

GISSA 2007

South African Address Initiative

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SANS1 883 – Address Standard

Part 1:

Data format of addresses

Part 2:

Guidelines for addresses in databases, data transfer, exchange and interoperability

Part 3:

Guidelines for address allocation and updates

SANS1 883–1: Data format...

Scope

- **Data elements** of addresses
- **Address types** that can be constructed from the data elements
- **Terms & definitions** related to addresses
- Applicable to the **whole of South Africa**
 - not restricted to formal/informal or urban/rural
- Applies to the **geo-referenced location** of an address
- For address types **assigned officially by municipalities**
- **And for addresses commonly in use**

SANS1 883–1: Data format...

Address definition

An address unambiguously specifies a point of service delivery.



SANS1 883–1: Data format...

1. Address Data Elements

- Address components that are used to construct an address
- AddressNumber, StreetName, StreetType, Locality...

2. Address Types

- Street Address, Building Address, Intersection Address, SAPO Box Address...

3. Address Attributes

- For any type of addresses
- AddressID, PointOfObservation, LifeCycleStage, OfficialStatus...

SANS1 883–1: Data format...

CompleteAddressNumber =

[AddressNumberPrefix, [AddressNumberSeparator]]

AddressNumber

[AddressNumberSeparator, [AddressNumberSuffix]]

Definition:

The street number including prefix and suffix as it appears in the street address type.

Other Names:

Full street number

Data Type: Text

Example:

A 20 Jorrissen Street

33C Judges Avenue

D58 Hawk Street

SANS1 883–1: Data format...

PlaceName = RegisteredName | UsedName

Definition:

Name for the area on a level immediately above the complete street name as registered at the surveyor general

Other Names:

township, township zone, allotment, allotment area, proclaimed town, town

Values:

Minor region names from the surveyor general, augmented with extensions. Example: The surveyor general name would only list “GARSFONTEIN”, but this list should include all the extensions such as “GARSFONTEIN EXT 4”, “GARSFONTEIN EXT 10”, etc.

Data Type: Text

Example:

443 Kiepersol Road **Lynnwood** Pretoria City of Tshwane
74 Observatory Road **Pretorius Park Ext 8**
7 Stanley Road **Cape Town** Western Province

SANS1 883-1: Data format...

StreetAddress = StreetAddressPart, Locality

StreetAddressPart =

[**CompleteAddressNumber** | StreetNumberRange], CompleteStreetName

Locality = PlaceName, [TownName], [MunicipalityName],
[Province], [SAPOPostcode], [Country] | [CountryCode]

PlaceName = **RegisteredName** | UsedName

CompleteStreetName

= StreetName

| [[StreetNameModifier], StreetNameDirectional], StreetName,
StreetNameType

| [StreetNameModifier], StreetName, StreetNameType,
[StreetNameDirectional]

| [StreetNameDirectional], StreetName, StreetNameType,
StreetNameModifier]

| StreetNameType, StreetName, [[StreetNameDirectional],
StreetNameModifier]

SANS 1883-1: Data format...

Dr Lategan Road Groenkloof

StreetAddress = StreetName, RegisteredName

1736 Konko Lane Woodhill

StreetAddress = CompleteStreetNumber, UsedName,
RegisteredName

70 Park Street West Hatfield City of Tshwane Gauteng

StreetAddress = CompleteStreetNumber, StreetName,
StreetType, StreetNameDirectional,
RegisteredName, Municipality, Province

18-20 Settlers Avenue Rhodes

StreetAddress = StreetNumberRange, StreetName,
StreetType, RegisteredName, Country

SANS1 883–1: Data format...

Address Types

Traditional formalized:

Street Address

Site Address

Intersection Address

Composite:

Building Address

Landmark Address

SA Post Office:

SAPO Box Address

SAPO Street Address

SAPO Post Restante
Address

SAPO–Type Village
Address

Descriptive:

Farm Address

Informal Address

SANS1 883–1: Data format...

Site Address

- 25436 Soshanguve CC
- Erf 3645 Soshanguve CC
- Plot 1 /45 Waterkloof AH
- Portion 938 Mooikloof
- Erf 2/402 Silver Lakes
- Farm 1 /394 Rietfontein Bloemfontein RD
- Portion 938/341–JR
- House 5 Ramakokstad

Intersection Address

- Corner of Oyster Crescent and Hilken Drive, Umhlanga
- Corner of Festival and Schoeman Streets, Hatfield
- Barnes and Kloof Street, Bloemfontein

SANS 1883-1: Data format...

Building Address

- Commission House Pretorius Street Pretoria
- Brooklyn Mall Shop 358 Brooklyn Road Brooklyn
- Unit 4A Techno Park John Vorster Road Centurion
- Block 816 Diamond House Eloff Street Braamfontein
- Election House 260 Walker Street Sunnyside
- Room C212 2nd Floor Asterhof House South Street Hatfield
- ABSA Towers North 4th Floor Marshall Street Marshalls Town
- Block 13 Flat 30 Bengal Street Laudium

Landmark Address

- Parliament Cape Town
- Room 4-66 IT Building University of Pretoria Pretoria
- Voortrekker Monument Pretoria
- Church Square Pretoria City of Tshwane
- Cape Town International Airport Cape Town

SANS1 883–1: Data format...

SA Post Office Box Address

- PO Box 2947 Hatfield 0028 ZA
- Private Bag X2438 Glenstantia 0010
- Postnet Suite 29487 Private Bag 10 Menlo Park 0102

SA Post Office Street Address

- 2038 Schoeman Street Hatfield 0083
- 477 Chopin Street Glenstantia 0181 South Africa

SA Post Office Village Address

- 012151 Ngxingxolo Mooiplaas 5228
- 010101 Feni Peddie 5640

SA Post Office Poste Restante Address

- Poste Restante Hazyview 1242

SANS1 883–1: Data format...

Farm Address

- My Geluk S935 opposite farm dam Koffiefontein Letsemeng Local Municipality
- Grootgeluk Kimberley Road Bloemfontein

Informal Address

- First house on the right after the Vodacom booth Olievenhoutbosch

SANS1 883–1: Data format...

Address Attributes

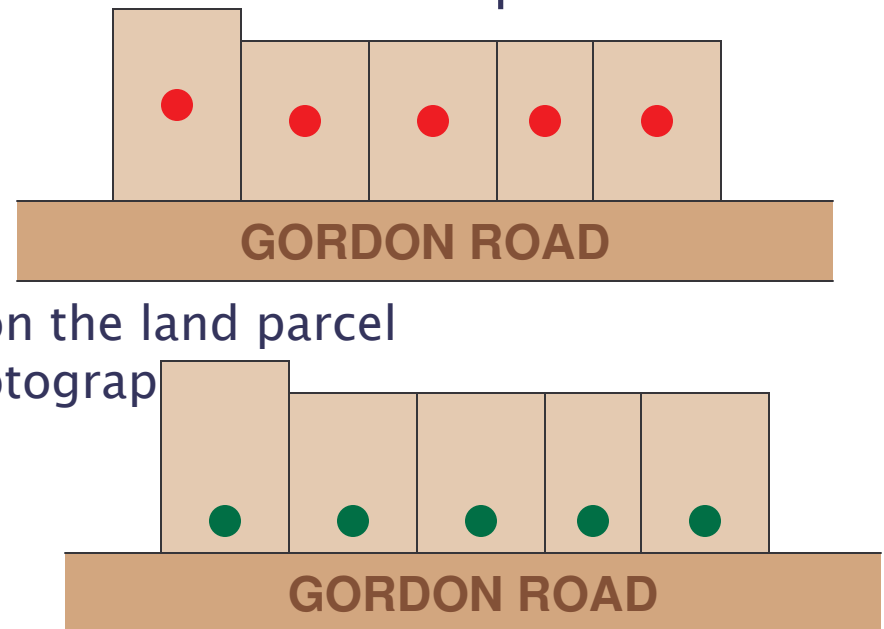
- Address ID (mandatory)
 - The unique identification number assigned to an address by the address data provider.
- Address Data Provider (mandatory)
 - Organization that creates and maintains the address dataset.
- Address Source (mandatory)
 - Reference to the original source from where the data provider obtained the data, and where the address was created.
- Address X and Y Coordinates (mandatory)

SANS1 883-1: Data format...

Address Attributes

- Point of Observation (mandatory)
Relative position to the physical structures and/or other electronic data according to which the address point location was captured.

- No Coordinates
- **Centre of land parcel**
- **Street front**
- GPS coordinates anywhere on the land parcel
- Coordinates from aerial photograph
- Centre of intersection
- Street corner (pavement)
- Post office location
- Centre of dwelling
- GPS coordinates anywhere close to the dwelling
- Farm entrance
- GPS coordinates anywhere on the farm



SANS1 883–1: Data format...

Address Attributes

- Address Life Cycle Stage (mandatory)
 - Future:
 - address has been planned as a point of service delivery
 - address is *not yet in use*
 - Active:
 - address has been verified as a point of service delivery
 - the address is *in use*
 - Retired:
 - address was used at some stage but is not any longer
 - the address is *not used anymore*
 - Unknown Stage:
 - stage is *unknown*



SANS1 883–1: Data format...

Address Attributes

- Address Official Status (mandatory)
 - Official:
 - address as *assigned and used by the municipality* for delivery of their services (always registered name)
 - Official Alternate:
 - for historic addresses where *more than one street name appears on the general plan*
 - e.g. Church Street and Kerk Straat
 - e.g. Enkeldoorn and Enkeldoring Avenue in Montana
 - Unofficial:
 - address as *assigned and used by service delivery organizations other than a municipality*
 - e.g. SA Post Office, Eskom, Telkom, private data vendors or a customer at a financial institution.
 - Colloquial addresses (Woodhill, etc).
 - alternate or second/non–primary entrance to the property as assigned by the municipality.
 - Unknown Status:
 - official status *not known*

SANS1 883–1: Data format...

Address Attributes

- Life Cycle Stage & Official Status
 - Future + Official:
 - Not yet in use
 - approved as a point of service delivery by the municipality
 - e.g. planned subdivision, township development
 - Active + Official:
 - In use
 - assigned as the primary address by the municipality
 - Active + Retired:
 - address was used at some stage but not any longer
 - when it was used, it was official
 - e.g. due to street name change, subdivision

SANS1 883 – Address Standard

Part 1:

Data format of addresses.

Part 2:

Guidelines for addresses in databases, data transfer, exchange and interoperability

Part 3:

Guidelines for address allocation and updates

SANS 1883-2 Addresses in databases...

Scope

- How address records shall be stored in databases
- How address data shall be transferred or exchanged
 - For example geocoding, data cleaning and/or address verification
- **XML-compatible entity relationship diagram** for a database schema that stores addresses complying with SANS 1883-1
- Normative Annexes
 - how addresses complying with Part 1 shall be exchanged in various encoding formats (CSV, XML, etc.)
- **Does not provide the design for a database that will store an official national address register**
 - accommodates all types of address as used in South Africa

SANS1 883-2 Addresses in databases...

SANS1883-2 COMMITTEE DRAFT
Guidelines for addresses in databases for
exchange and interoperability
Draft Entry Relationship Diagram
June 1 2005

IkpAddressLifeCycle1		
PK	<u>pkAddressLifeCycleID</u>	int
	sAddressLifeCycle	varchar(255)

IkpAddressType		
PK	<u>pkAddressTypeID</u>	int
	sAddressType	varchar(255)

IkpRegisteredName		
PK	<u>pkRegisteredNameID</u>	int
	sRegisteredName	varchar(64)
	sRegisteredNameCode	varchar(4)

IkpStreetType		
PK	<u>pkStreetTypeID</u>	int
	sStreetType	varchar(255)

IkpStreetNameDirection		
PK	<u>pkStreetNameDirectionalID</u>	int
	sStreetNameDirectional	varchar(255)

IkpMunicipality		
PK	<u>pkMunicipalityID</u>	int
	sMunicipalityName	varchar(128)
	sMunicipalityCode	varchar(10)

IkpStreetNameModifi		
PK	<u>pkStreetNameModifierID</u>	int
	sStreetNameModifier	varchar(255)

IkpProvince		
PK	<u>pkProvinceID</u>	int
	sProvinceName	char(10)

IkpSiteNumt		
PK	<u>pkSiteNumberID</u>	int
	sSiteNumber	varchar(255)

IkpCountry		
PK	<u>pkCountryID</u>	int
	sCountry	varchar(64)
	sCountryCode	varchar(3)

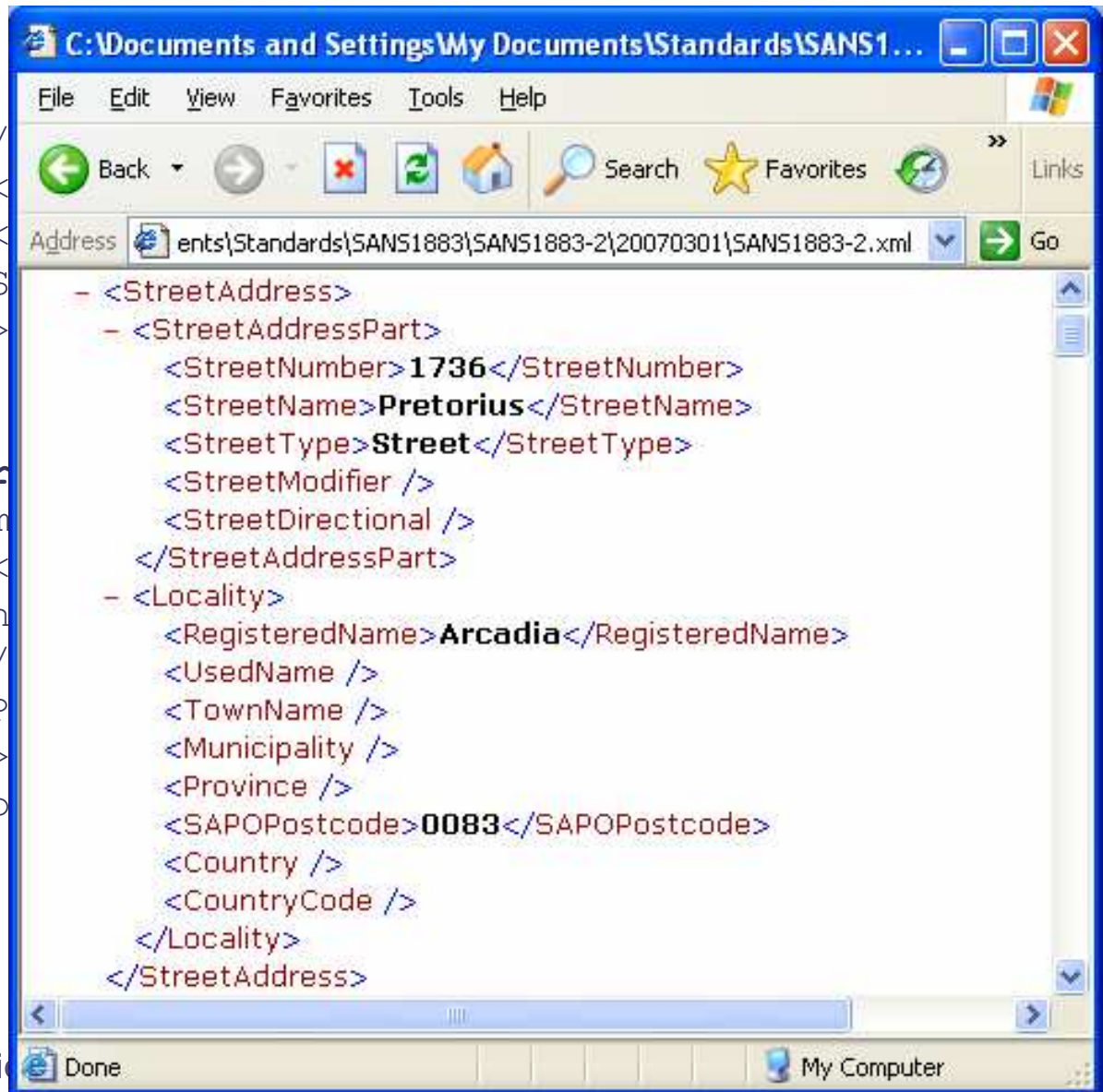
tblUnit		
PK	<u>pkUnitID</u>	int
	sUnitType	char(64)
	sUnitIdentifier	char(32)
	sFloorType	char(64)
	sFloorIdentifier	char(32)
	iAddressElevationLevel	int
FK1	<u>fkBuildingID</u>	int
FK2	fkAddressID	int
	dLongitude	float
	dLatitude	float
FK6	fkPointOfObservationID	int
FK5	fkFeatureTypeID	int
FK3	fkAddressLifeCycleID	int
FK4	fkAddressOfficialStatusID	int

tblFarmBuilding		
PK	<u>pkFarmBuildingID</u>	int
FK	fkUnitID	int
FK	fkBuildingID	int

ss Standard

SANS1 883-2 Addresses in databases...

```
<StreetAddress>  
<StreetAddressPart>  
  <StreetNumber>404</StreetNumber>  
  <StreetName>Sandra</StreetName>  
  <StreetType>Street</StreetType>  
  <StreetModifier></StreetModifier>  
  <StreetDirectional></StreetDirectional>  
</StreetAddressPart>  
<Locality>  
  <RegisteredName>Garcia</RegisteredName>  
  <UsedName></UsedName>  
  <TownName>Pretoria</TownName>  
  <Municipality></Municipality>  
  <Province>Gauteng</Province>  
  <SAPOPostcode></SAPOPostcode>  
  <Country></Country>  
  <CountryCode>ZA</CountryCode>  
</Locality>  
</StreetAddress>
```



SANS1 883-2 Addresses in databases...

Microsoft Excel - SANS1883_Address.xls

Type a question for help

Arial 8 B I U %

C16 R374

	B	C	D	E	F	G	H	I
1	StreetNumber	StreetName	StreetType	StreetNameDirectional	StreetNameModifier	UsedName	RegisteredName	TownName
2		Dr Lategan	Road				GROENKLOOF	
3	1736	Pretorius	Street				ARCADIA	
4	70	Park	Street				HATFIELD	
5	938	Nelson Mandela	Drive				RUSTENBURG	
6	938	Van Staden	Street				RUSTENBURG	
7	18-20	Settlers	Avenue			Rhodes		
8	260	Walker	Street				SUNNYSIDE (PTA)	
9	18	Settlers	Avenue			Rhodes		
10	20	Pine	Road			Woodhill		
11	276	Why	Street			Woodhill		
12		Marshall	Street				JOHANNESBURG	
13		Park	Street	East			HATFIELD	Pretoria
14		Brooklyn	Road				BROOKLYN	
15		Parliament	Road				MID-ENNERDALE	
16	15	R374	Road			Escort		
17	477	Chopin	Street				CONSTANTIA PARK	
18	5	First	Avenue			Woodhill	PRETORIA PARK	

StreetAddr / BuildingAddr / IntersectionAddr / SiteAddr / LandmarkAddr / SAPOBoxAddr

Ready

SANS1 883-2 Addresses in databases...

```
SANS1883_Address.csv - SciTE
File Edit Search View Tools Options Language Buffers Help
AddressID,StreetNumber,StreetName,StreetType,StreetNameDirectional
1,,Dr Lategan,Road,,,,GROENKLOOF,,,,,0,0,Street front,Street Addr
2,1736,Pretorius,Street,,,,ARCADIA,,,,,0083,,0,0,Centre of land par
3,70,Park,Street,,,,HATFIELD,,City of Tshwane Metropolitan Municip
4,938,Nelson Mandela,Drive,,,,RUSTENBURG,,,,,South Africa,0,0,Cent
5,938,Van Staden,Street,,,,RUSTENBURG,,,,,South Africa,0,0,Centre
6,18-20,Settlers,Avenue,,,Rhodes,,,,,0,0,GPS coordinates anywher
7,260,Walker,Street,,,,SUNNYSIDE (PTA),,,,,,0,0,Centre of land par
8,18,Settlers,Avenue,,,Rhodes,,,,,0,0,Centre of land parcel,Stre
9,20,Pine,Road,,,Woodhill,,,,,0,0,Street front,Street Address,Ac
10,276,Why,Street,,,Woodhill,,,,,0,0,Street front,Street Address
11,,Marshall,Street,,,,JOHANNESBURG,,,,,0,0,Street front,Street A
12,13,,Park,Street,East,,,HATFIELD,Pretoria,,,,,0,0,No Coordinates,St
13,,Brooklyn,Road,,,,BROOKLYN,,,,,0,0,No Coordinates,Street Addre
14,,Parliament,Road,,,,MID-ENNERDALE,,,,,0,0,No Coordinates,Stree
15,23,15,R374,Road,,,Escort,,,,,0,0,No Coordinates,Street Address,U
16,25,477,Chopin,Street,,,,CONSTANTIA PARK,,,,,0,0,No Coordinates,St
17,32.5,First.Avenue...Woodhill.PRETORIUSPARK.....0.0.No Coordinates
```

SANS1 883 – Address Standard

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Data format of addresses.

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Guidelines for address allocation and updates

SANS1 883–3 Address allocation...

- Municipalities already have regulations for address allocation
- SANS1 883–3 should note that addresses have to comply with the regulations of the local municipality and the SA Geographic Names Council
- SANS1 883–3 is for areas where the local municipality does not have regulations
- Proposed that SANS1 883–3 is compiled from the current regulations of the metropolitan municipalities

SANS1 883–3 Address allocation...

Scope

- Guidelines for the *allocation and maintenance of addresses* for all address types
 - rules, orientation, advice, recommendations
 - relating use of SANS 1 883–1
- Objective
 - address *data exchange and interoperability*
 - not how data is managed and maintained on a day-to-day basis
- The process of allocating and updating erf numbers falls under the Chief Surveyor General

SANS1 883–3 Address allocation...

1. 'Formal' address allocation
2. 'Informal' address allocation
3. Spatial Considerations
4. Address Updates

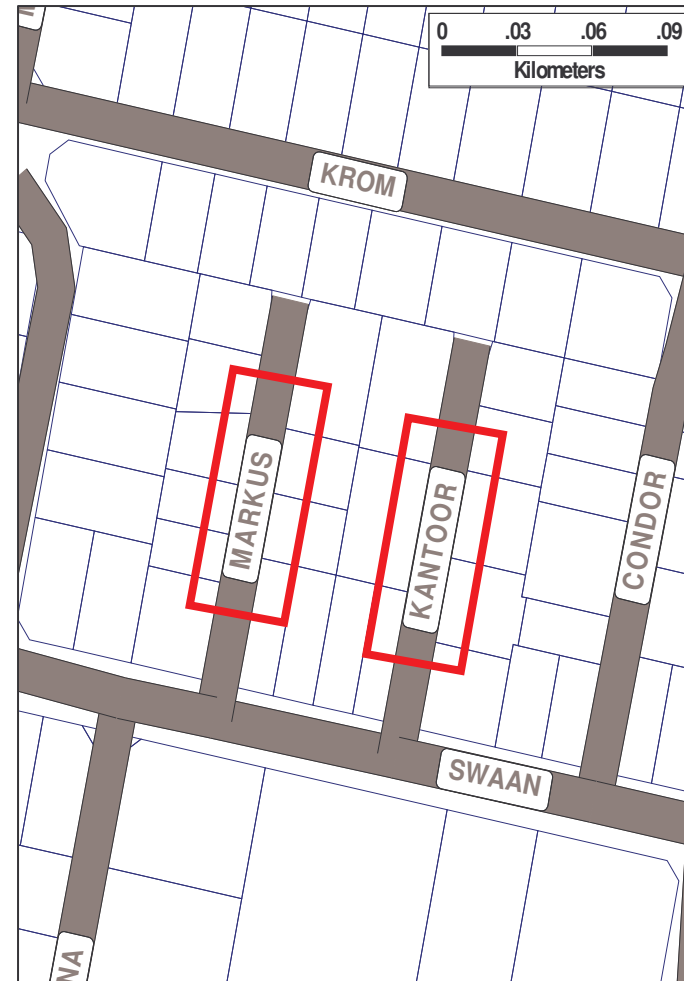
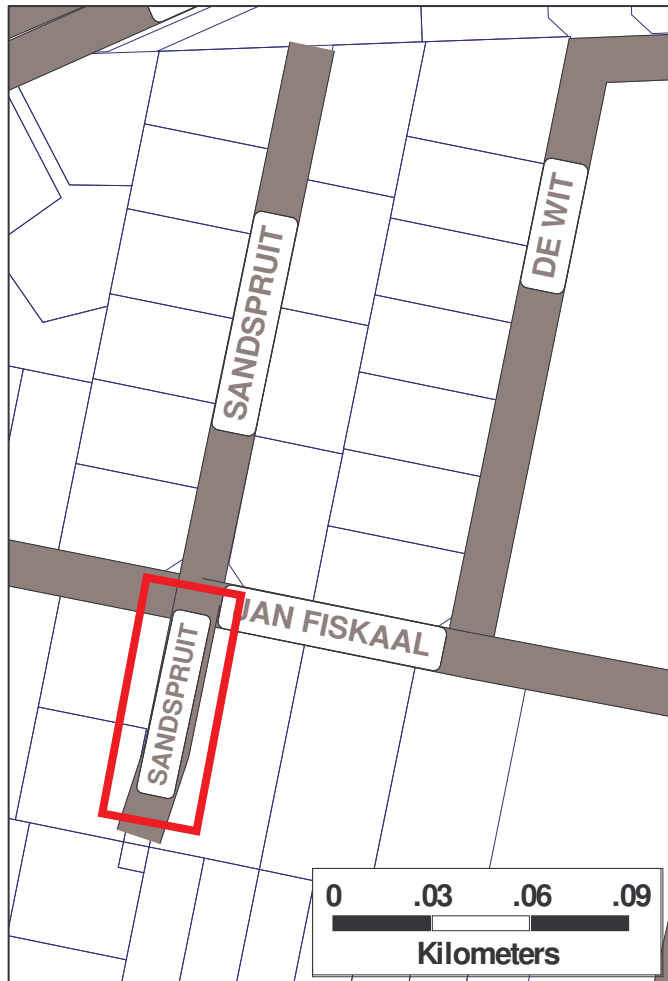
SANS1 883-3 Address allocation...

1. 'Formal' address allocation: Street Names



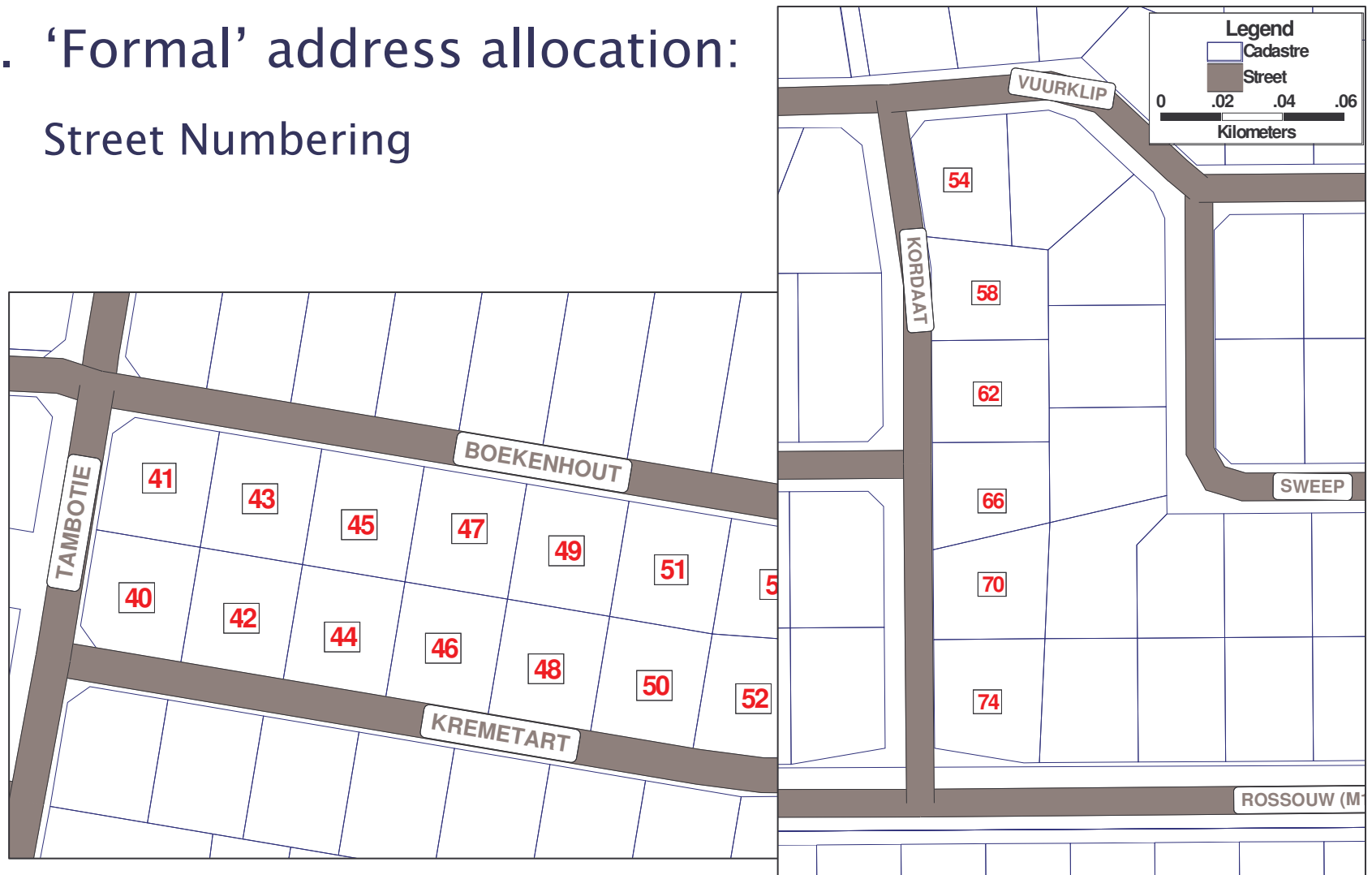
SANS1 883-3 Address allocation...

1. 'Formal' address allocation: Street Names



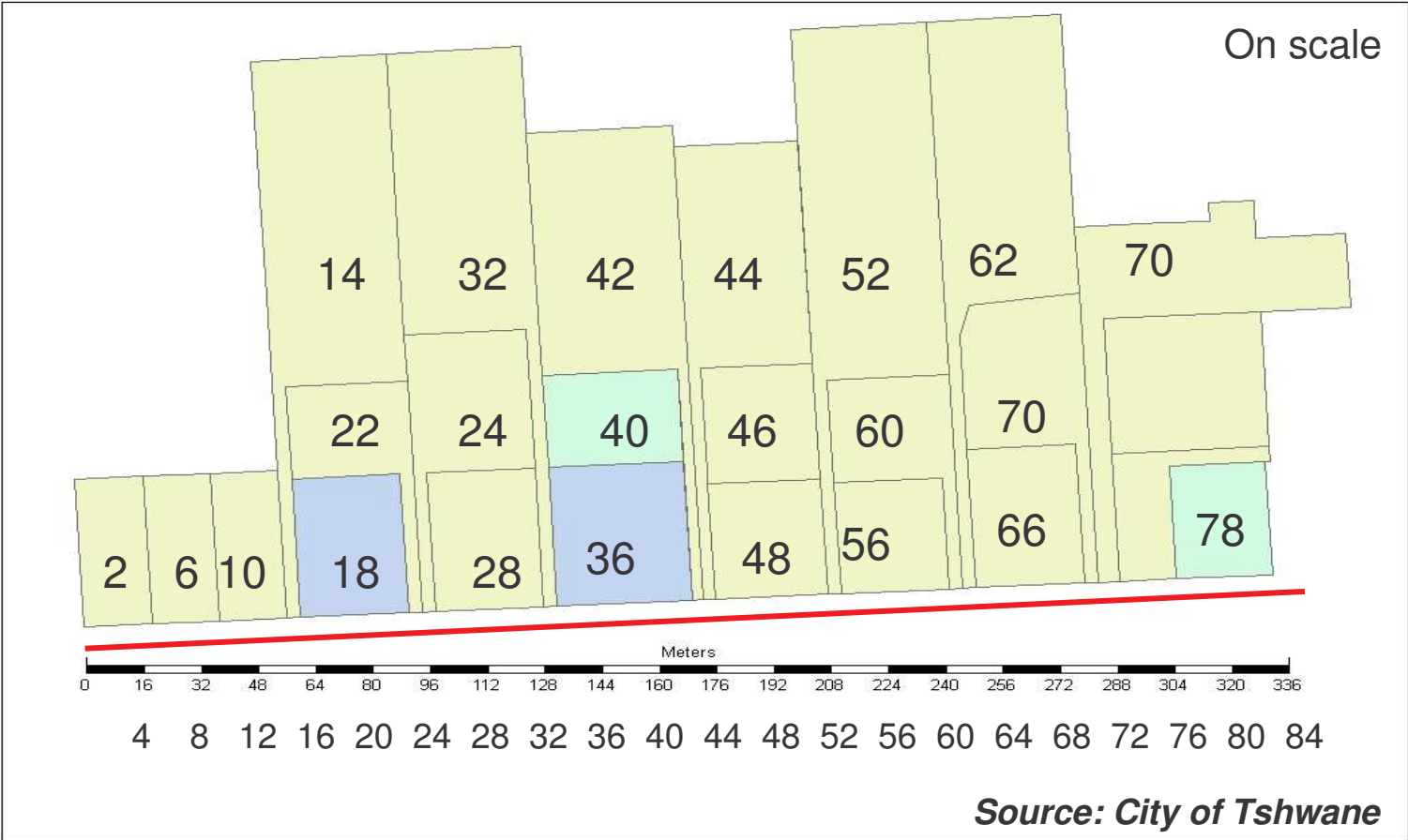
SANS1 883-3 Address allocation...

1. 'Formal' address allocation:
Street Numbering



SANS1 883-3 Address allocation...

1. 'Formal' address allocation: Street Numbering



SANS1 883–3 Address allocation...

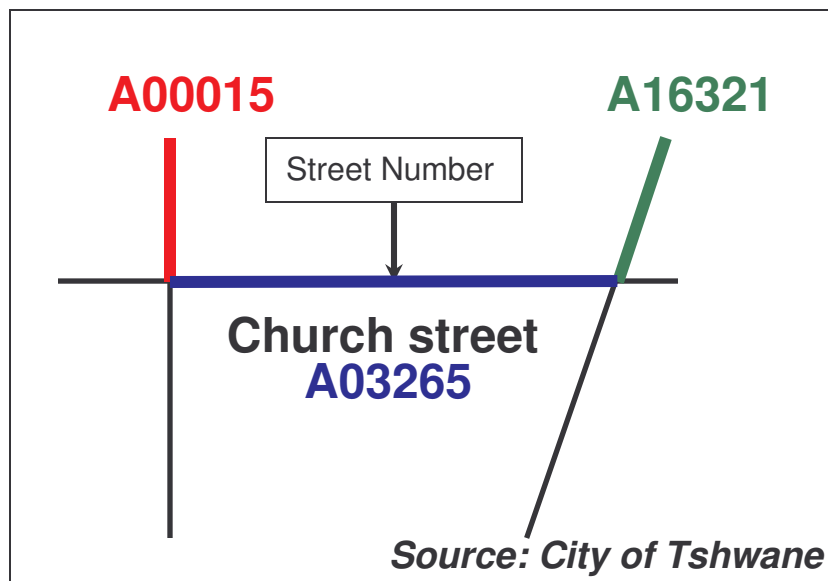
2. ‘Informal’ address allocation

- SA Post Office guidelines for rural addresses
 - Example: address 010201
 - 01 –village code/village name
 - 02 –Zone/section/tribal boundary
 - 01 –House number/delivery point

SANS1 883–3 Address allocation...

3. Spatial Considerations

- Address location: as per point of observation
- Feature type: point, line or polygon
- Link to street centreline



- Link to suburb: spatially

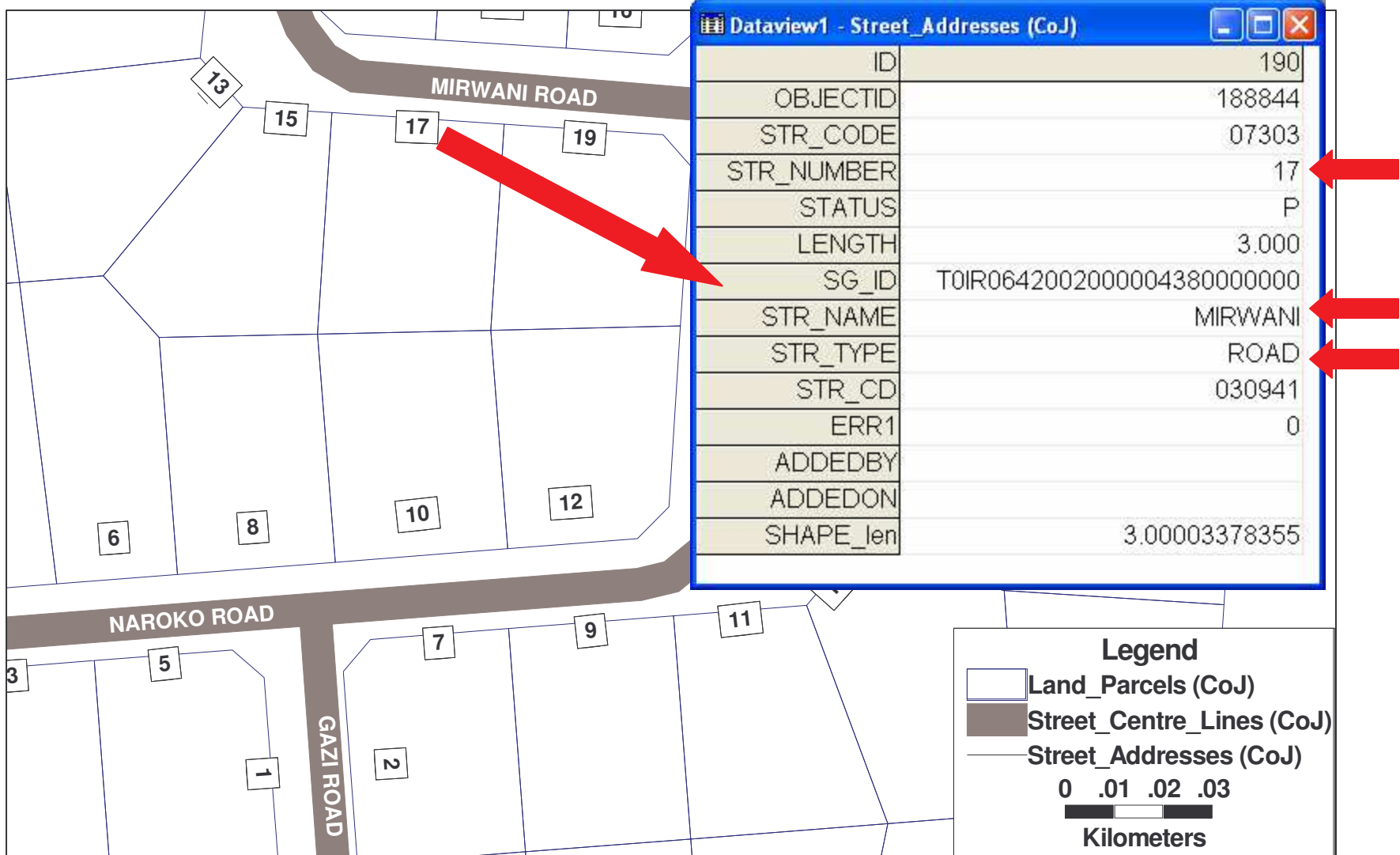
SANS1 883–3 Address allocation...

4. Address Updates

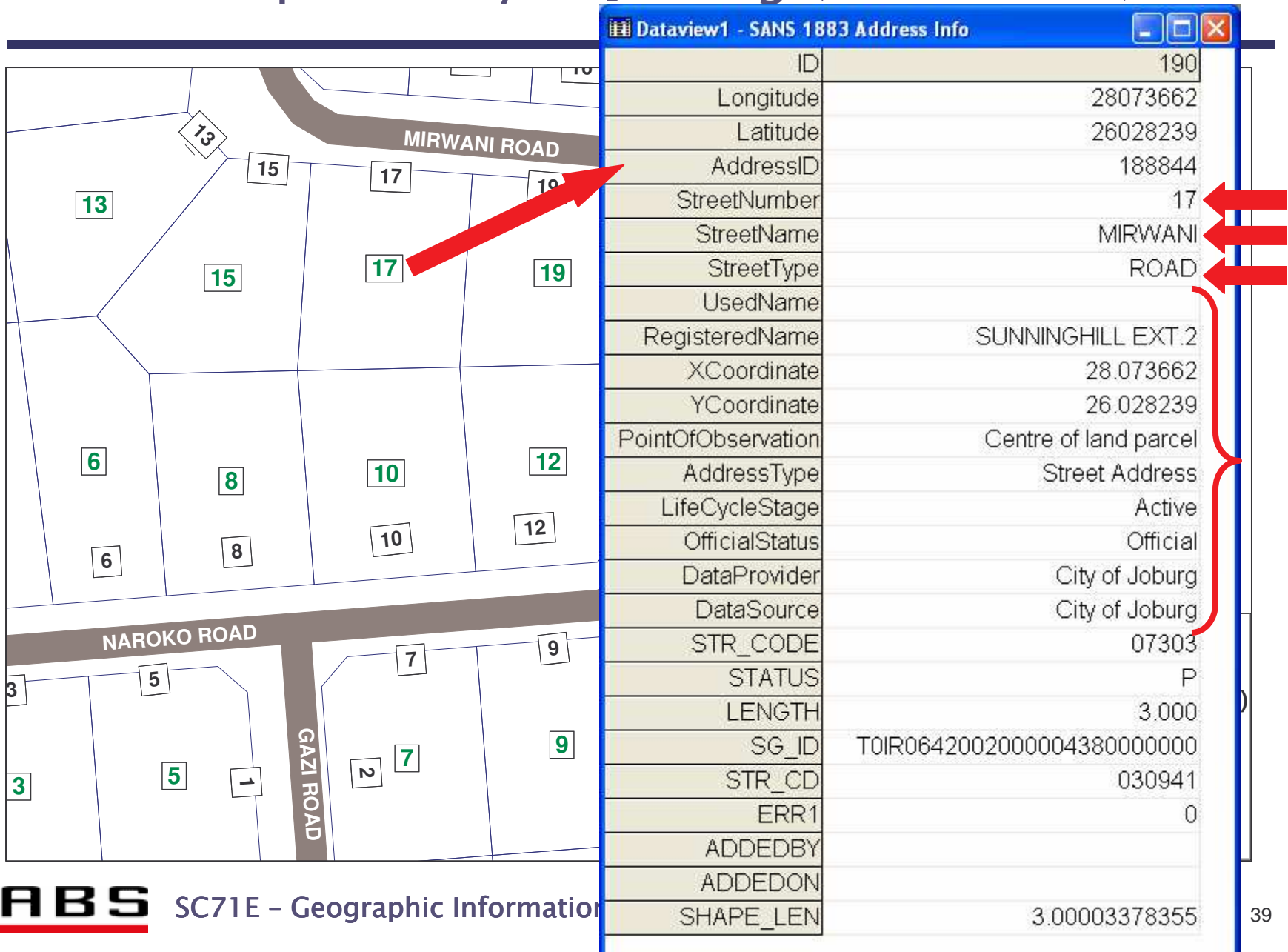
- Status change, new developments, name changes
- Name changes
- Language issues

From Stage & Status	To Stage & Status	Description
Future + Official	Active + Official	As soon as the address is available or in use
Active + Official	Retired + Official	address replaced by another one, e.g. street renaming, cadastre change, new development
Future + Official	Retired + Official	The address was planned but never used .

Data Sample – City of Joburg



Data Sample - City of Joburg (SANS 1883)



SANS1 883 – Address Standard

Reflection

Registered names

vs.

used/colloquial name

vs.

post office names

e.g. Constantia Park vs. Glenstantia

e.g. Pretorius Park Ext. 6 vs. Woodhill

SANS1 883 – Address Standard

Reflection

Writing a standard is about being...

prescriptive

or

accommodating all kinds of addresses for interoperability?

e.g. direction of street numbering...

SANS1 883 – Address Standard

Reflection

maintaining/accommodating existing address

vs.

allocating new addresses

e.g. list of street types approved by the SAGN:
Unknown, Avenue, Boulevard, By-pass, Close,
Crescent, Drive, Expressway, Freeway, Lane,
Nature trail, Road, Street

Bibliography

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