

2013 Esri International User Conference

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Getting zebras, skunks, goats into an Electrical Asset Management System

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Topics Covered

- Setting the Scene
- The Great Migration
- Challenges Faced
- Plans Made

Setting the Scene



Setting the Scene

Beneficiaries



Setting the Scene

Business Drivers

- Service Delivery
- Asset Management
- Digital Service Register
- Total Cost of Ownership
- Efficient workflows

Setting the Scene

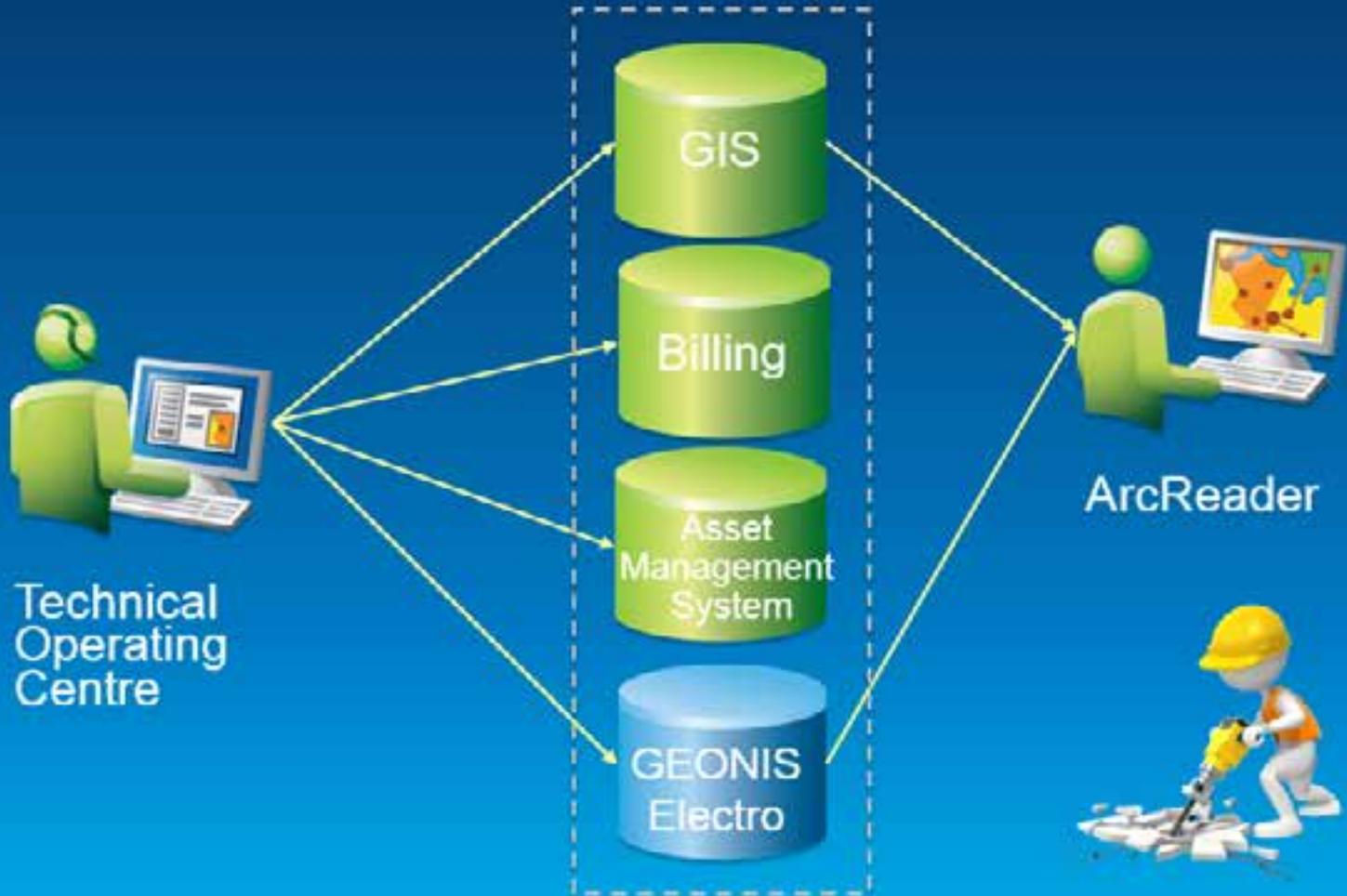
Favourable Factors

- ELA client
- >20 years of GIS
- Staff willing to learn and grow
- 300+ ArcReader users

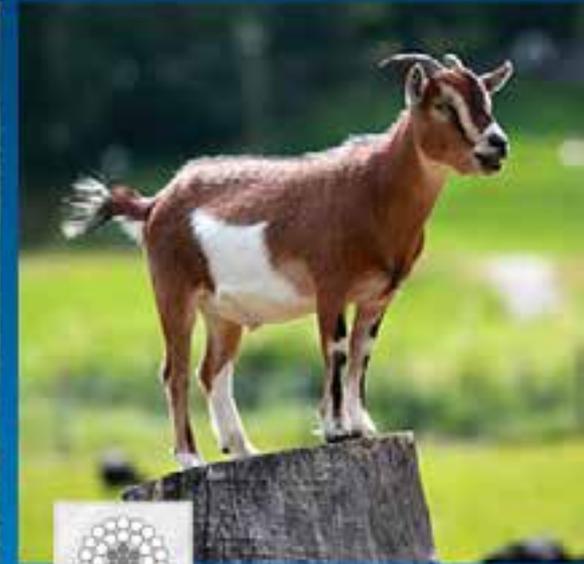


Bigger Picture

GIS enabled asset management

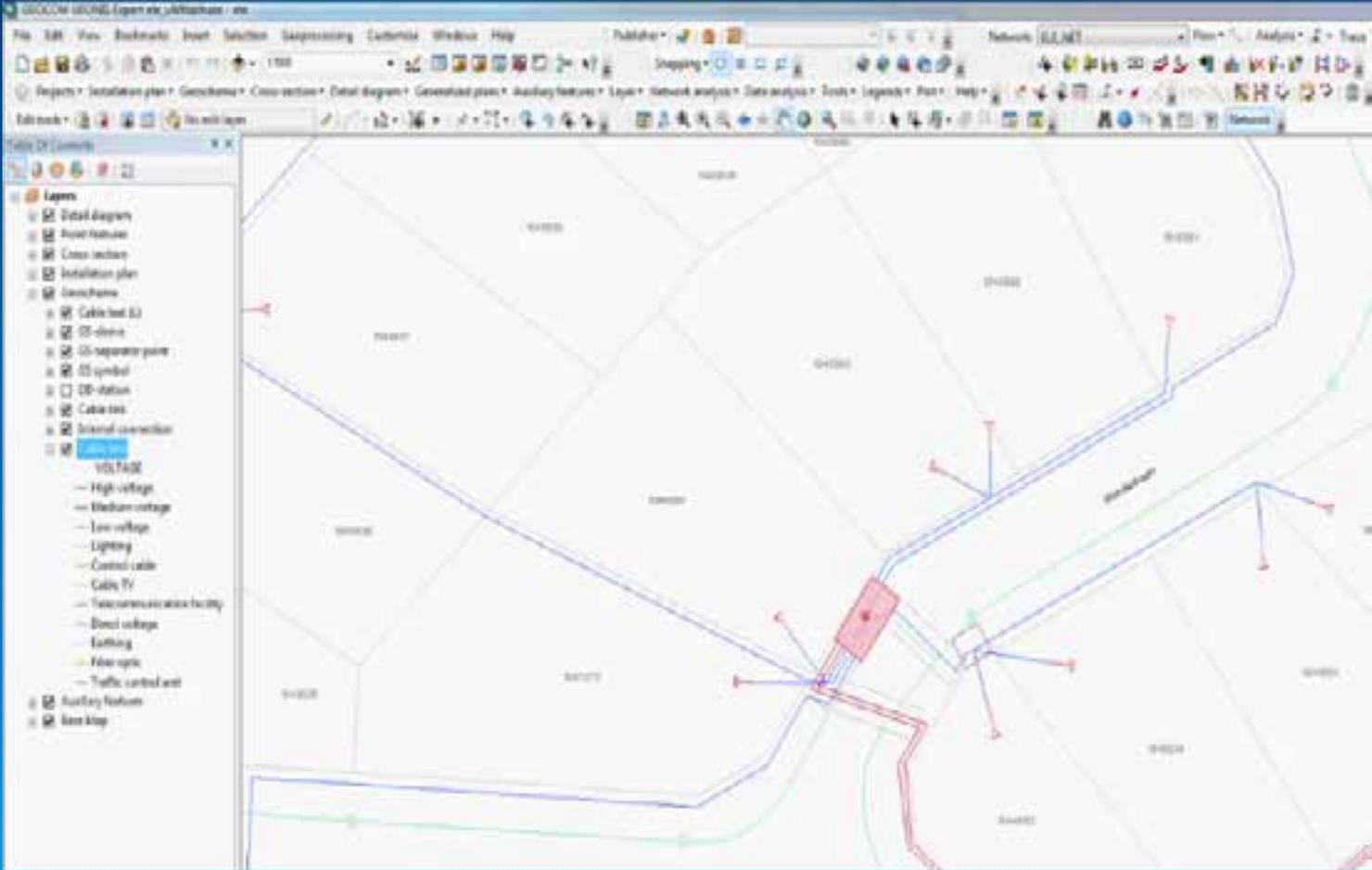


Why the Wildlife?



ACSR Code Name	Material	Stranding (Al/St)	Wire (mm)	Overall Diameter (mm)	Cable Count	Rating (A)
Skunk	Al reinforced with steel	12/7	2.59	7.77	3	240
Goat	Al reinforced with steel	30/7	3.71	11.13	3	730
Zebra	Al reinforced with steel	54/7	3.18	9.54	3	860

Searching for Zebras



Electrical Assets

- Maintenance information
 - Condition, age,
- Attach reports and photographs
- Attach as-built plans
- Accessing information quickly

Framework to gather information

Cable/Wire

OBJECTID: 82809

Name/Number:

Voltage/Class: low voltage | buried uni

Strand ID/Name:

Verify strand | Transfer strand

Data | Administrative | Maintenance | Documents | Metadata

Cross-section:

Nominal voltage: 400V

Material/Type: unknown

Length/Looping [m]: 31.09

Status: operational

Specific variables for uMhlathuze:

Unique Asset ID:

Codename/Phase:

Number of Cores:

Size:

- Unknown
- Bear
- Dim
- Fox
- Goat
- Mink
- Oak

043273

Data | Administrative | Maintenance | Documents | Metadata

Owner: municipality

Year of construction: 2011

Remark: This is free text to add a remark.

Infotext:

Data | Administrative | Maintenance | Documents | Metadata

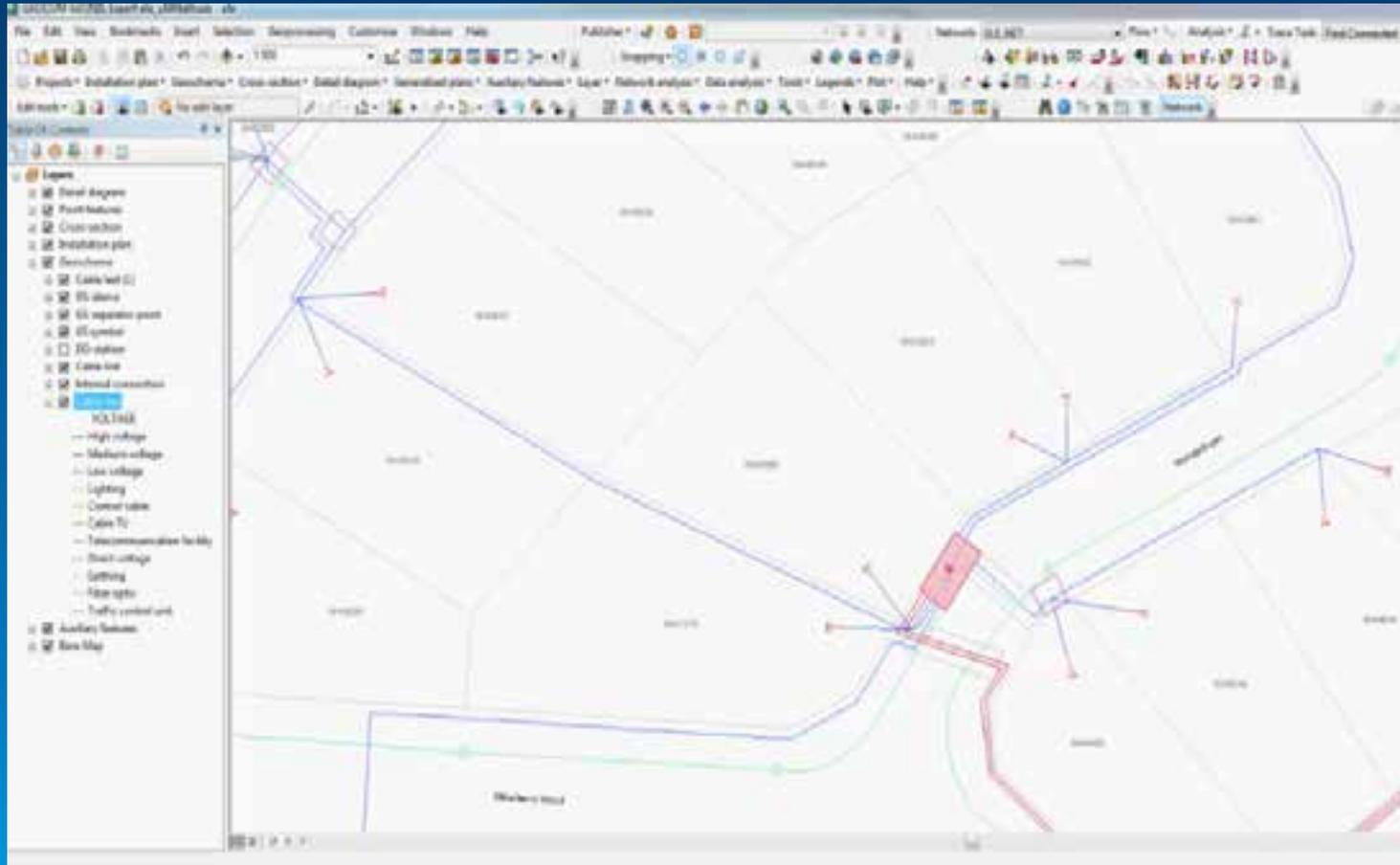
Appearance:

Maintenance:

- unknown
- very good
- good
- inadequate
- bad
- very bad

Date:

Assets with Attributes



Challenges

- AllyCAD
 - Services register
 - Consultants for the city use CAD
 - Limited attributes, dirty data, no feature connectivity
- Limited advanced GIS users
 - Introducing an advanced GIS electrical solution
- GEONIS Electro
 - Software configuration
 - Data!
 - Connecting cables to station point
- Limited time and budget

The Great Migration



Geoprocessing models

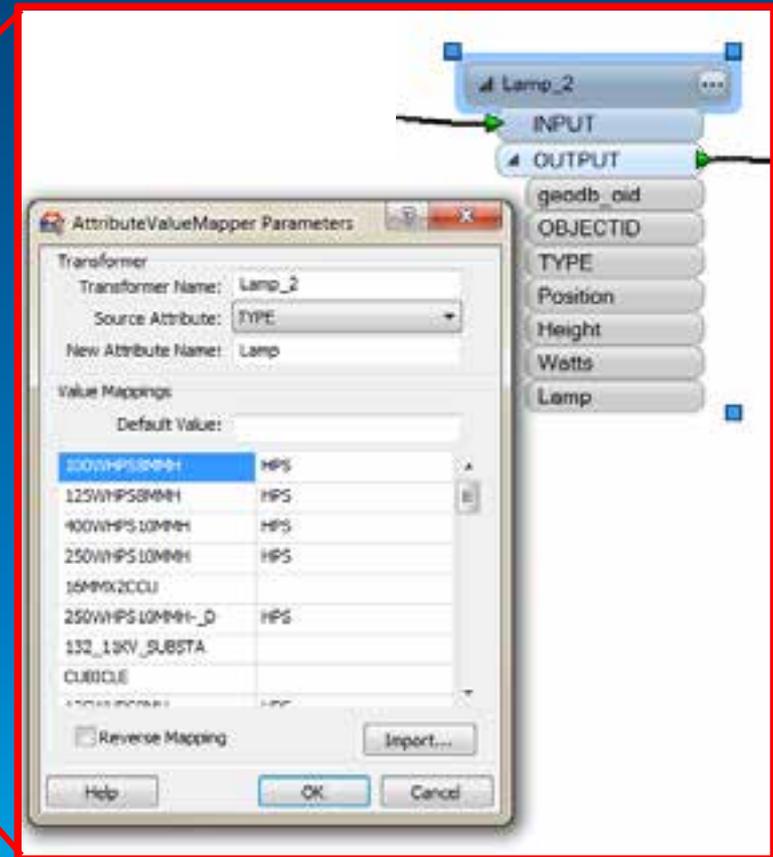
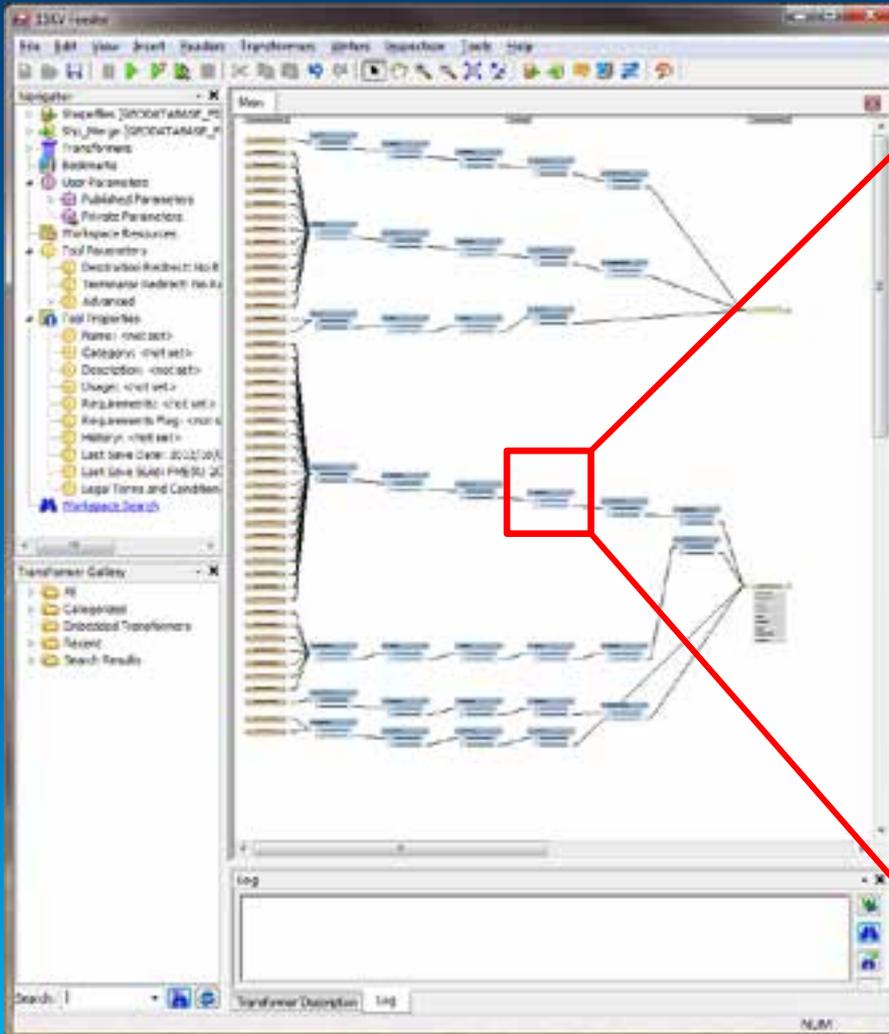
- Cable material, classification ...
- Streetlight data
- House connections

Additional Attribute pickup

ETL data migration

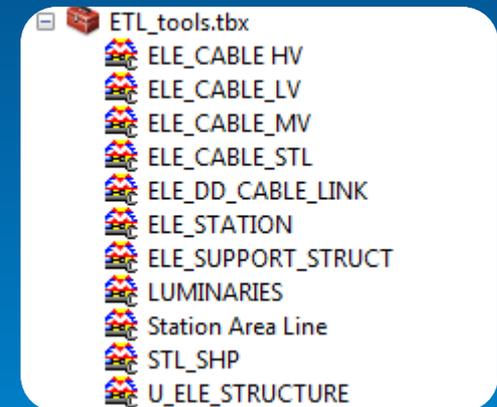
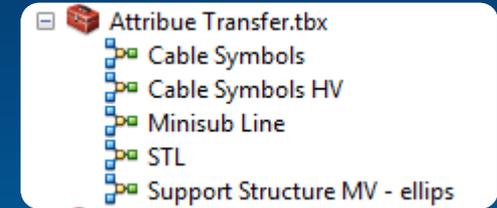
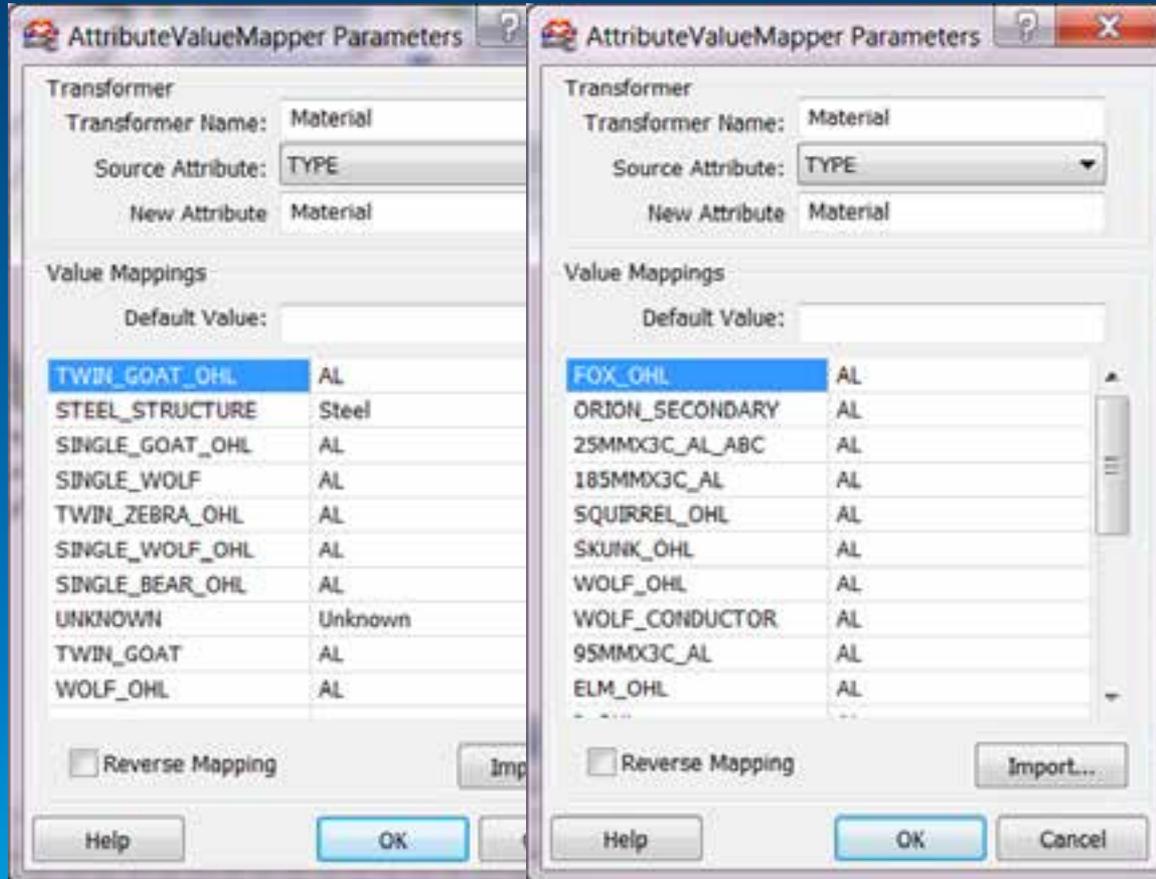
The Great Migration

ETL tools – from source to destination



The Great Migration

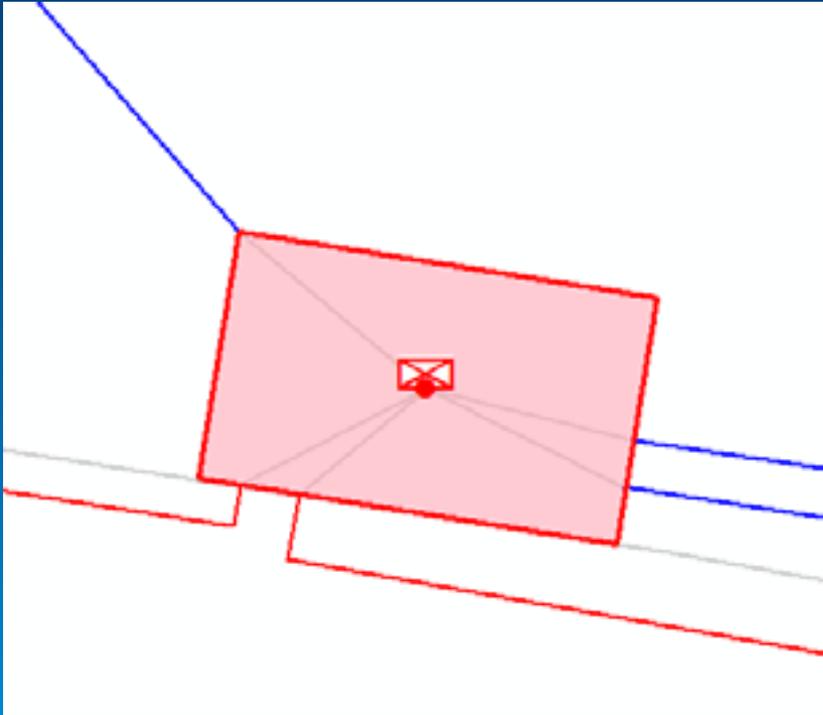
Attributes cleaning



Plans Made

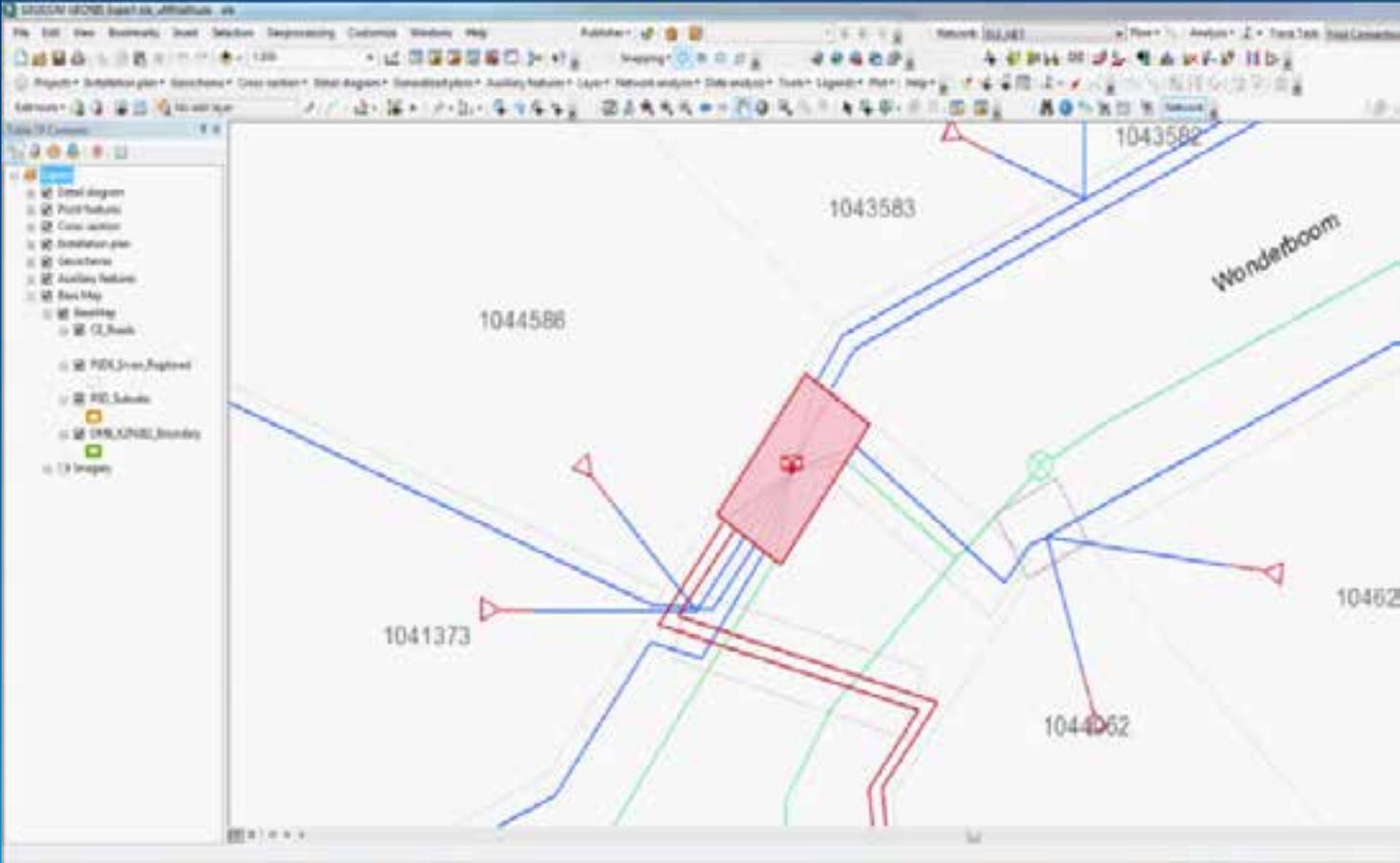
- Electrical GIS Solution
 - Automated house connections -> mail merge letters
 - AI cable code classifications (lengths, etc...)
 - Configurations in XML scripts
 - Spider diagram tools – connect lines to station points
- Training material created and delivered
- Support
- Enterprise-wide use of electrical GIS

Connecting to Substations



ET Spider Tool –
batch create connection lines
between more than a 1000
mini-substations and
surrounding electrical cables
and lines

Communicating with Clients



Benefits

- Information rich electrical GIS
- Quicker to update as-built plans in GIS
- Integrate with other GIS data sources
- Improved service delivery
- Improved asset maintenance

The Road Ahead

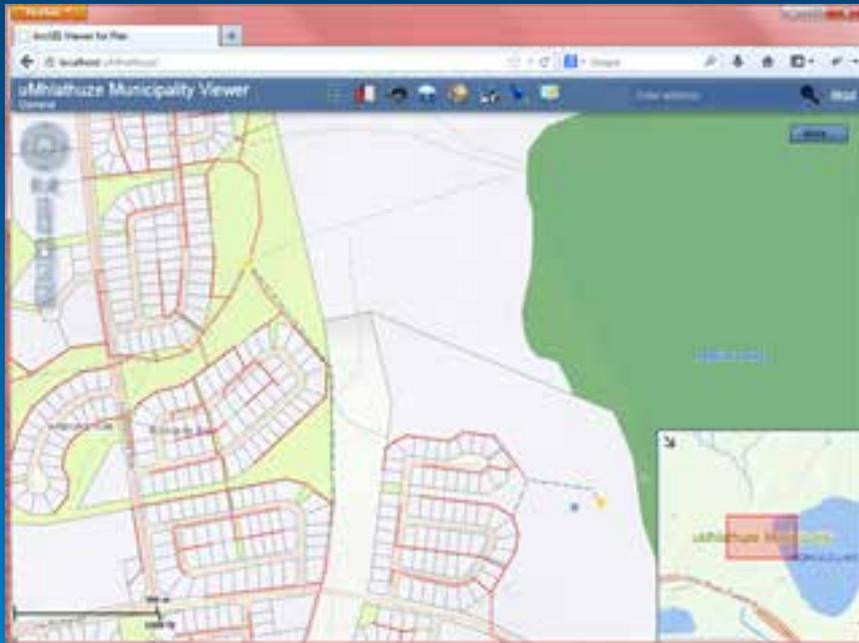
for electricity



- Internal world schematic
- Assets inside the substation
- Functional location to Asset Management System

The Road Ahead

City of uMhlatuze



- Flex viewer

- Mobile solution

The Road Ahead

Leveraging on developments

