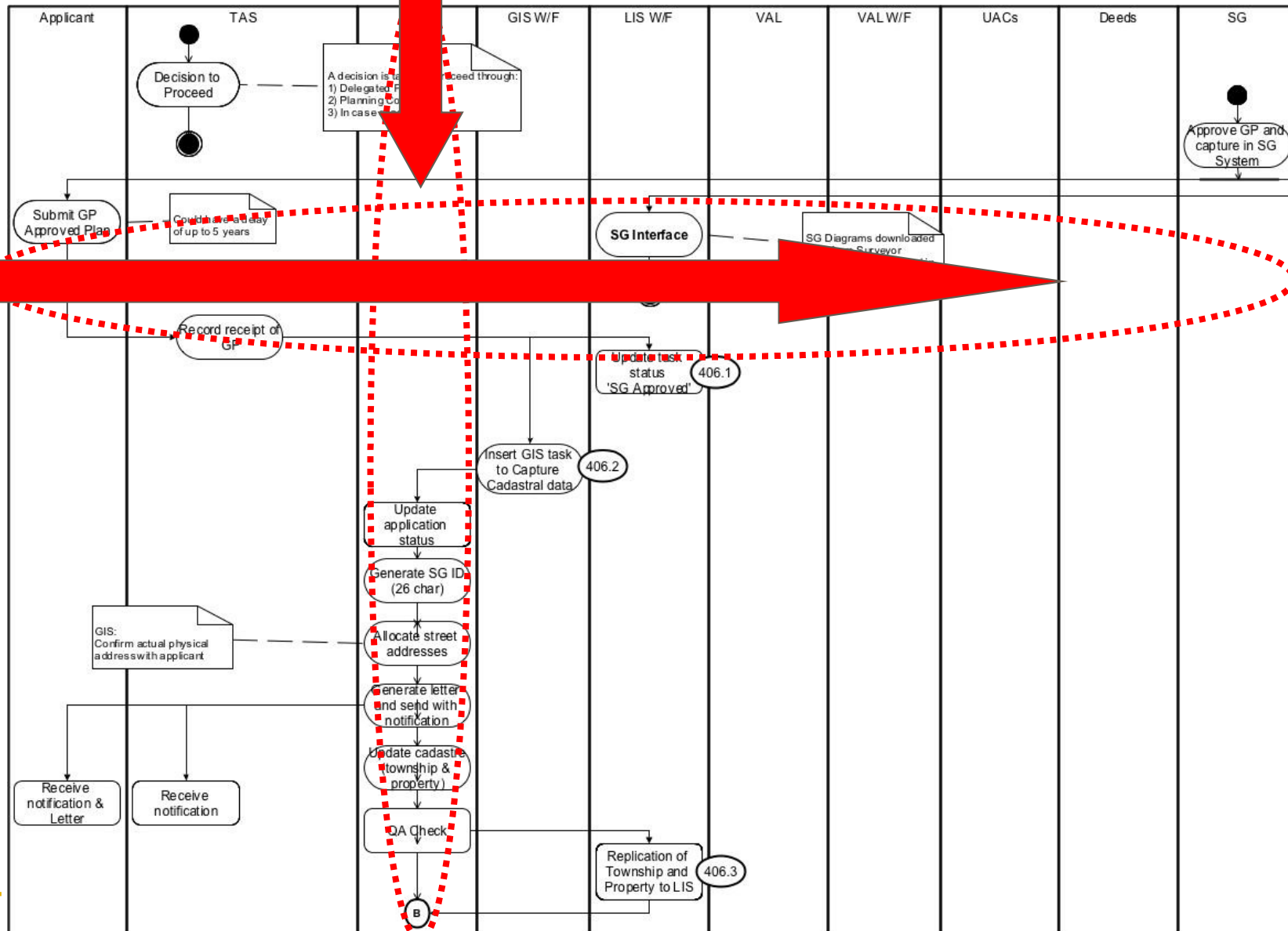
LAND INFORMATION SYSTEM

Workflow: Township establishment



LAND INFORMATION SYSTEM

LIS Workflow: Township establishment





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LAND INFORMATION SYSTEM

Old operating model

Deeds



GIS

Deeds

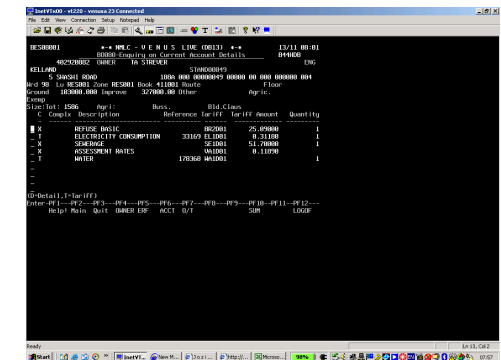
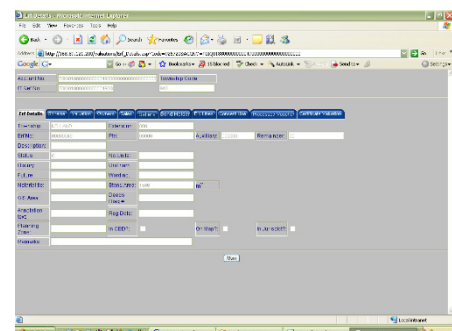
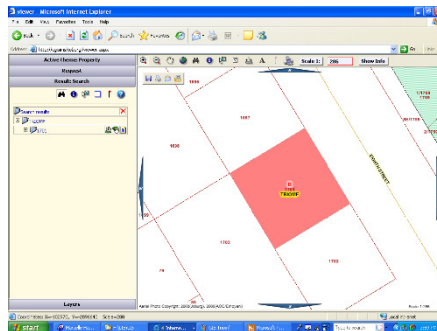


Valuations

Deeds



Venus



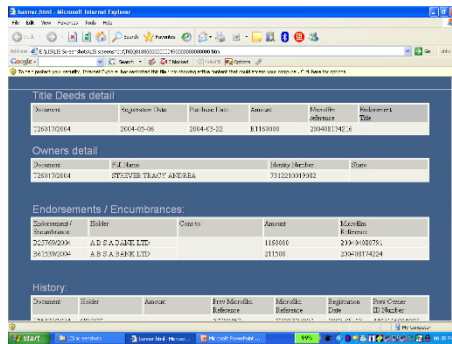


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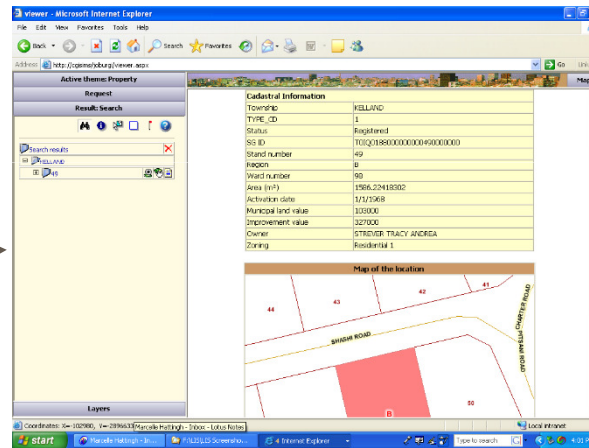
LAND INFORMATION SYSTEM

New operating model

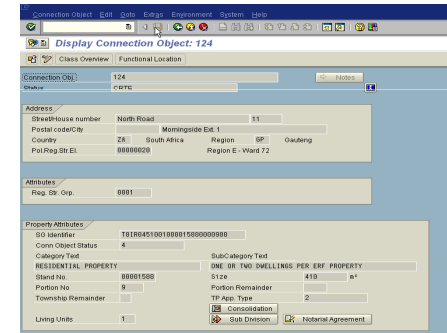
Deeds



LIS (Master)



SAP (Revenue/CRM)



No duplication!
No mismatch!



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LAND INFORMATION SYSTEM

External data source: weekly Deeds files

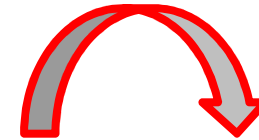
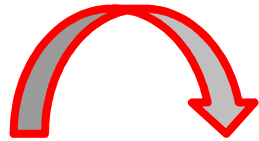
AKTES_20120917_J.TXT - Notepad										
File	Edit	Format	View	Help						
20120827201201230000000000100000495.0SQM	T31670/2012	NEDBANK LTD	100000	2						
00004426	B23240/2012	T16408/2011								
00000	000000000000	20120910	000000 GAUTENG	E01CITY OF JOHANNESBURG						
COSMO CITY EXT 5		000560300000								
A B S A BANK LTD		06								MOLELE
SESEKISENG LOVEMORE		018109175472084UNMARRIED								
201208282010120100000000000270000400.0SQM	T31919/2012	T3524/2008								2
00031265	000000000000	20120910	000000 GAUTENG	E01CITY OF JOHANNESBURG						
00000	COSMO CITY EXT 7	000823800000								
MASEKO KATLEGO KHETHIWE		018906261192082MARRIED IN MAILA MATSEBE								
T30060/2012		016006056107080UNMARRIED	2012081620120606000000000000230000282.0SQM							
B22174/2012	STANDARD BANK OF SOUTH AFRICA L735000	2 00031264								
20120910	000000 GAUTENG	T5465/2012	E02CITY OF JOHANNESBURG	000000000000						
COSMO CITY EXT 7		000823800000								
MASEKO XOLANI CONFIDENCE		018504295579083MARRIED IN								
0200031264	2									
JOHANNESBURG	COSMO CITY EXT 7	000823800000								04CITY OF
K983/2006SPTA	0200031264	2								
CITY EXT 8	000980800000	E01CITY OF JOHANNESBURG								COSMO
MDYOGOLO CONSTANCE BABALWA	017401250655084UNMARRIED	MUKHUDWANA NDISHAVHELAFHI								
NICHOLIN	018408250754089UNMARRIED	2012082420110523000000000000350000354.0SQM								
T31440/2012	FIRSTSTRAND BANK LTD	350000	2 00031367	B23061/2012						
000000 GAUTENG	T42511/2010	000000000000	20120910							
E01CITY OF JOHANNESBURG		CYRILDENE								
000059600000		HON MICHAEL								
015212115027084MARRIED OUT RICHARD IRMA PATRICIA		T31252/2012								
014411040152089UNMARRIED	201208232012032100000000000850000883.0SQM									
00000	2 00004507									
JOHANNESBURG	000000000000	20120910	000000 GAUTENG	T24055/1988						
DISCOVERY EXT 2		000068300000								
STACEY GILLIAN ROSE		01270415								UNMARRIED
016002270100084MARRIED OUT SUMMERTON LILY ROSE	01270415									
20120828	ESTATE	929.0SQM	T31917/2012							2
00004720										
00000	000000000000	20120910	000000 GAUTENG	T21519/1973	0.500000					
DISCOVERY EXT 2		000068300000								E02CITY OF JOHANNESBURG



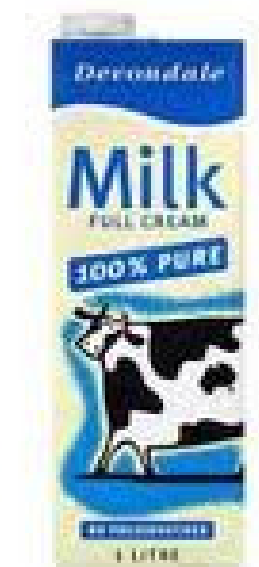
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LAND INFORMATION SYSTEM

Processes: data cleansing and reconciles



100% pure and accounted for



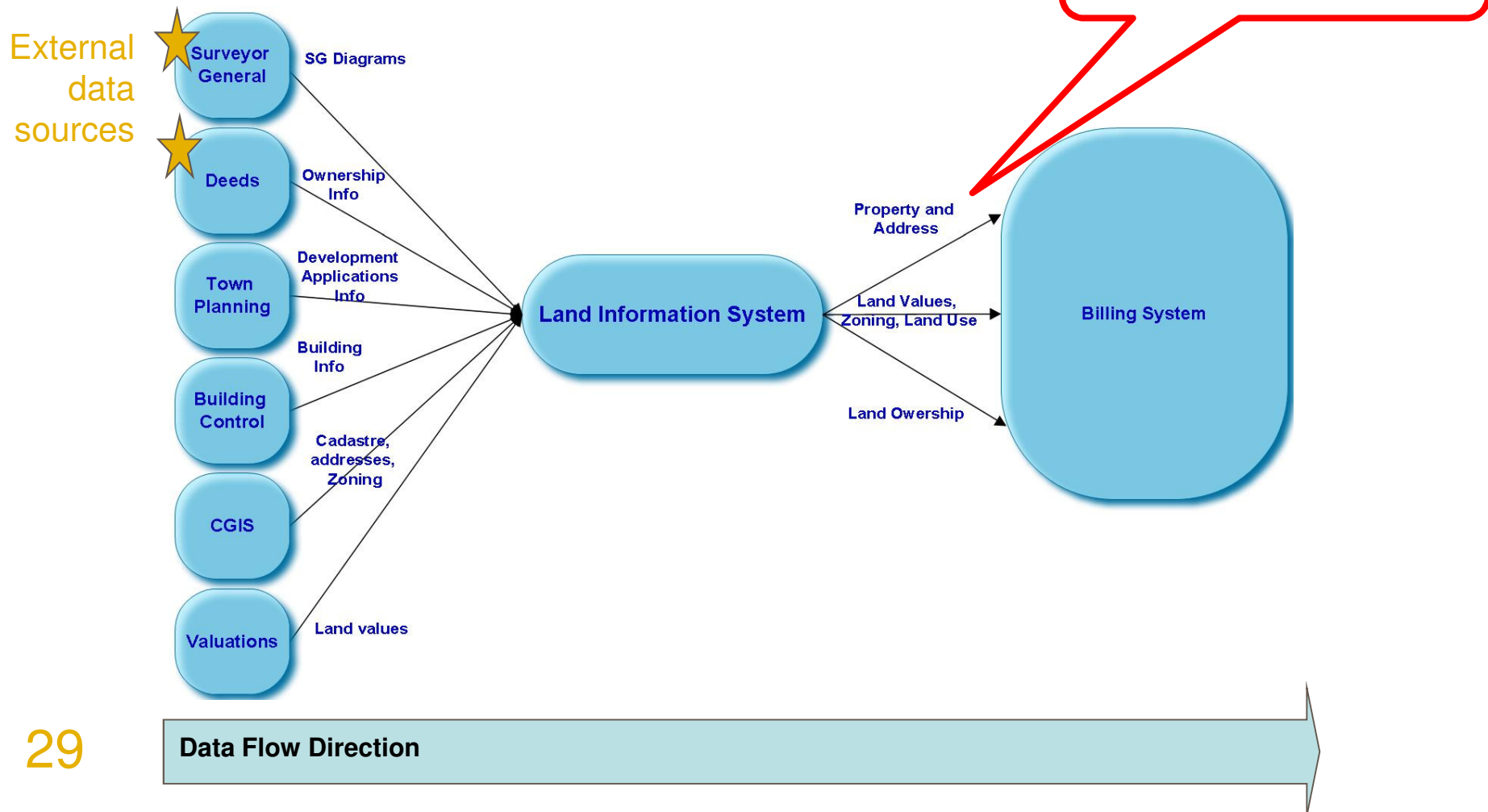


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LAND INFORMATION SYSTEM

Processes: data cleansing and reconciles

LIS Business Context



The logo for Joburg, featuring the word "Joburg" in a stylized font with a yellow dot above the 'o' and a thin line above the letters.

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30

Chapter 4

At the crossroads
... time for change

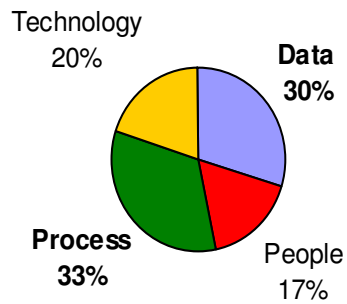


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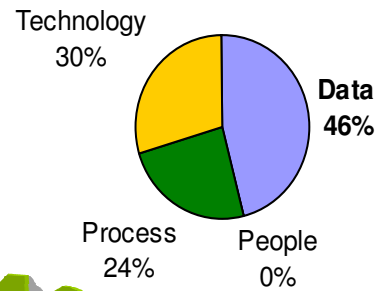
DATA, PROCESSES, PEOPLE AND TECHNOLOGY

Municipal opinion poll

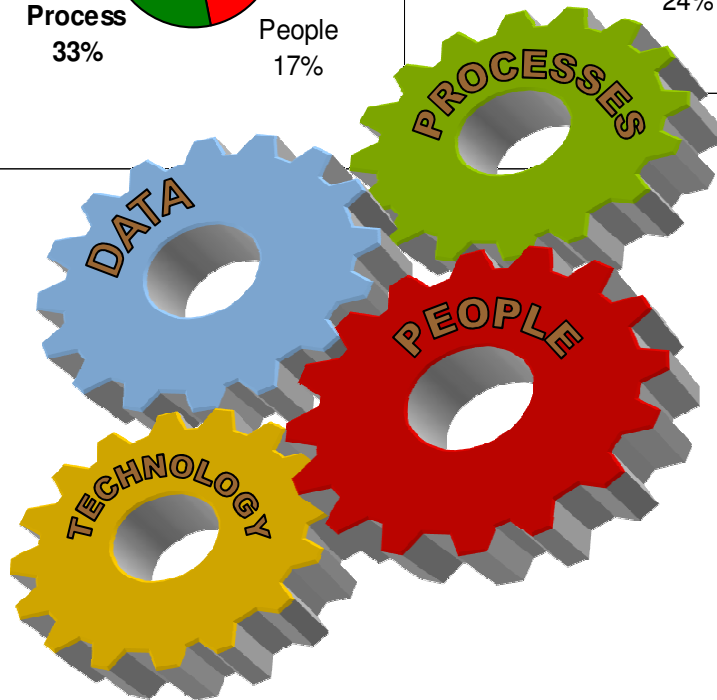
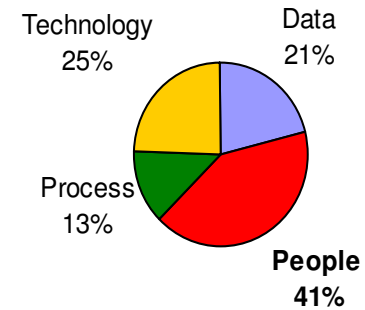
Differentiators



Should be doing?



Ingredients for success



Joburg

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Chapter 4

At the crossroads
... time for change





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CHANGE
People

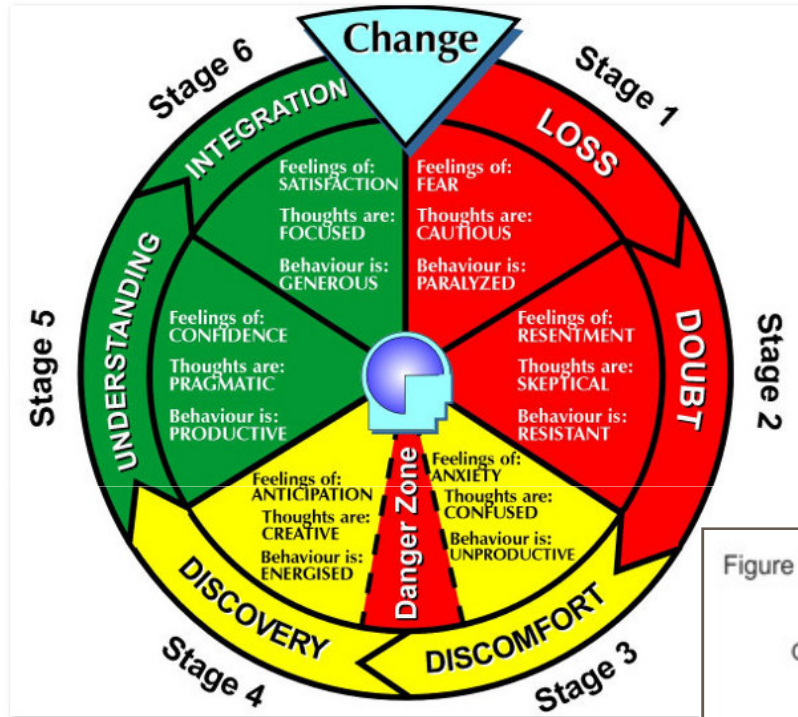
Most important – not to be underestimated

- **Change management**
- **Identify stakeholders**
- **Understand impact of what I do (bigger picture)**
- **Motivation, Build teams, Skills transfer**



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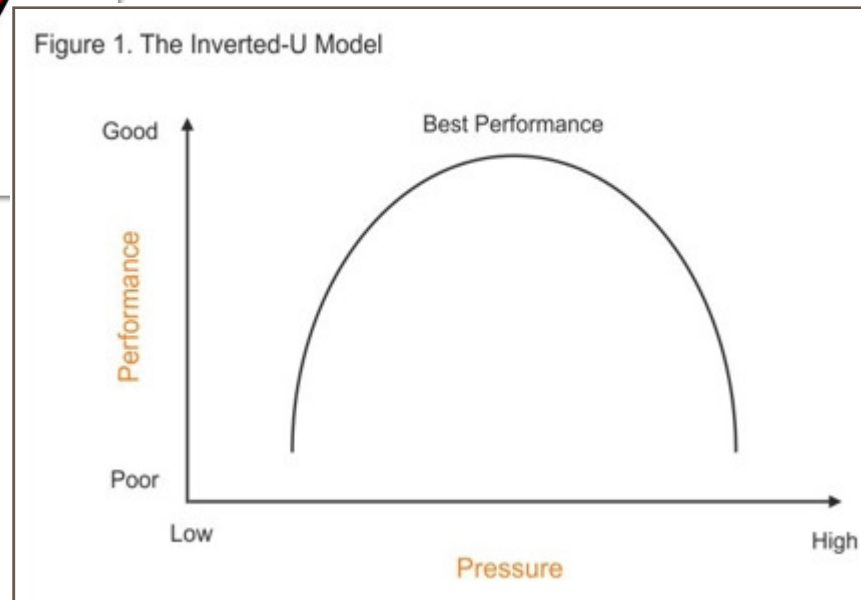
CHANGE: PEOPLE Introspection



Danger zone



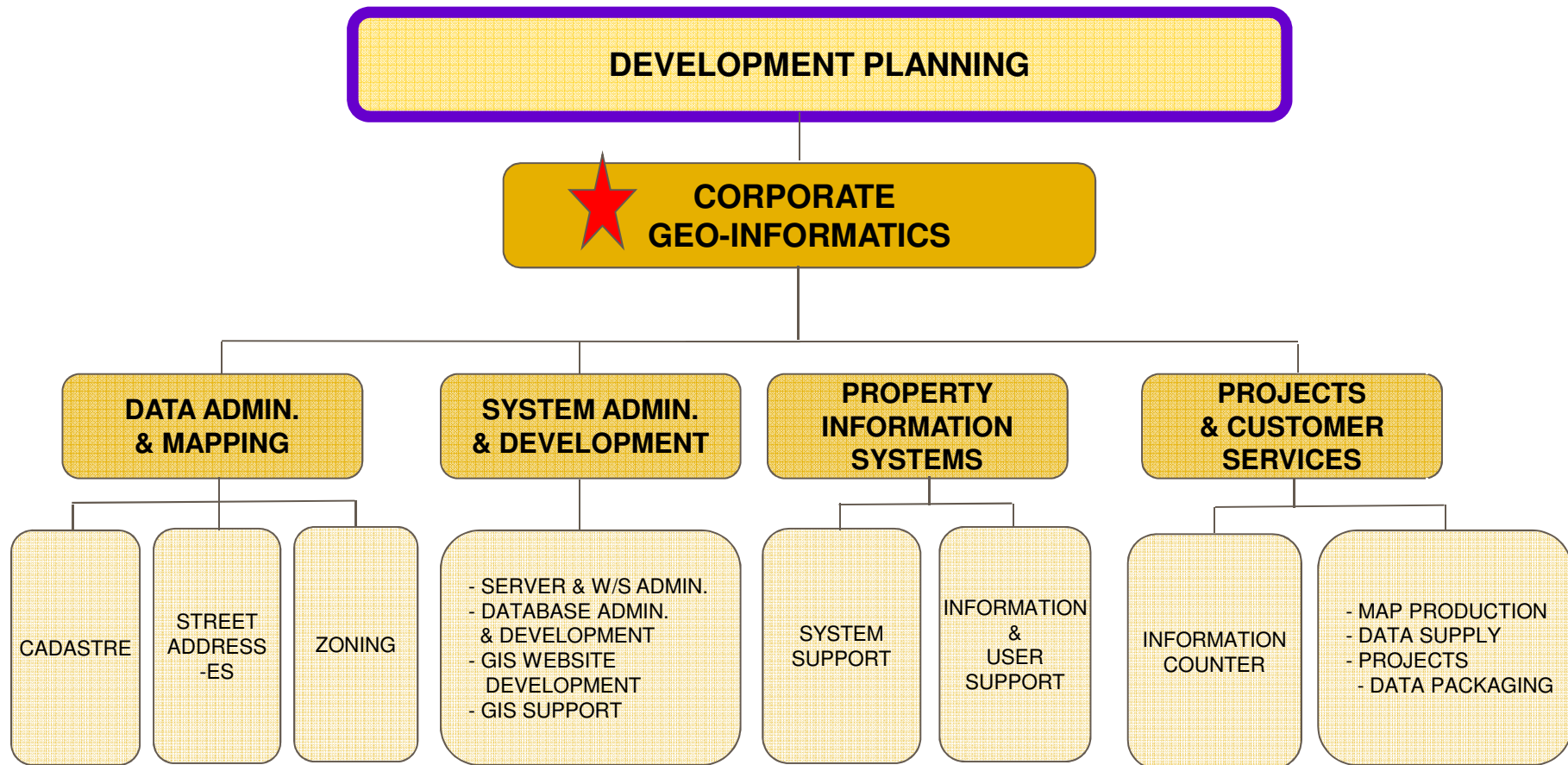
Pressure vs Performance





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CHANGE: PEOPLE
Stakeholders: CGIS





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CHANGE: PEOPLE

Stakeholders: Property Value Chain and LIS

- **COJ departments**

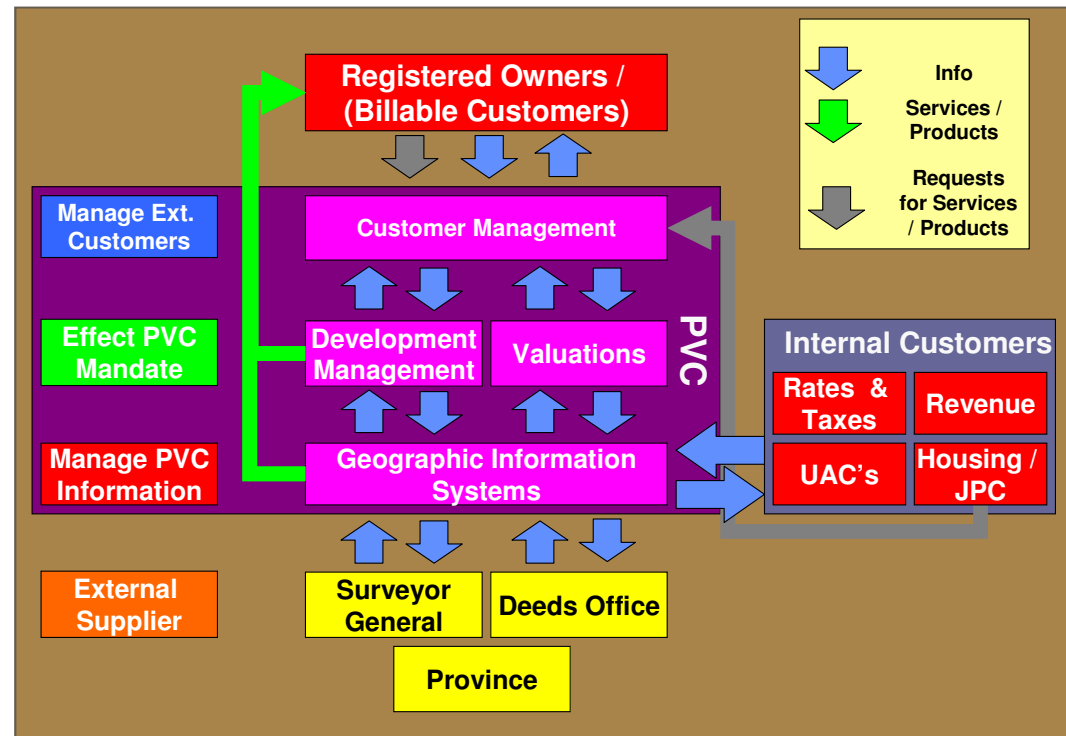
- CGIS
- Development Management
- Valuations
- Building Control (Planning)
- Customer Liaison
- Housing
- Rates and Taxes
- Revenue

- **MOEs**

- Water, Roads, JPC, Pikitup, Power

- **External**

- Provincial Housing (LFTE)
- Surveyor General
- Registrar of Deeds and Deeds Registries





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CHANGE: PEOPLE

Stakeholder challenges

The Change Equation

Richard Beckhard and Rubin Harris, 1977

For change to happen successfully, the following statement must be true:

$$\text{Dissatisfaction} \times \text{Desirability} \times \text{Practicality} > \text{Resistance to Change}$$

If one element is missing (0), the whole side of the equation = 0

Dissatisfaction

- Feel dissatisfied with the current situation

Desirability

- Proposed solution must be attractive, understand what it is, clear vision of what things will be like after the change

Practicality

- Convinced that the change is realistic and executable



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CHANGE: PEOPLE

Stakeholder motivation: Common values

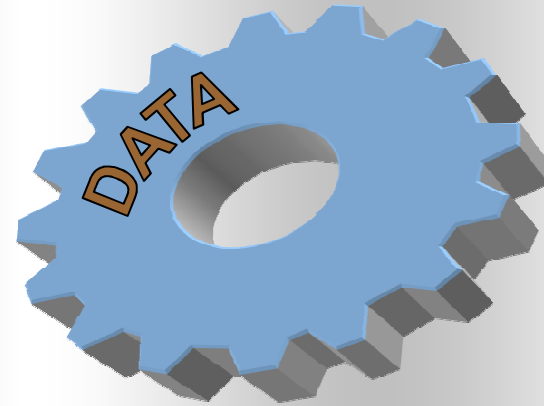




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Chapter 4

At the crossroads
... time for change





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CHANGE
Data

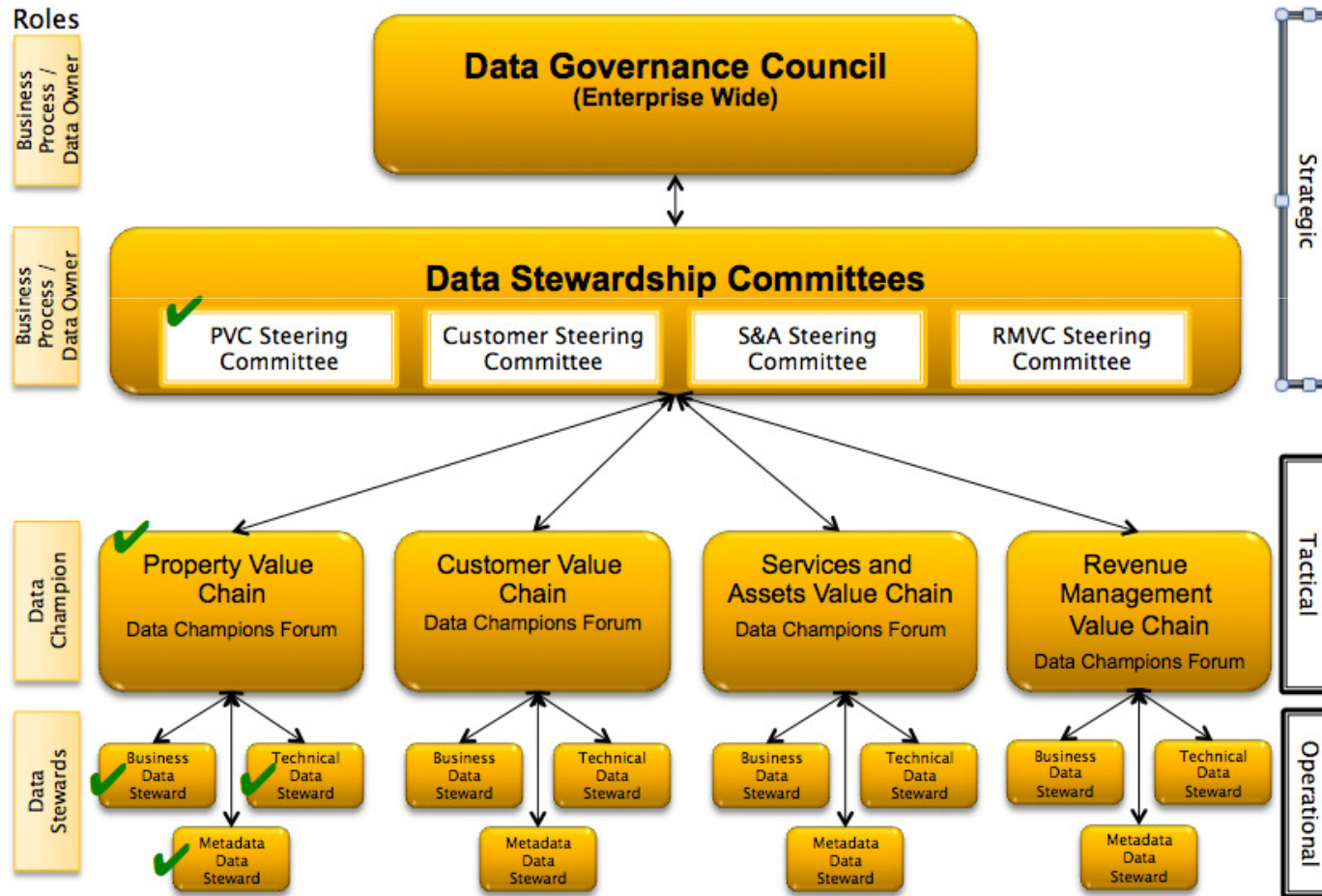
- **Data governance - manage data at all levels**
- **Data custodians – clear roles and responsibilities**
- **Data quality verification, monitoring and reporting**



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CHANGE: DATA Data governance

Data Stewardship Structures at COJ





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CHANGE: DATA

Data matrix: roles and responsibilities

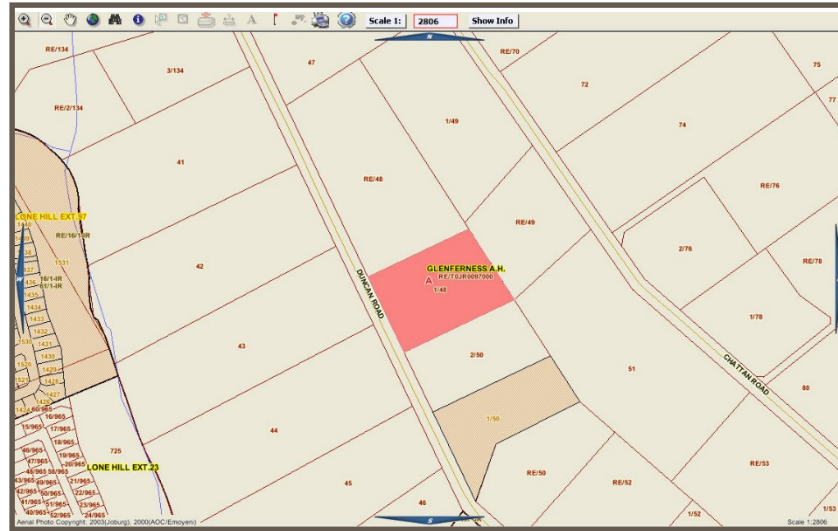
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		
1	DATA ENTITIES USED IN COUNCIL'S SYSTEMS WITHIN THE PROPERTY VALUE CHAIN																				22-May	
2	Symbols	√ = User of Data Entity, Read only			U = Not originator but may update			Data Replicated not using agreed process				NCP = Not captured presently										
3	Legend	O = Originator of Data Entity			Spatial Layers			Future Requirements				NA = Not applicable										
5		EO = External Originator			Image (Tiff, Aerial Photography)			Able to change the Data on own systems				GC Revision					AO Revision					
6		Development Planning			Finance			Integr. Human Settlement Services/ Econ. & Social Dev./ Comm. Dev.				Safety & Security/ Health					Utility Services/ Service Delivery & Integration/ Transport Roads & Stormwater			External Parties		
7		Town Planning	Bldg Dev.	Corporate GIS	Valuations	XI Interface	Revenue	JPC	Housing	Various	Econ Dev. & Tourism	Emer-gency Services	Metro Police	Health & Clinics	Water & Sanitation	Transport, Roads, Storm-water	Solid Waste Manag.	Electrical Services	Surveyor General	Deeds Office		
8	Data Sets & Data Entities	TAS	BAS	GIS	VAL	XI	SAP-ISU	System for: Acquisitions, Sales,	Waiting Lists, Rentals, Sales,	Open Spaces, Nature Reserves,	Informal Trading, Tourism Info	Fires, Disasters	Enforce-ment, Crime Prevention, Traffic	incidents, Air & Water Pollution, Chemica	Jhb Water	JRA	PikitUP	CityPower				
9	TOWN PLANNING APPLICATION																					
10	Application Reference	O	O	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓		
11	Application Type (Township, Subdivision, Consolidation, Rezoning, Consent Use, Building Plans)	O	O	✓	✓	✓	✓								✓	✓	✓	✓				
12	Application User Details	O	O	✓																		
13	Submitted Date (Application Date)	O	O	✓																		
14	Approval Date	O	O																			
15	GP/SG Approved Date	O		✓	✓															EO		
16	Proclamation/Promulgation Date	O		✓	✓																	
17	Transferable Date	O		✓																		
18	Contribution Payable Indicator	O				✓																
19	Contribution Paid Indicator	O				✓	✓															
20	Lapse/Rejected/Refused/Appeal Date	O	O	X	X		X															
21	Applicant Details	O	O																			
22	Application Status Tracking	O	O	✓	✓	✓																
23	Application Task Tracking	O	O	✓	✓																	
24	Application Primary Property	O	O	✓	✓										✓	✓	✓	✓				
25	TOWNSHIP NAME																					
26	Township Name	✓	✓	O	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	EO		
27	Township Code	✓	✓	O	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓		
28	Township Ext	✓	✓	O	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓		
29	Township Status	✓	✓	O	✓	✓	✓								✓	✓	✓	✓	✓	✓		



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CHANGE: DATA

Spatial verifications: Cadastral capture



SUBDIVISIONAL DIAGRAM

SIDES metres	ANGLES OF DIRECTION	COORDINATES		S.G. No. A
		Y	X	
Constants:		70,00	-280000,00	9758/90
AB	112,74	244,27,30	A	+ 96 782,20
BC	85,36	327,16,40	B	+ 76 917,11
CD	23,41	44,27,20	C	+ 96 680,48
DA	84,69	154,27,50	D	+ 76 868,50
[22] LEEUWKOP				+ 96 634,24
[90] PRE 18				+ 76 940,31
				+ 96 745,63
				+ 76 993,13
				+ 84 258,60
				+ 77 164,34
				+ 95 933,14
				+ 80 425,20

Approved: *[Signature]*
for SURVEYOR GENERAL
1991-02-22

DESCRIPTION OF BEACONS
A,B,C,D - Iron standards.

SERVITUDE NOTES
1) The line cd represents the centre line of Overhead Electric Power Line with Underground Cables vide Diagram S.G. No. A 597/68 Deed of Servitude No. 259/1970
2) The figure aBCba represents a Horse Path Servitude vide Diagram S.G. No. A 3756/90 Deed of Servitude No. R 4145/992 s

SCALE: 1/2 000

The figure A B C D A represents 1,000 HECTARES PORTION 1 OF HOLDING 48 GLENFERNESS AGRICULTURAL HOLDINGS of land being

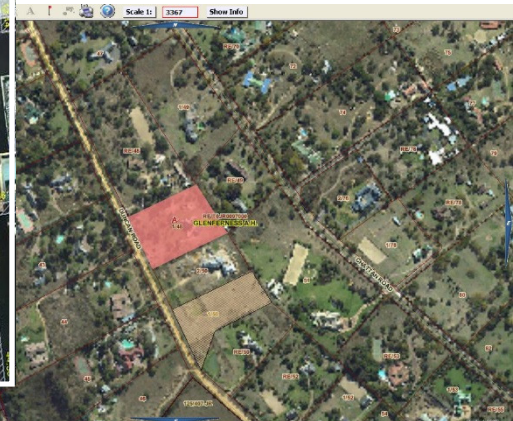
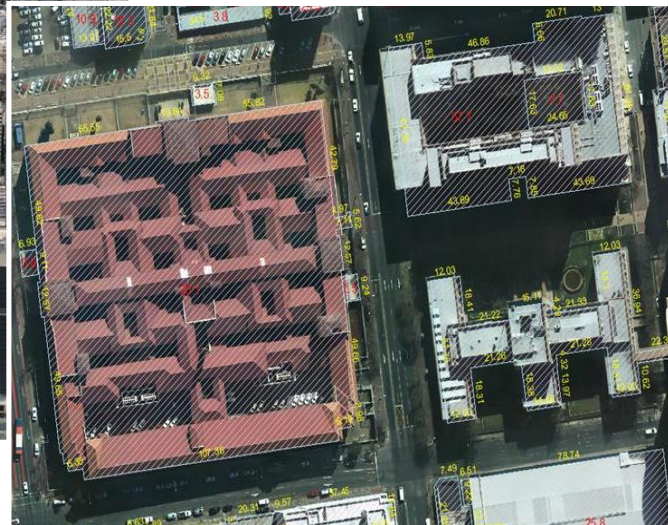
Province of Transvaal
Surveyed in NOVEMBER 1990 by me *[Signature]*
P.H. KOHRS Land Surveyor

This diagram is annexed to No. T 1324/1992 n.d. i.f.c. Registrar of Deeds

The original diagram is No. A1394/52 Transfer 238043/1965 Grant

File S.R. 3876/90 G.P. 1628 Comp. TRG-33 TRSM-11

Printed by the Institute of Land Surveyors of the Transvaal





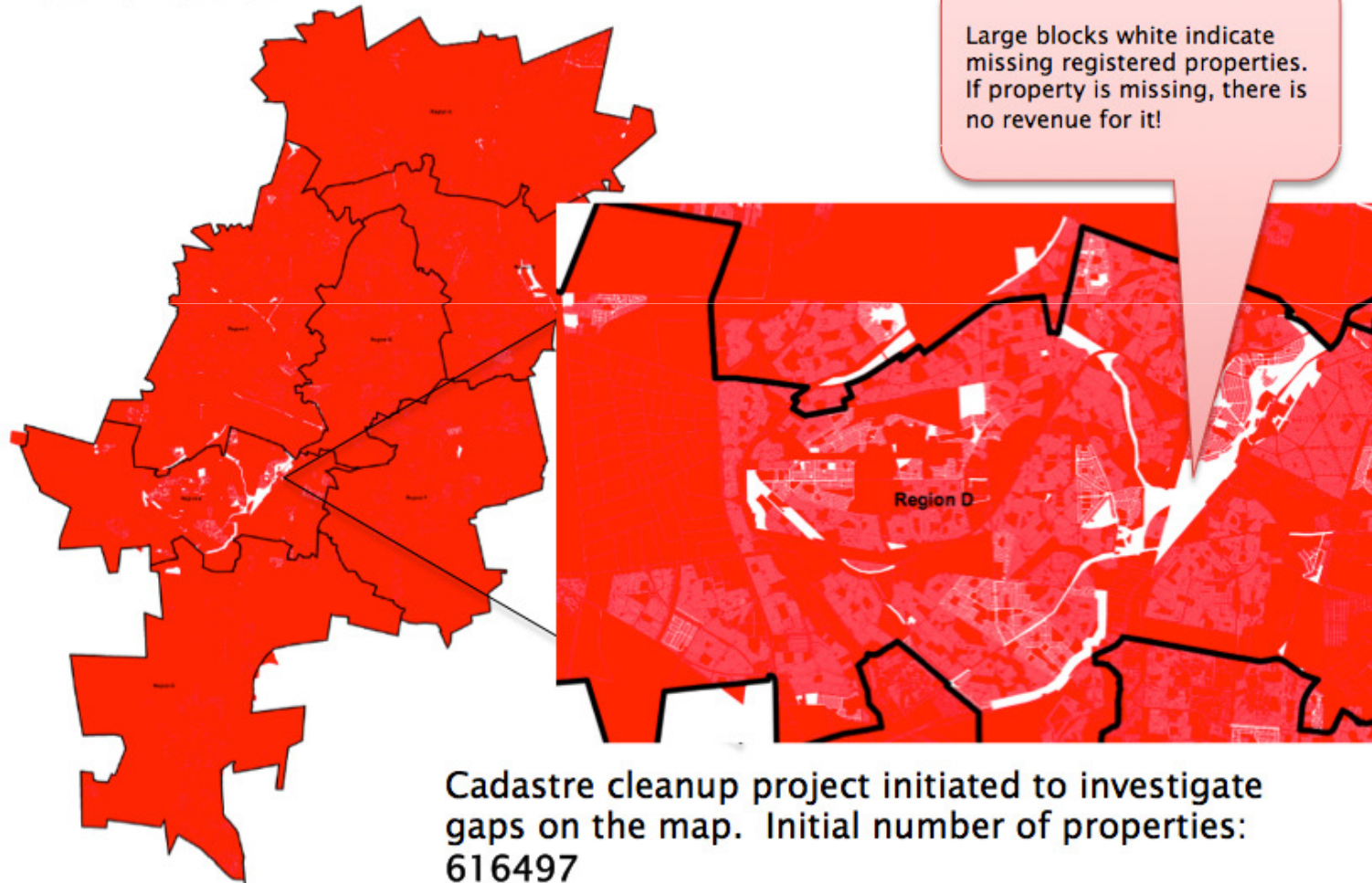
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CHANGE: DATA

Spatial monitoring and reporting: Registered properties

GIS enablement of data quality – cadastre cleanup project

Registered Properties (2012 Data) Past





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CHANGE: DATA Monitoring: Audit trails

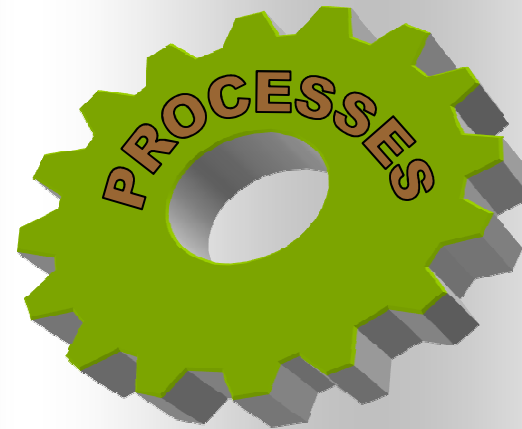
CHANGE_DESCRIPTION														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	AUDIT_KEY	CLASS_KEY	FEATURE_KEY	CHANGE_TS	CHANGE_DESCRIPTION	FIELD_NAME	OLD_VALUE	NEW_VALUE	TOWN_NAME_DESC	OBJECTID	ACTIVATION_DATE	DEACTIVATION_DATE	PROPERTY_ID	TOWN_NAME_KEY
1														
2	12139212	434	2082718	12-May-15	UPDATE	STATUS_SUBTYPE	7	8	HYDE PARK	771249	15-Feb-13	01-Apr-14	2082718	19825
3	12139198	434	2075718	12-May-15	UPDATE	STATUS_SUBTYPE	7	8	HYDE PARK	771245	07-Sep-04	15-May-08	2075718	19825
4	12139216	434	2082719	12-May-15	UPDATE	STATUS_SUBTYPE	7	8	HYDE PARK	771250	03-Aug-12	01-Apr-14	2082719	19825
5	12139219	434	2028774	12-May-15	UPDATE	STATUS_SUBTYPE	7	8	HYDE PARK	771230	01-Dec-04	31-Jul-07	2028774	19825
6	12139110	434	2091775	11-May-15	UPDATE	STATUS_SUBTYPE	1	7	ATHOLL	770967	03-Apr-14	01-Jan-90	2091775	19158
7	12139113	434	2091780	11-May-15	UPDATE	STATUS_SUBTYPE	1	7	ATHOLL	770968	03-Apr-14	01-Jan-90	2091780	19158
8	12143319	434	2091771	12-May-15	UPDATE	STATUS_SUBTYPE	1	7	ATHOLL	771812	03-Apr-14	03-May-15	2091771	19158
9	12139105	434	2091686	11-May-15	UPDATE	STATUS_SUBTYPE	1	7	ATHOLL	770951	22-Apr-08	22-Apr-09	2091686	19158
10	12148553	434	1611928	13-May-15	UPDATE	SG_ID	TOIQ052300000000010000200	TOIQ052300000000010000100	DELAREY	771505	01-Jan-05	01-Jan-00	1611928	18119
11	12148552	434	1258016	13-May-15	UPDATE	SG_ID	TOIQ052300000000010000100	TOIQ0523000000000100001RE	DELAREY	771504	01-Jan-05	01-Jan-00	1258016	18119
12	12148554	434	1258016	13-May-15	UPDATE	SG_ID	TOIQ0523000000000100001RE	TOIQ052300000000010000200	DELAREY	771504	01-Jan-05	01-Jan-00	1258016	18119
13	12140837	434	2091879	12-May-15	CREATE				BRYANSTON EXT.8	771881	19-Mar-15	01-Jan-00	2091879	19274
14	12146142	434	2091881	13-May-15	CREATE				BRYANSTON EXT.8	771882	19-Mar-15	01-Jan-00	2091881	19274
15	12135711	434	2073674	07-May-15	UPDATE	STATUS_SUBTYPE	2	1	JUKSKEI VIEW EXT.39	770056	27-Mar-13	01-Jan-00	2073674	1000291
16	12140824	434	2091877	12-May-15	CREATE				LONGLAKE 710-IR	771880	03-Feb-15	01-Jan-00	2091877	1002891
17	12136469	434	2091863	11-May-15	CREATE				LONGLAKE 710-IR	771871	27-Jan-15	01-Jan-00	2091863	1002891
18	12136484	434	2091866	11-May-15	CREATE				LONGLAKE EXT.18	771872	27-Jan-15	01-Jan-00	2091866	1002592
19	12136488	434	2091867	11-May-15	CREATE				LONGLAKE EXT.18	771873	27-Jan-15	01-Jan-00	2091867	1002592
20	12136492	434	2091868	11-May-15	CREATE				LONGLAKE EXT.18	771874	27-Jan-15	01-Jan-00	2091868	1002592
21	12140793	434	2091872	12-May-15	CREATE				LONGLAKE EXT.18	771877	27-Jan-15	01-Jan-00	2091872	1002592

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Chapter 4

At the crossroads
... time for change





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CHANGE
Processes

Business processes

- **Identify gaps and prioritise**
- **Manage processes and impact within and between value chains**
- **Apply City standards**
- **Reconcile between databases**
- **Data cleansing**

CHANGE: PROCESSES

Identify gaps and priorities

ITEM 1: Properties in existence but not on LIS

- **Statement:**

A property legally exists when it is registered in the Deeds Office. All registered properties should be reflected on the LIS.

- **Gap:**

Properties might exist but

- **Verifications and Co**

1. Historic data al
2. Deeds weekly t
3. Opening Balan
4. Remainder of t
5. CVB project (C
6. Promulgation n
7. Consolidation a
8. Comparison be
9. Limited Deeds
10. Other additiona

- **Baselines:**

Submitted per project.

- **Dependencies:**

RFQ for DiData appointm
XI interface support (ERP

ITEM 2: Change of ownership by Deeds Office not processed on LIS

- **Statement:**

The Registrar of Deeds provides ownership data for property registration. Ownership data for registered properties should be reflected on the LIS.

- **Gap:**

Not all Deeds ownership records have been processed into the LIS.

- **Verifications and Controls:**

1. Deeds weekly files processing (Property Information Systems Section)
2. Deeds processing environment into LIS (*)
3. Deeds Interface (XI) processing (*)
4. Limited Deeds data dump (properties on GIS without ownership data)

- **Baselines:**

Provided as per outcomes of project schedule (*)
No. of properties on GIS without ownership data

- **Dependencies:**

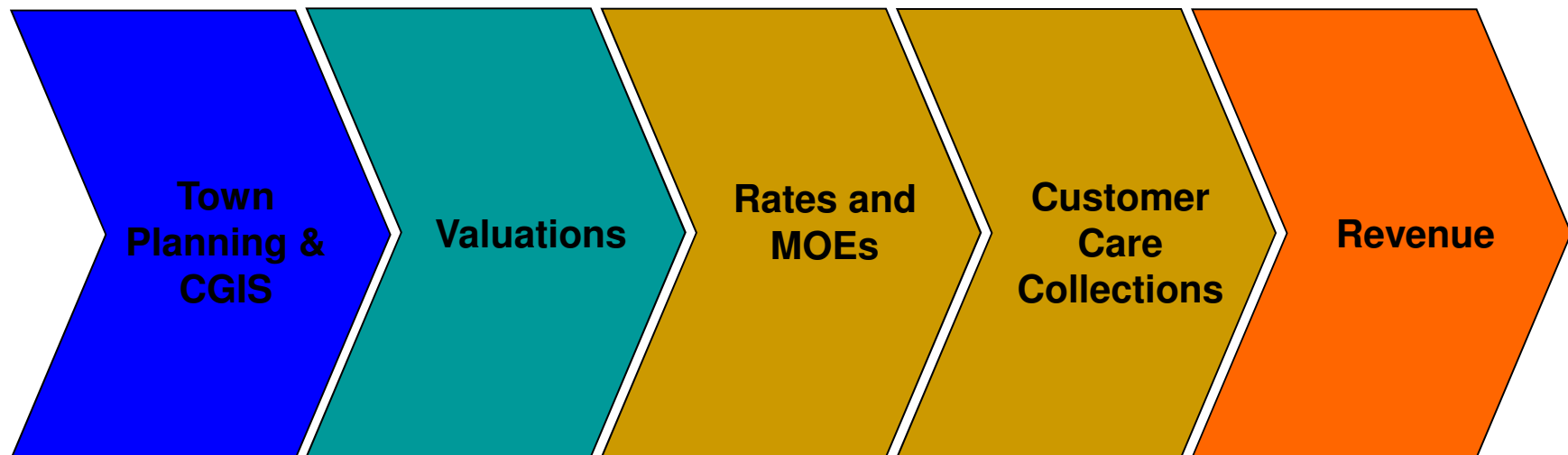
RFQ* for DiData appointment (Deeds processing environment)
XI interface support (ERPSS)



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CHANGE: PROCESSES

Assess impact of processes between value chains



CHANGE: PROCESSES








Standards: Property identifier code for all City systems



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26 Digit Code

T 0 J R 0 5 6 6 0 1 3 0 0 0 0 1 2 0 3 0 0 0 0 0 0 0

-  **SG Office Code (1)**
-  **Registration division (3)**
-  **Township code (4)**
-  **Township extension (3)**
-  **Stand number (8)**
-  **Portion (5)**
-  **Remainder (2)**

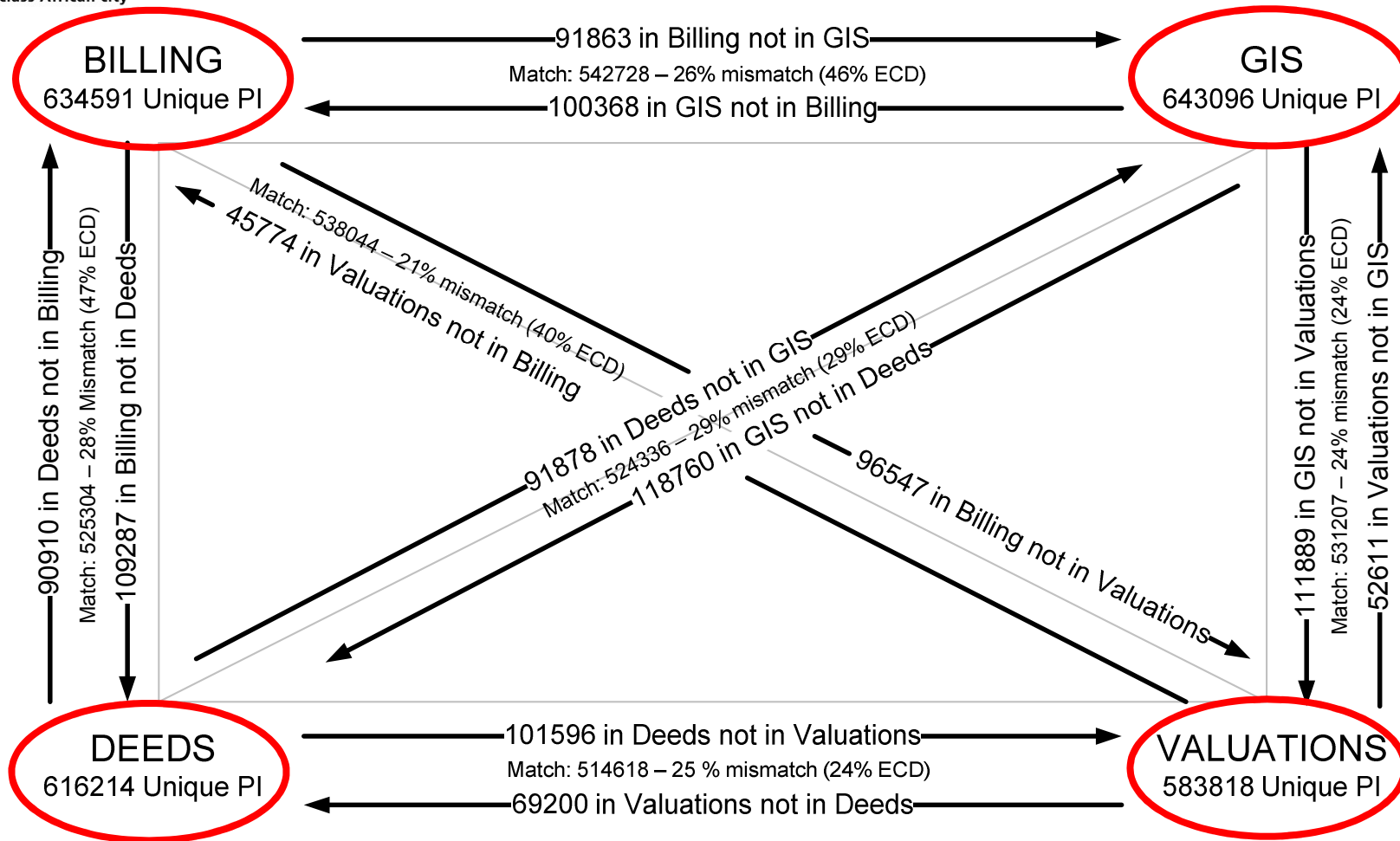
50



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CHANGE: PROCESSES

Data cleansing: GIS, Deeds, Valuations, Billing



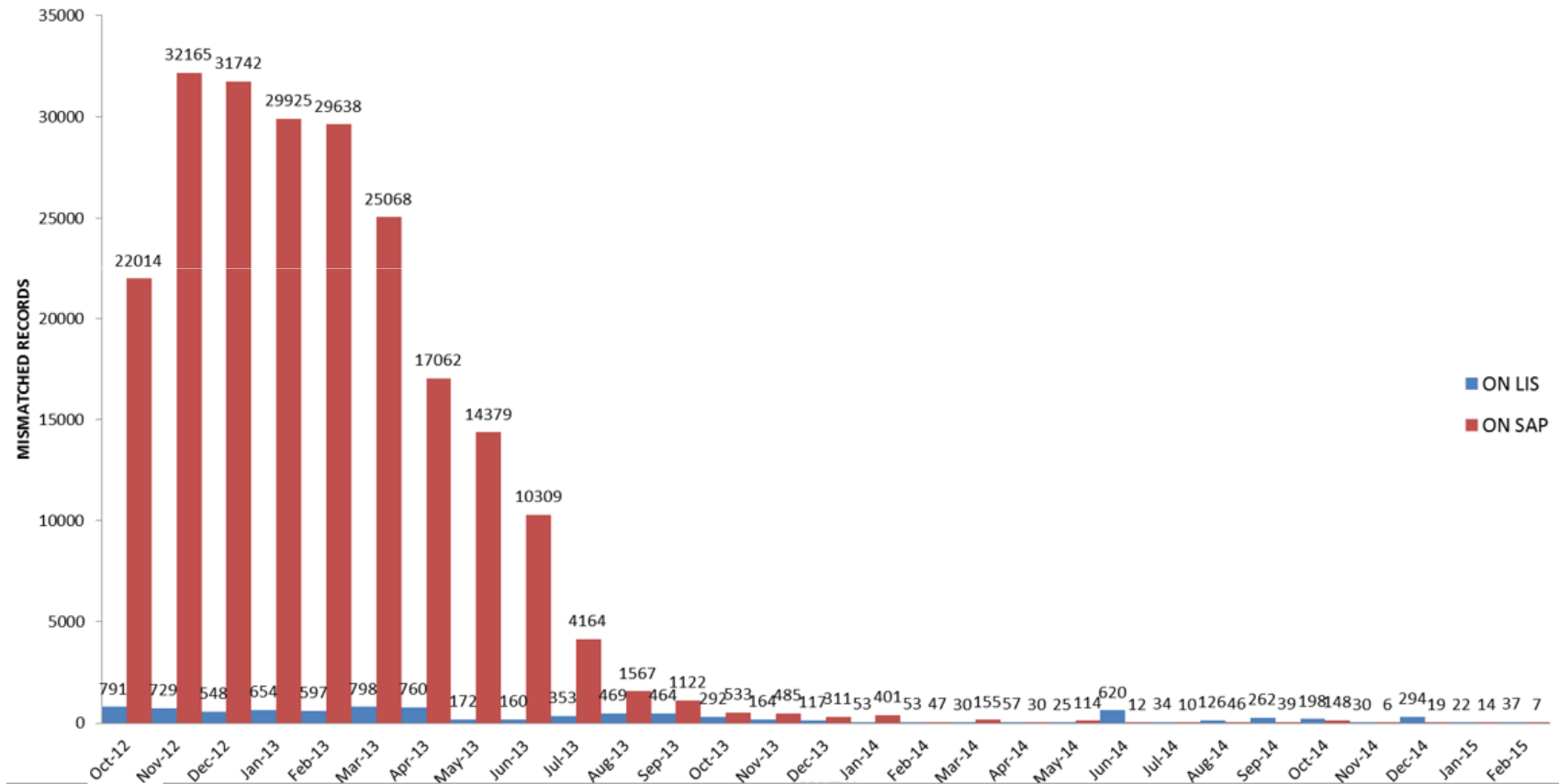


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CHANGE: PROCESSES

Data cleansing: LIS vs Billing (SAP)

LIS VS SAP MISMATCHES





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CHANGE: PROCESSES

Data matrix: LIS SDE database

Layer Properties dialog for CGIS.LIS.SP_PROPERTY. The 'Fields' tab is active, showing the 'STATUS_SUBTYPE' field selected. The table below shows the distribution of values:

Symbol	Value	Label	Count
<input checked="" type="checkbox"/>	<all other values>	<all other values>	0
	<Heading>		
	8	DELETED	7609
	7	HISTORY	28607
	1	REGISTERED	615184
	2	SG_APPROVED	85775
	107	TOWN_HISTORY	0
	101	TOWN_REGISTERED	0
	102	TOWN_SG_APPROVED	0
	104	TOWN_WITHDRAWN	0
	-1	UNDEFINED	0



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CHANGE: PROCESSES

Data matrix: LIS ECD database

Layer Properties

General Source Selection Display Symbology Fields Definition Query Labels Joins & Relates HTML Popup

Show:

Features

Categories

- Unique values
- Unique values, many to one
- Match to symbols in a layer

Quantities

Charts

Multiple Attributes

Draw categories using unique values of one field. Import...

Value Field: STATUS_SUBTYPE

Color Ramp

Symbol	Value	Label	Count
<input checked="" type="checkbox"/>	<all other values>	<all other values>	0
	<Heading>	STATUS_SUBTYPE	741443
	8	DELETED	7609
	7	HISTORY	28607
	1	REGISTERED	615184
	2	SG_APPROVED	85775
	107	TOWN_HISTORY	0
	101	TOWN_REGISTERED	0
	102	TOWN_SG_APPROVED	0
	104	TOWN_WITHDRAWN	0
	-1	UNDEFINED	0

Add All Values Add Values... Remove Remove All Advanced

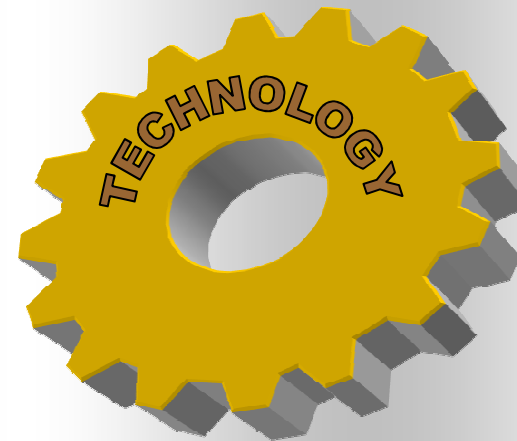
OK Cancel Apply

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Chapter 4

At the crossroads
... time for change



Integrated, enterprise system

- **Minimise system interfaces**
- **Partnership between business and IT**
- **Integrated procurement procedures for system maintenance, development and support**

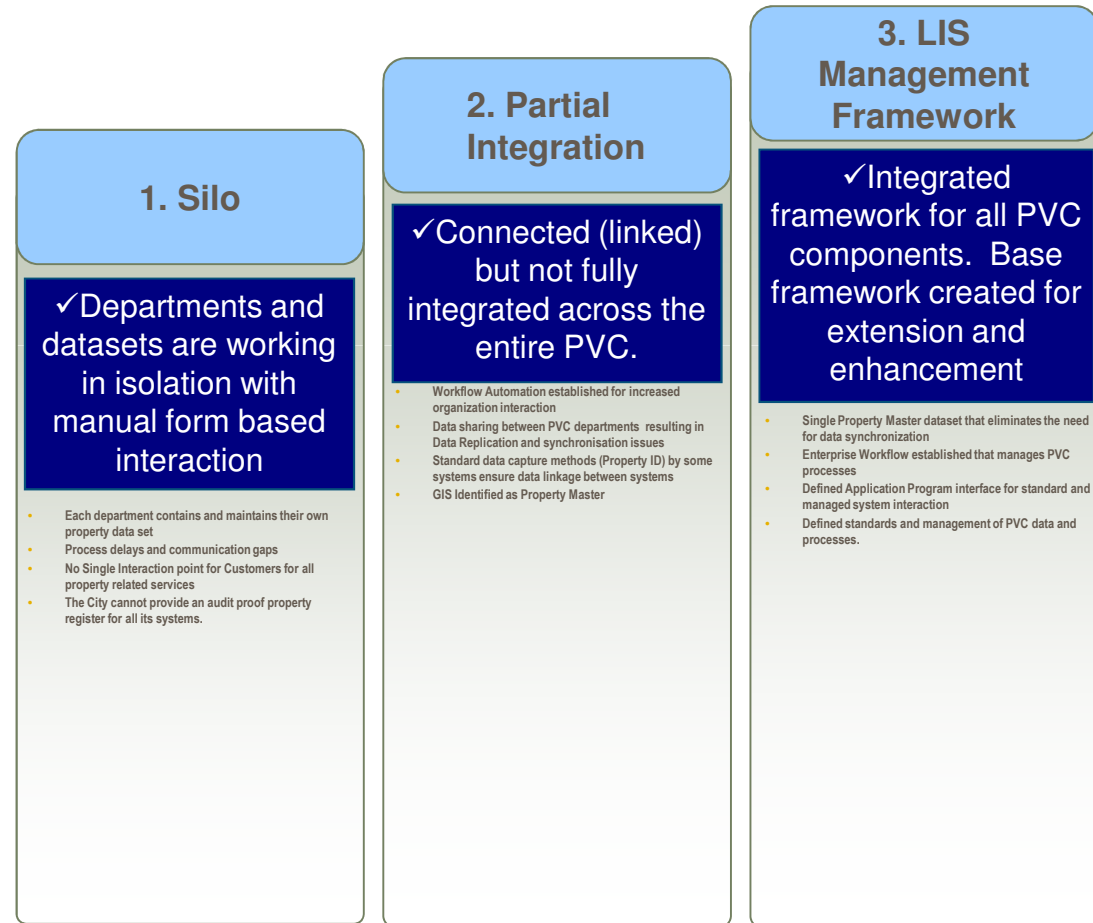


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CHANGE: TECHNOLOGY

Data matrix: LIS SDE database

On the road to LIS maturity



————— Evolution Path for COJ LIS —————>

The logo for Joburg, featuring the word "Joburg" in a stylized font with a yellow dot above the letter 'o' and a thin black line above the letters 'j' and 'o'.

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Chapter 5

SI Management Facts vs Fiction



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SPATIAL INFORMATION MANAGEMENT

Top 5 Facts vs Fiction

FICTION

- 1. SI management is a one-man show**
- 2. It is data management**
- 3. It is an operational matter and each department/section can deal with it in isolation**
- 4. The recipe is the same for every organisation - One model fits all**
- 5. It is a once-off exercise**

FACT

- 1. SI management is a team effort, with a strong people's network**
- 2. It is an integrated approach that includes data, people, processes and technology**
- 3. Effective SI management cuts across organisational boundaries and requires top management support and governance on all levels of the organisation**
- 4. Every organisation is unique in terms of its complexity, character and size and requires a tailor-made approach**
- 5. It is a way of life and should be incorporated into our daily operations**

The logo for Joburg, featuring the word "Joburg" in a stylized font with a yellow dot above the letter 'o' and a thin black line above the letters 'j' and 'o'.

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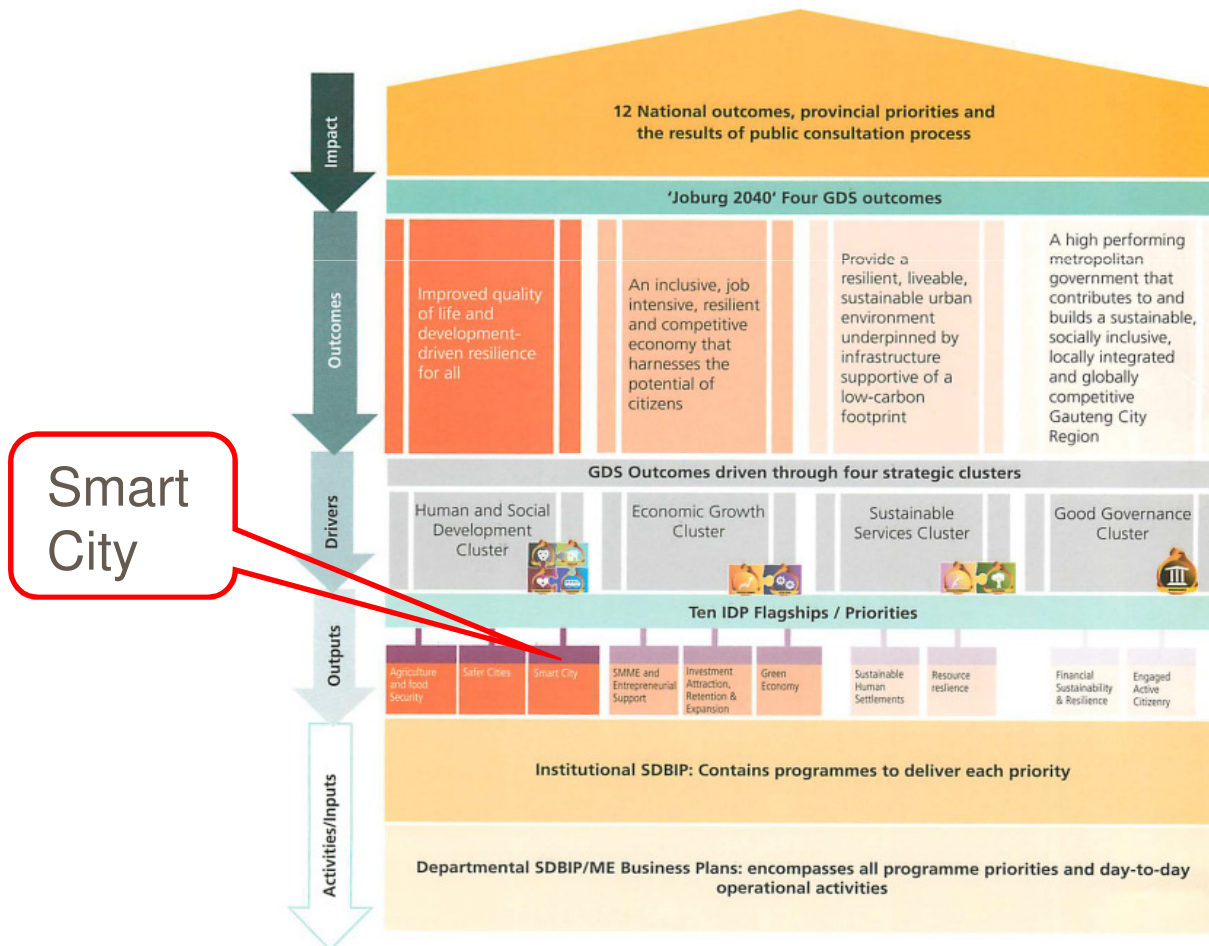
61

Chapter 6

Towards the future

SI Management has become more important than ever before

GIS offers the platform for a smart city. Actionable, location-based intelligence requires integrated, quality spatial information from all the disciplines across the city.



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Chapter 7

The verdict



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SURVIVAL Success



City of Johannesburg
Office of the Executive Head
Department of Development Planning

10th Floor A Block
Metropolitan Centre
158 Loveday Street
Braamfontein

PO Box 30733
Braamfontein
2017

Tel +27(0)11 407-8020
Fax +27(0)11 339-1118

www.joburg.org.za

19 November 2013

Ms Marcelle Hattingh
SAP No:30038484
Development Planning

Dear Ms Hattingh

PLACEMENT

This letter serves to advise that the City of Johannesburg has resolved to place you as follows:

Department: Development Planning
Position: Director: Corporate Geo-Informatics

Date: 1 December 2013

Congratulations on your successful placement within Development Planning. For further information kindly contact your GHCM (Field Services) Office.

Yours faithfully

Yondela Simelela
EXECUTIVE HEAD
DEVELOPMENT PLANNING

“Congratulations on your successful placement ...”



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SURVIVAL

Toolkit for survival



Spatial information management

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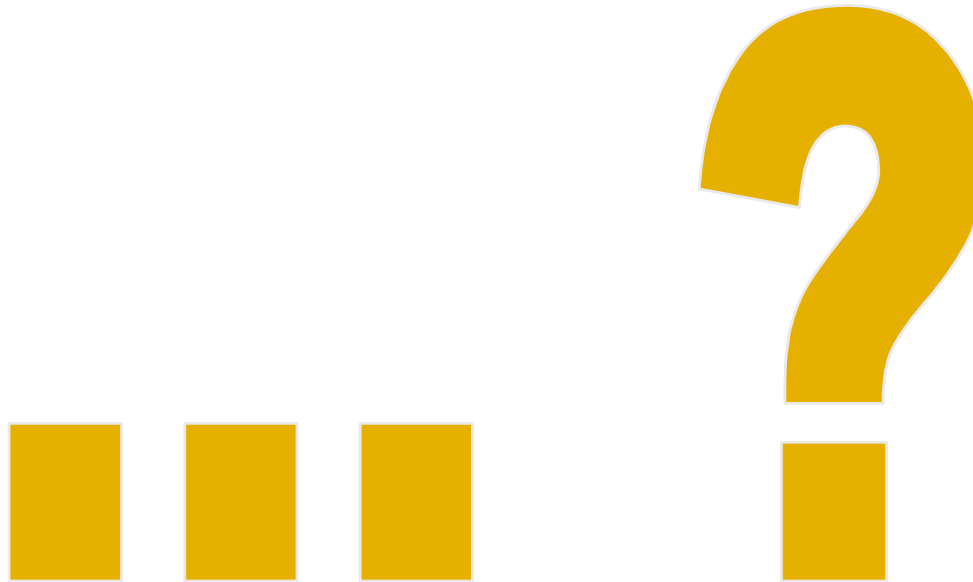
Chapter 8

To be continued ...



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QUESTIONS



Marcelle Hattingh

Director: Corporate Geo-Informatics

City of Johannesburg, South Africa

marcelleh@joburg.org.za



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