



Open  
Spatial  
Solutions

Spatially enabling your organisation



# *Tapping into Open Source*

*Laurette Coetzee  
Account Manager*





# Agenda

- Background
- Scope
- Solution
- Current system
- Issues
- Conclusion



# Background

- Focus on Open Source GIS application
  - Internet/Intranet
- JW is one of our biggest clients
- Used Autodesk Mapguide 6.5
  - Processor license
  - 10-user license
- Annual license fees exorbitant – better option





# Background (continued)

- Comparative costing
  - Mapguide Commercial license fees vs
  - Mapguide Open Source development costs
  - Result: More cost effective to redevelop in Open Source than continue with annual licensing fees
- At first a bit skeptic and uncertain about viability of redeveloping existing system





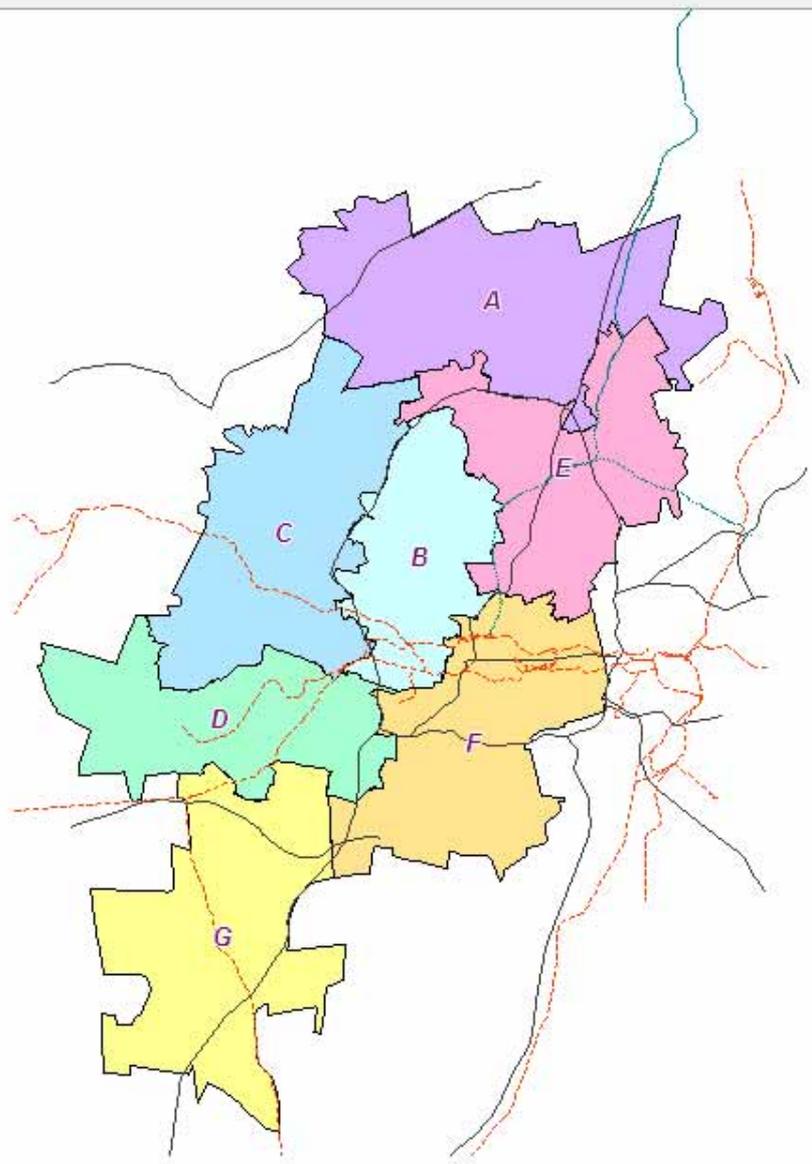
# Scope

- Faithfully replicate existing site as on Mapguide 6.5
  - Down to true color replication – RGB values
- Replicate all Applications developed in-house
- Develop additional applications as identified throughout project





- Layers
- ERROR\_LOG
  - JW
  - TOPOGRAPHICAL DATA
  - WATER
  - MISCELLANEOUS
  - ROADS AND RAILWAYS
  - SEWER
  - NSD
  - CADASTRAL

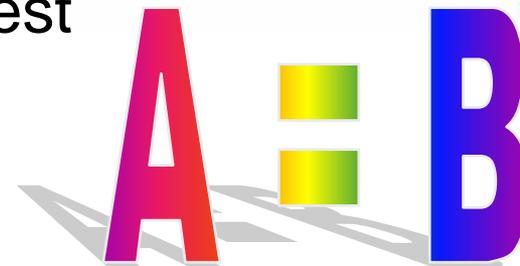


- Basic Module
- Sewer Module
- Water Module
- Hansen Module
- Edit Module
- Redlining Module
- Supervisor Module



# Solution

- Replication of existing Mapguide 6.5 site
  - Long process
    - Migration tool to migrate from Mapguide 6.5 to OpenSource not very effective
    - Only migrates symbols
    - Had to redevelop all the rest





# Solution (Continued)

- At this stage we feel that Mapguide Studio (cost involved - +/- R3000) is more powerful and comprehensive for setting up the Map Window File
  - Mapguide Author – part of Mapguide suite
  - OpenSource Editor available – not yet sufficient – can do basic authoring





# Solution (Continued)

- Replicate existing applications developed in-house
  - Mapguide 6.5 development was done in ASP and Cold Fusion
    - Cold Fusion had cost implication
  - Mapguide Open Source development done in ASP.NET





# Current system

- The current system contains the following applications:
  - Custom searches 
  - Custom reports 
  - Custom Show Info pages 
  - Link with Hansen – Way leave Management System 
  - Link with Rodding and Jetting – Work scheduling 
  - Redlining 
  - Update attribute data via Mapguide front-end 
  - Security Module 





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**Parcel Key Search - Windows Internet Explorer**

Parcel Key:

**Search Results:**

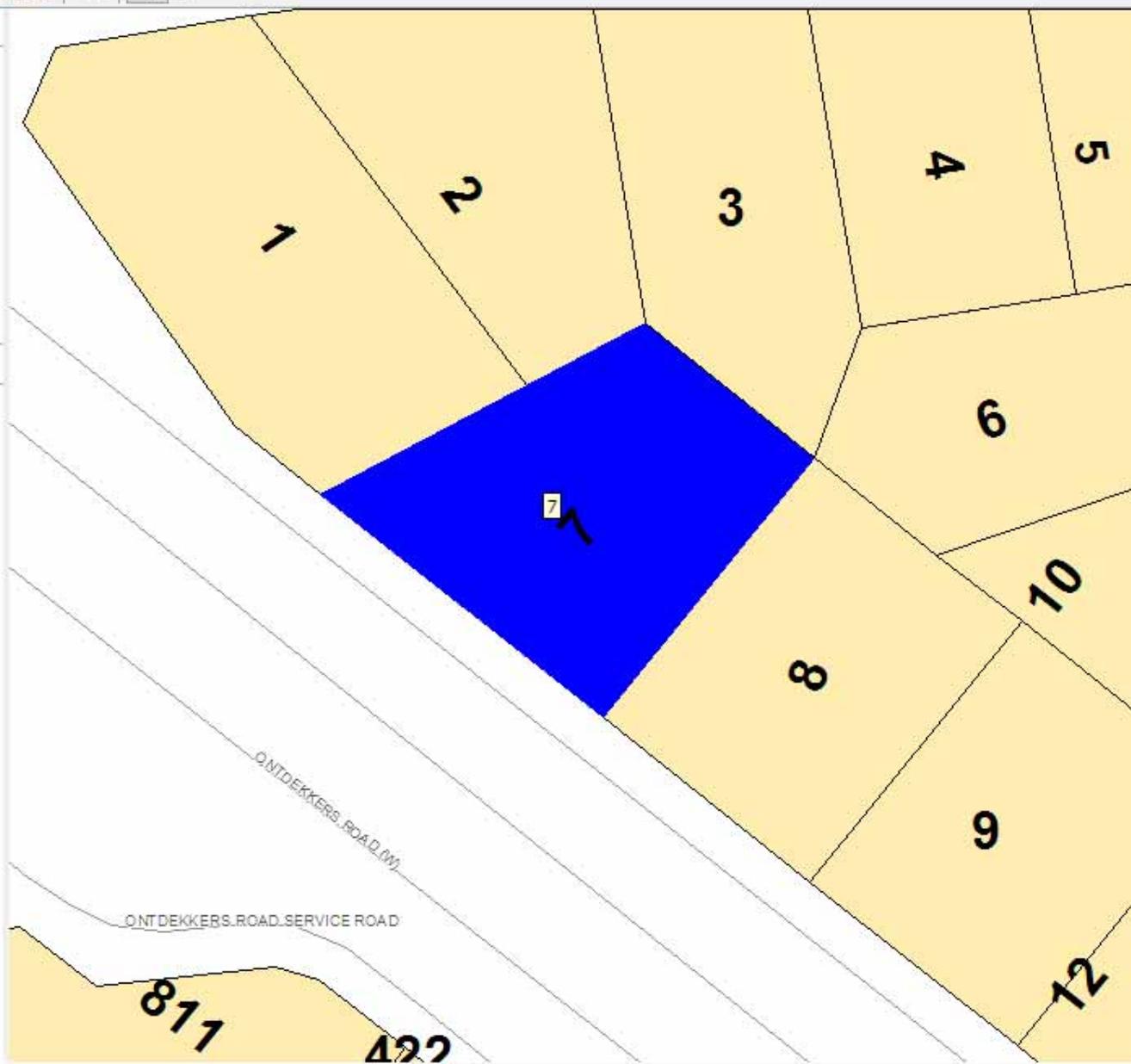
123A000000000100000
123A000000000200000
123A000000000400000
123A000000000500000
123A000000000600000
123A000000000700000
123A000000000800000
123A000000001000000
123A000000001100000
123A000000001200000
123A000000001400000
123A000000001500000
123A000000001600000
123A000000001700000

Done Local intranet 100%

- Basic Module
- Sewer
- Water Module
- Hansen Module
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  - STORMWATER



- Basic Module
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X: -108208.120874, Y: -2894862.990854 (Meter)

1 feature selected

1: 800.00

58.72 x 55.68 (mi)

Powered by MapGuide





- Layers
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Summary of All Cadastral Objects - Windows Internet Explorer

# Summary of All Cadastral Objects

8-AUG-2008

Object Type	Total Objects
Townships	4851
Parcels	662046
Wards	106
Zoning	0
Densit	0
Land U	0
Subur	653
Street	21287
Street	497122
Easem	21528
Easem	0
Block	141
Buildi	0
Inform	190
<b>Total</b>	<b>1207924</b>

**File Download**

**Do you want to open or save this file?**

 Name: Summary\_of\_All\_Cadastral\_Objects.xls  
 Type: Microsoft Excel Worksheet, 4.60KB  
 From: oss\_mapguide2

 While files from the Internet can be useful, some files can potentially ham your computer. If you do not trust the source, do not open or save this file. [What's the risk?](#)

- Basic Module
- ewer Modu
- Reports
- Vater Module
- ansen Module
- Edit Module
- adlining Module
- ervisor Module

# Summary of All Cadastral Objects

8-AUG-2008

Object Type	Total Objects
Townships	4851
Parcels	662046
Wards	106
Zoning Polygons	0
Density Polygons	
Land Use Polygons	0
Suburbs	653
Street Text	21287
Street Addresses	497122
Easement Lines	21528
Easement Polygons	0
Block Boundaries	141
Buildings	0
Informal Settlements	190
Total in Cadastral	1207924



- Layers
- ERROR\_L
  - JW
  - TOPOGR
  - WATER
  - MISCELL
  - ROADS A
  - SEWER
  - NSD
  - CADASTR

Parcels grouped by Legal/Work Status - Windows Internet Explorer

## Parcels grouped by Legal/Work Status

**Legal Status:**

- ALL
- Archived
- History (7)
- Marked for Deletion by JW-not displayed
- Proclaimed(6)**
- Proposed (3)
- Registered (1)
- SG Approved(2)

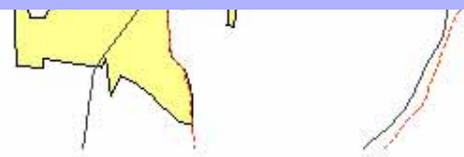
**Work Status:**

- ALL
- Current
- Multiple (PRCL KEY,LSTATUS)**
- New from CoJ
- Oracle Geometry error (e.g. Dup Point)
- Query - Check Integrity to Current

**Select fields to display:**

- Total Parcels
- Total Area

- Basic Module
- Sewer Module
- Water Module
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- Edit Module
- Redlining Module
- Supervisor Module





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  - CATHODIC PROTECTI
  - STORMWATER

Show Info - Windows Internet Explorer

### Parcels Feb08(VW\_PARCEL)

Item	Value
CG X:	-108974.9055558870
CG Y:	-2906133.65606266
JW Comments:	{G=G}{UPD}
JW Area:	261.353668212891
GID:	23119581
CoJ Status:	Registered (R)
CoJ Parcel Type:	Erven
CoJ Legal Area:	261.35316650
JW Legal status:	R
CoJ ObjectID:	13114
JW Parcel Key:	576A901000112000000
Latest Request:	N/A
CoJ SG ID:	T0IQ0576901000011200000000
CoJ Stand Text:	1120
JW Stats Area Code:	576A
Town Code:	576A901
Type Code:	1
JW Work Status:	Q

Close Window

- Basic Module
- Show Information
- Water Module
- Hansen Module
- Edit Module
- Redlining Module
- Supervisor Module

X: -108833.576087, Y: -2906053.178443 (Meter)

1 feature selected

1: 2000.00

58.72 x 55.68 (mi)

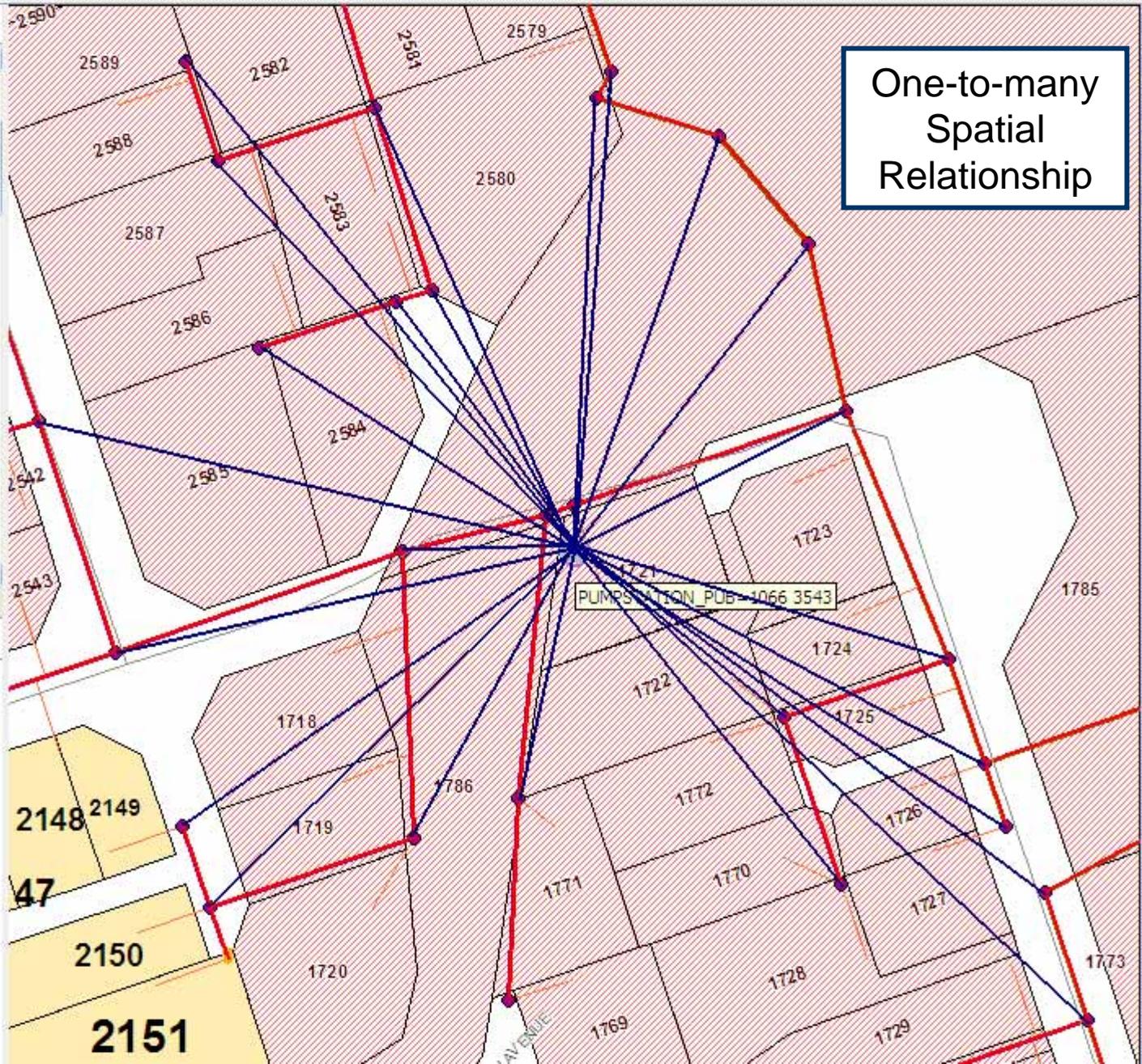
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Layers

- All Gravity Pipes in REC
- Pump Station
- Sewer Catchments
- Notes
- Dimension Notes
- Nodes



One-to-many  
Spatial  
Relationship

- Basic Mo
- Sewer M
- Water M
- Hansen M
- Edit Mo
- Redlining M
- Supervisor





# Redlining

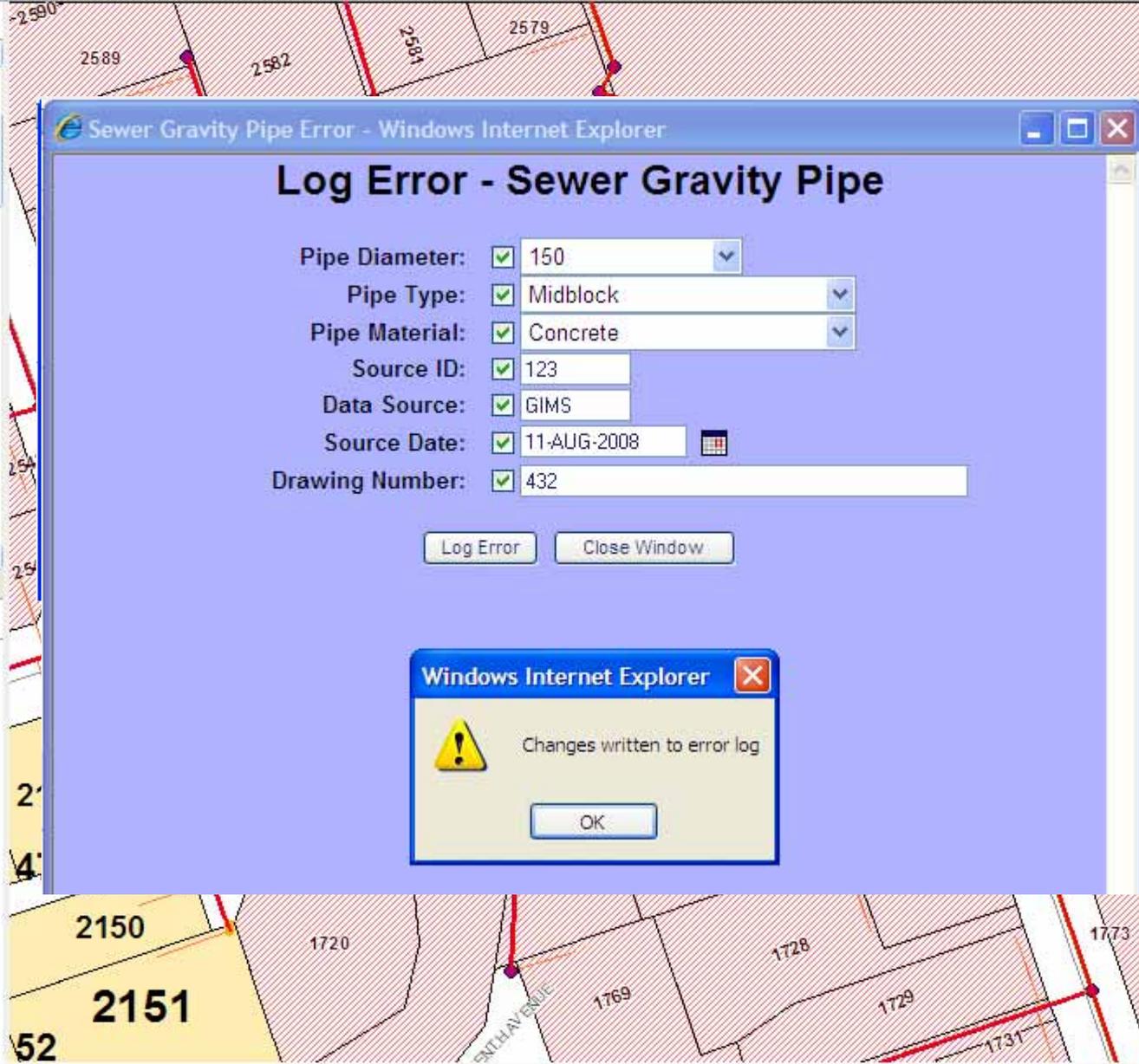
- Logging of Errors – dummy object
  - Technician in field – attends to error
  - Updates error on actual object
  - Post as final error on system
- Proposed lay-outs captured as Redlining
  - As soon as As-Built available capture actual lay-out – move from Redlining to actual
  - Assist in comparing proposed with actual





Layers

- All Gravity Pipes in REC
- Pump Station
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- Basic Module
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- Supervisor **Log Error**

### Sewer Gravity Pipe Error - Windows Internet Explorer

## Log Error - Sewer Gravity Pipe

Pipe Diameter: 150  
 Pipe Type: Midblock  
 Pipe Material: Concrete  
 Source ID: 123  
 Data Source: GIMS  
 Source Date: 11-AUG-2008  
 Drawing Number: 432

Windows Internet Explorer

Changes written to error log



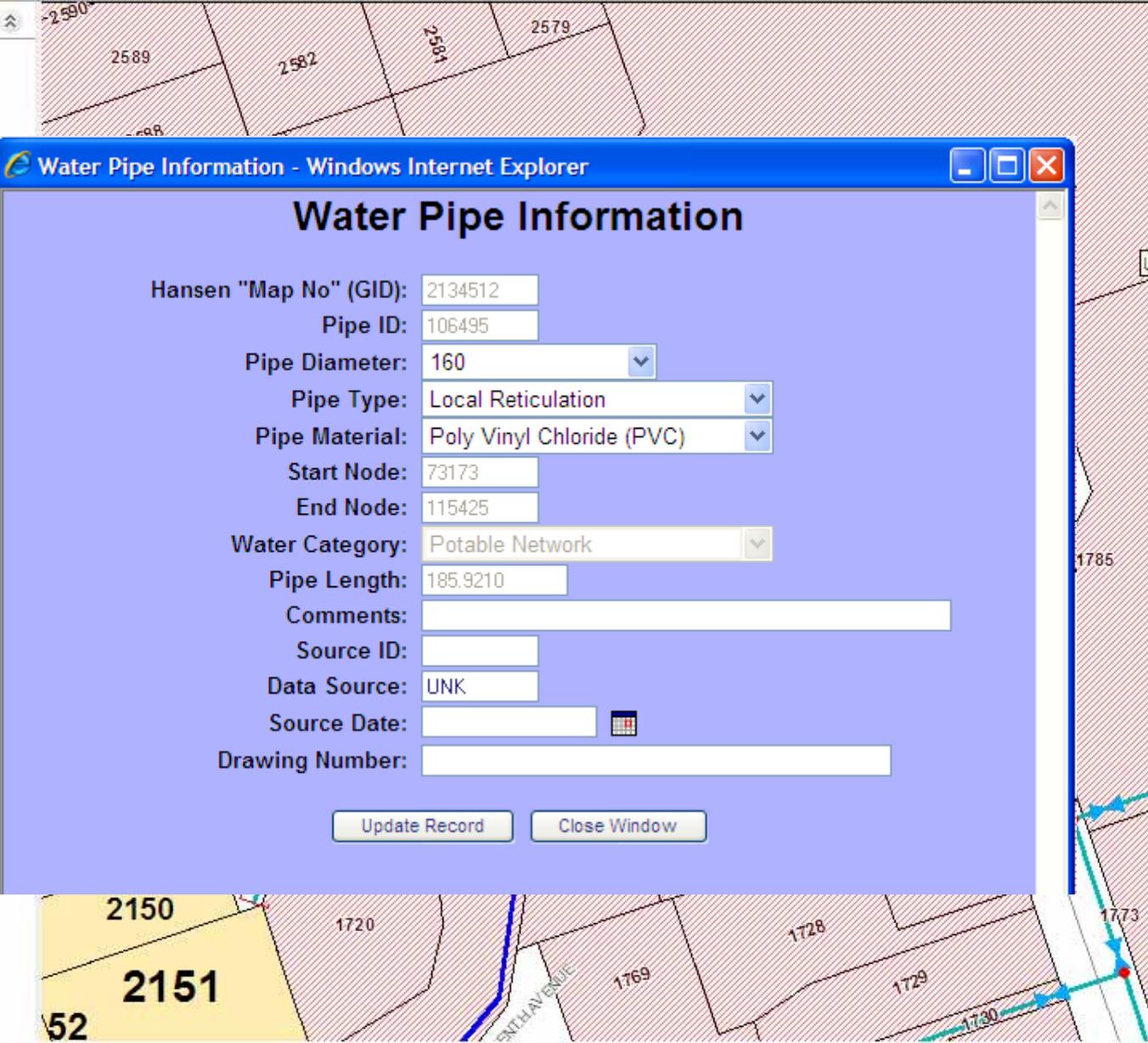
# Update Attributes Data

- Attribute data updated via Mapguide
  - Can update in-house – Intranet
  - Can update external service providers – Internet
- Posted to intermediate table in database
- Supervisor can Quality Assure
- Post to actual table in database as final
- Optimized quality assured





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- Basic Module
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- Edit Module
- Update Water Information
- Supervisor Module

### Water Pipe Information

Hansen "Map No" (GID):

Pipe ID:

Pipe Diameter:

Pipe Type:

Pipe Material:

Start Node:

End Node:

Water Category:

Pipe Length:

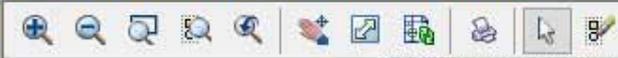
Comments:

Source ID:

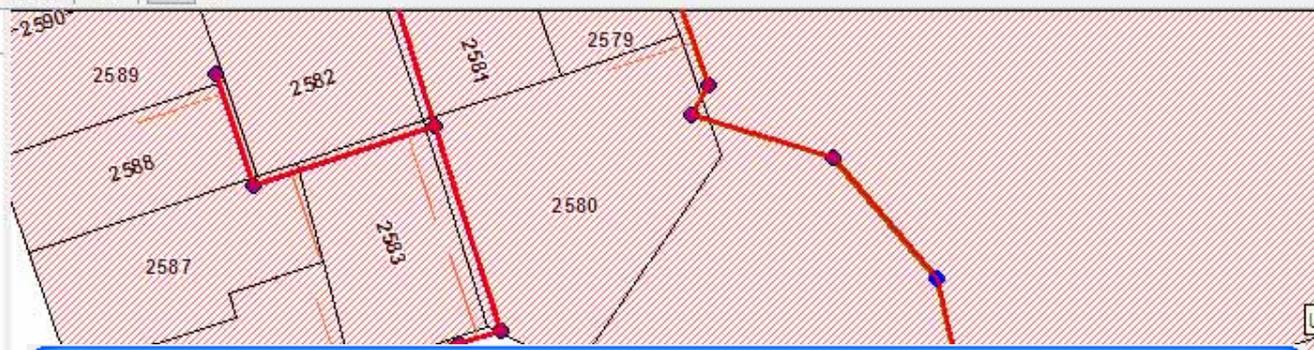
Data Source:

Source Date:

Drawing Number:



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Sewer Node Information - Windows Internet Explorer

## Sewer Node Information

Hansen "Map No" (NODE\_REF):

Node ID:

Node Type:

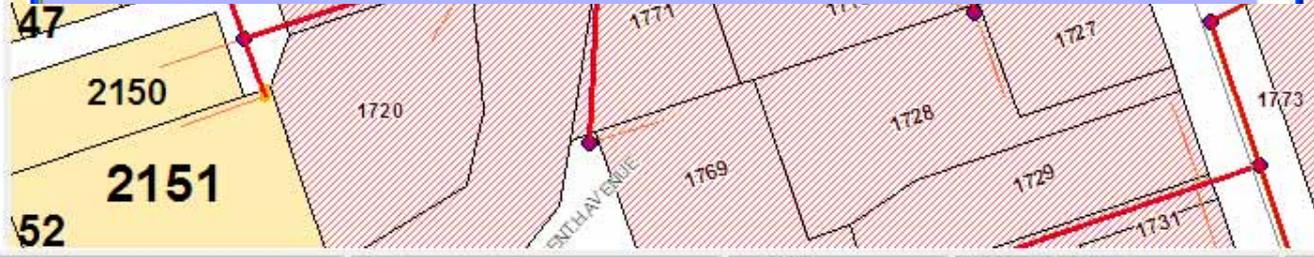
Node Depth:

Node Ground Level:

Comments:

Data Source:

Drawing Number:



X: -89343.965363, Y: -2888600.626070 (Meter)

1 feature selected

1: 800.00

58.72 x 55.68 (mi)

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# Security Module

- Accessible by Database Administrator – in-house
- Allocate roles to users
  - Username and Password
  - Governs access to functions, levels of applications and data
- Can update and delete users
  - When deleted – flagged as deleted
  - User cannot access system
  - Can draw information on specific user - reports





# Johannesburg Water GIS



- Modules
- User Groups
- Users
- Reports
- Return to GIS

## Edit Module Information

**General Information**

**Module Name:**\*  **Owner:**\*

\* indicates a required field

**Applications**

Application Name	Procedure Name	Image Name
Show Information	ShowInfo('basicmodule')	Show Info.bmp
Search	Search('basicmodule')	btn_search.gif

**Reports**

Report Name	File Name
Summary of All Cadastral Objects	cadastralobjectsselect.aspx
Parcels grouped by Legal/Work Status	parcelstatusselect.aspx
UNICITY Parcel Numbers	parcelnumbersreport.aspx

**Layers**

No Layers Defined

[Back to List](#)



# Johannesburg Water GIS



- Modules
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\* indicates a required field

- Users
- Logan Munsamy
  - 1918
  - 7081
  - ADRIAN WYNNE
  - AJ Nguse
  - ANDRIES NDLOVU
  - ANDRIES STRAUSS
  - ANTHONY HUMAN
  - ANTONIO NHLAPO

### Add New User Group

Link Module to Group - Windows Internet Explorer

**Module Information**

Select Module: \* Hansen Module

User Group Rights: \*

- Read
- Write
- Delete

\* indicates a required field

Update User Group Form    Close

Users Linked to Group:

**Modules**

Add New Module

Save User Group    Back to List



# Johannesburg Water GIS



- Modules
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## Edit User Information

**General Information**

**Full Name:**\* Administrator  
**User Name:**\* ADMIN  
**User Group:**\* User Group 1  
**Administrator:**

**SAP No:** 11111  
**Password:**\* ADMIN  
**Comments:** OSS Administrator user  
**Account Locked:**

\* indicates a required field

**Module Information**

Module Name	Read	Write	Delete
<input checked="" type="checkbox"/> Basic Module	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Sewer Module	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Water Module	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Hansen Module	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Edit Module	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Redlining Module	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Supervisor Module	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

# User Access Report

15-AUG-2008

No of Logins	Username
1	PMATHIBENG
1	EMOTSIRI
1	PRALEKGOKGO
1	ICOOOPER
1	SSHIBA
1	JBOLOGO
1	RTHOMPSON
1	RMYEZA
1	JNGWENYA
1	WJOUBERT
1	LMUGIVHISA
1	MSEBOLA
1	TCHIDI
1	AMASHALABA
1	LRAPODICE
1	ISYAPHI
1	CDIPHOLO
1	AMPHEKGOANE
1	DKROATS
1	BMATCHEKE
1	PSELEPE
1	LMTHIMKHULU
1	MVANVUUREN
1	WMASINGA
1	BKHAREJANE
2	LWOOD
2	MMARAKA
2	VMOODLEY
2	SDUBAZANE
2	UAGORS



- Modules
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# Issues

- Speed
  - Although not constant problem
  - Compared to Mapguide 6.5 – slower
  - Otherwise not really an issue
- New territory
  - Trial and error – learning curve
  - Very little to refer back to
  - Active Open Source community
    - Assist effectively if possible





# Issues (Continued)

- Installation
  - On Windows 2003 – straight forward
  - On Windows XP – more challenging
    - Possibly because of different IIS set-up





# Conclusion

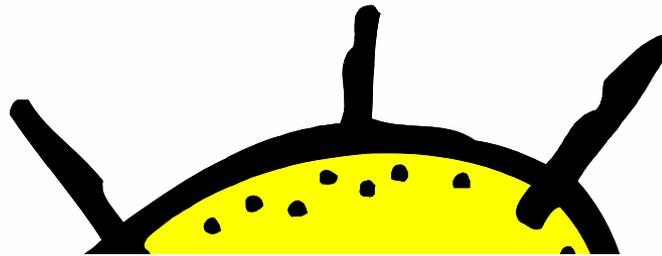
- Present Release
  - 2.0.1
  - Still very young
  - Room for improvement and maturation
  - Very excited
- Very Ambitious project in terms of Open Source, in the GIS community, but it was well worthwhile



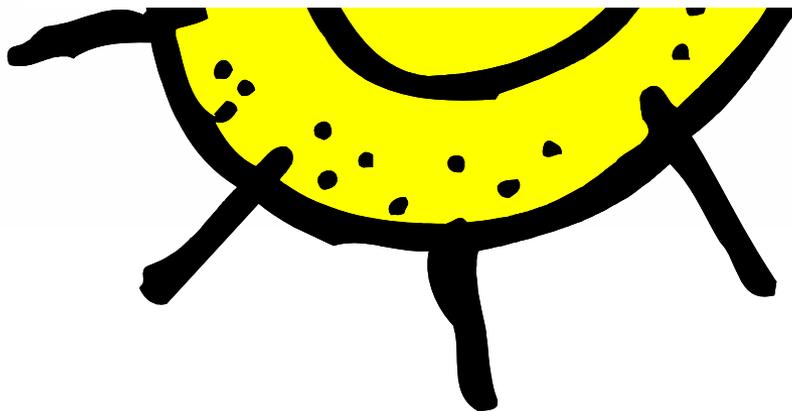


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Thank you!!





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# Questions??