

Water Network Toolbox

Eine Entwicklung von
GCI – Dr. Schindler Geo Consult International



Teilweise finanziert aus Mitteln der Europäischen Union und des Freistaates Sachsen



Water Network Toolbox (WNT)

Fakten und Highlights

- Software für das Management von Wasserversorgungsnetzen
- Grundlegende Funktionen für den effektiven Betrieb der Netze
- Konzentration auf die wesentlichen Prozesse
- Schnelle, individuelle Anpassung
- Ausschließliche Nutzung von open-source Technologie

- ➔ Konkurrenzlos günstig
- ➔ Kurze Einarbeitungszeit

Eingesetzte open-source Technologie

Geografisches Informationssystem

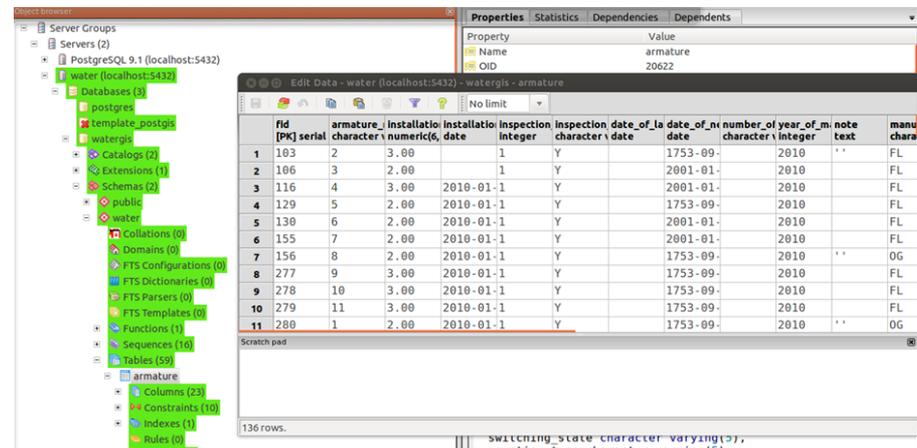
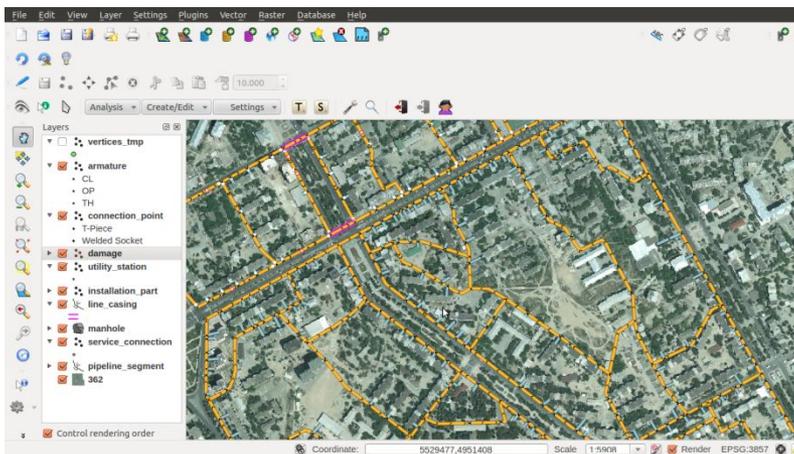
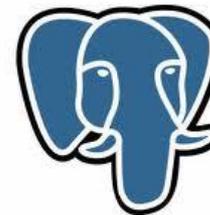
Datenbank



Quantum GIS

PostgreSQL

PostGIS

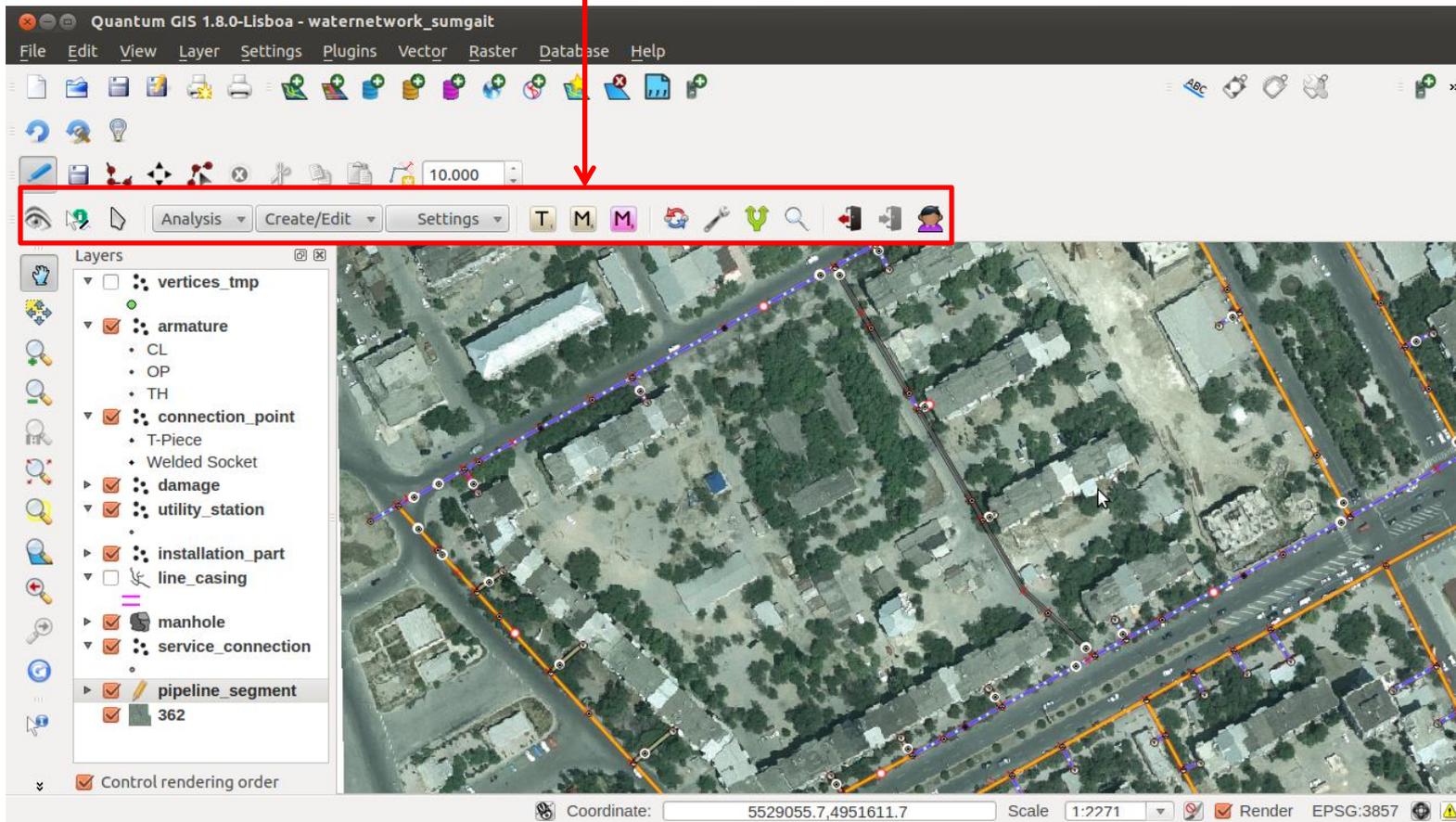




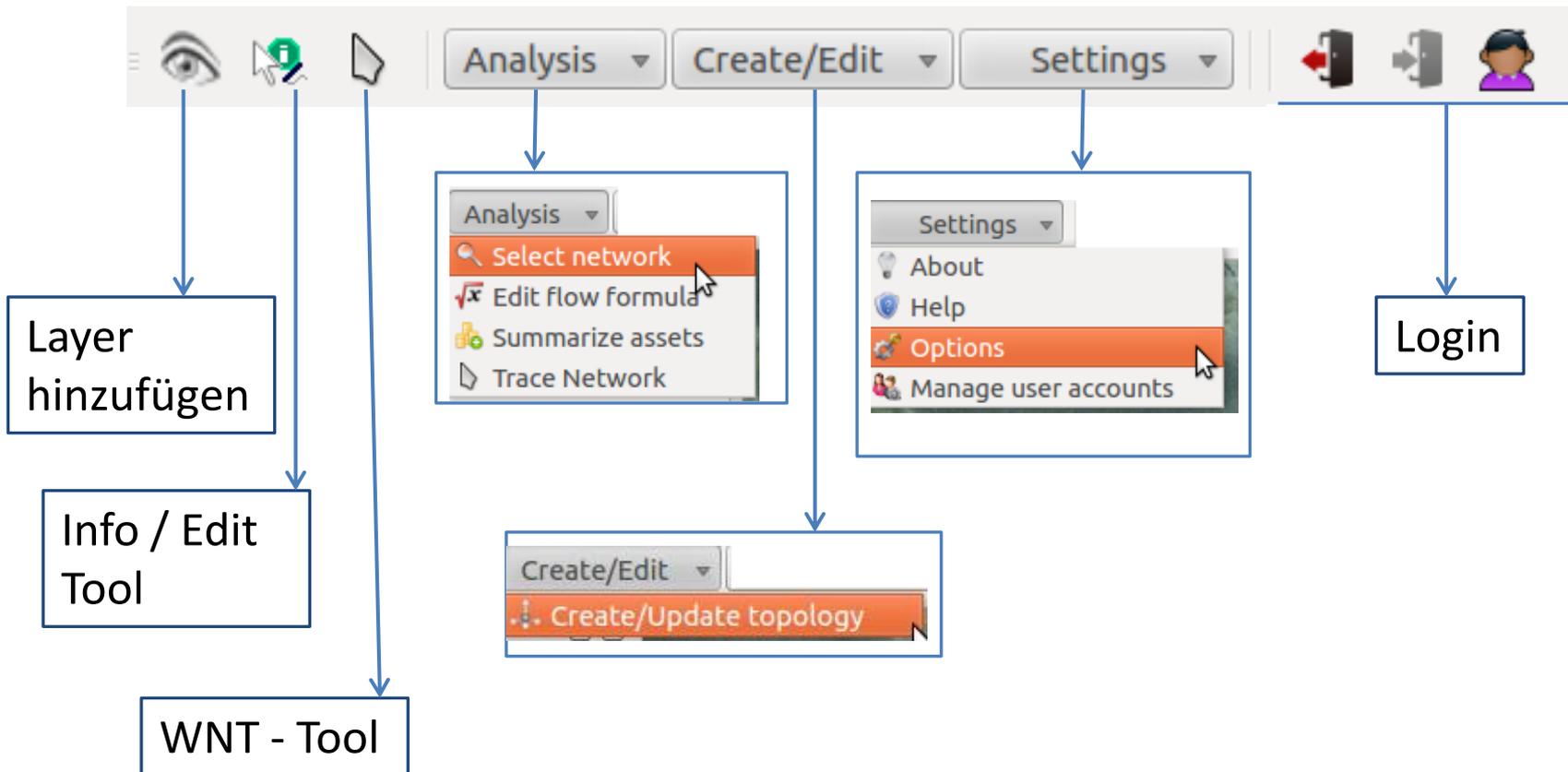
- Die WNT ist eine Erweiterung (Plugin) für Quantum GIS
- Programmiersprache: C++
- Datenbanksystem: Postgres/PostGIS
- Datenmodell basiert auf dem GAWANIS-Datenmodell des DVGW



WNT – Erweiterung für Quantum GIS



Hauptmenü





Editieren

von Geometrien und Attributen

- Rohrleitungen
- Armaturen
- Schächte
- ...

Anlegen einer Rohrleitung im Zusammenspiel mit Editier-Werkzeugen von Quantum GIS

The screenshot shows the Quantum GIS interface. A red box highlights the 'Create/Edit' toolbar. A yellow arrow points from this toolbar to a newly created pipeline object on the map, which is a red line with a green circle at its end. Another yellow arrow points from the same toolbar area to the 'Pipeline Attributes' dialog box, which is open on the right side of the screen. The dialog box contains various fields for defining the pipeline's properties, such as length, material, and installation date.

Editier-Werkzeuge

Neu angelegte Rohrleitung

Attribut-Dialog öffnet sich direkt nach dem Anlegen eines neuen Objekts

Pipeline Attributes

Segment number:	<input type="text"/>	Cath. corr. protection:	<input type="checkbox"/>
Length:	13.37	Analoge drawings:	0
Year of manufacture:	2013	Job number:	<input type="text"/>
Outside diameter:	0.00	Network:	20
Wall thickness:	0.00	Type:	Feeder: Feeder Line
Installation date:	<input type="checkbox"/> 01/01/2010	Material:	ST: Steel
Insertion (date):	<input type="checkbox"/> 01/01/2010	Corr. protect. (in):	BI: Bitumen
Inspection interval:	0 D: day(s)	Corr. protect. (out):	BI: Bitumen
Date of last inspect.:	01/01/2010	Placement type:	TR: Trench Installation
Last updated (date):	01/01/2010	Operating state:	PL: Planned
Last updated by:	<input type="text"/>	Owner:	PUC: Public Utility Coope
Refurbishment (date):	<input type="checkbox"/> 01/01/2010	Positional accuracy:	SV: Surveyed
Abandonment (date):	<input type="checkbox"/> 01/01/2010	Refurbishment type:	Type One: The first of all
Date of status change:	01/01/2010	Nominal Width:	NA: Not Available
Notes:	<input type="text"/>	Mounting type:	WE: Welded

Buttons: Cancel Save



Management

- Schadensregistrierung
- Verwaltung von Inspektionen
- Wasserzählerverwaltung
- ...

Registrierung eines Schadens

Klick mit WNT-Tool auf ein Objekt registriert einen Schaden und öffnet Eingabemaske für Attribute

The screenshot shows the WNT software interface with an aerial map background. A context menu is open over a pipeline segment, with the 'Register damage' option highlighted. The 'Damage Attributes' dialog box is displayed in the foreground, showing the following details:

- Damage id:** -2 of pipeline_segment feature no: 18733
- Geometry:** Change damage location (button)
- Number:** [Empty text field]
- Occurance date:** not set
- Registration date:** not set
- Repair date:** not set
- Type:** BR: Breakage
- Status:** finalized
- Buffer:** 0

The 'Damage Attributes' dialog box also includes a table for 'Damages of feature' and a 'Close' button.

No	Status
*	

Registrierung einer Inspektion

Klick mit WNT-Tool auf ein Objekt registriert eine Inspektion und öffnet Eingabemaske für Attribute

The screenshot shows the WNT-Tool interface with an aerial map. A context menu is open over a selected object, with 'Register/Edit inspection' highlighted. The 'Inspections' dialog box is open, displaying a table with columns 'No' and 'Date'. The dialog also contains input fields for 'Inspection number' (13), 'Inspection date' (1/4/12), 'Inspector' (Burner), and a 'Finding' text area containing 'ok'. A 'Close' button is at the bottom right of the dialog.

No	Date

Inspection number: 13
 Inspection date: 1/4/12
 Inspector: Burner
 Finding: ok

1 feature(s) selected on layer pipeline segment. Coordinate: 387027.8.4493754.5 Scale 1:519 Render EPSG:32639

Wasserzählerverwaltung

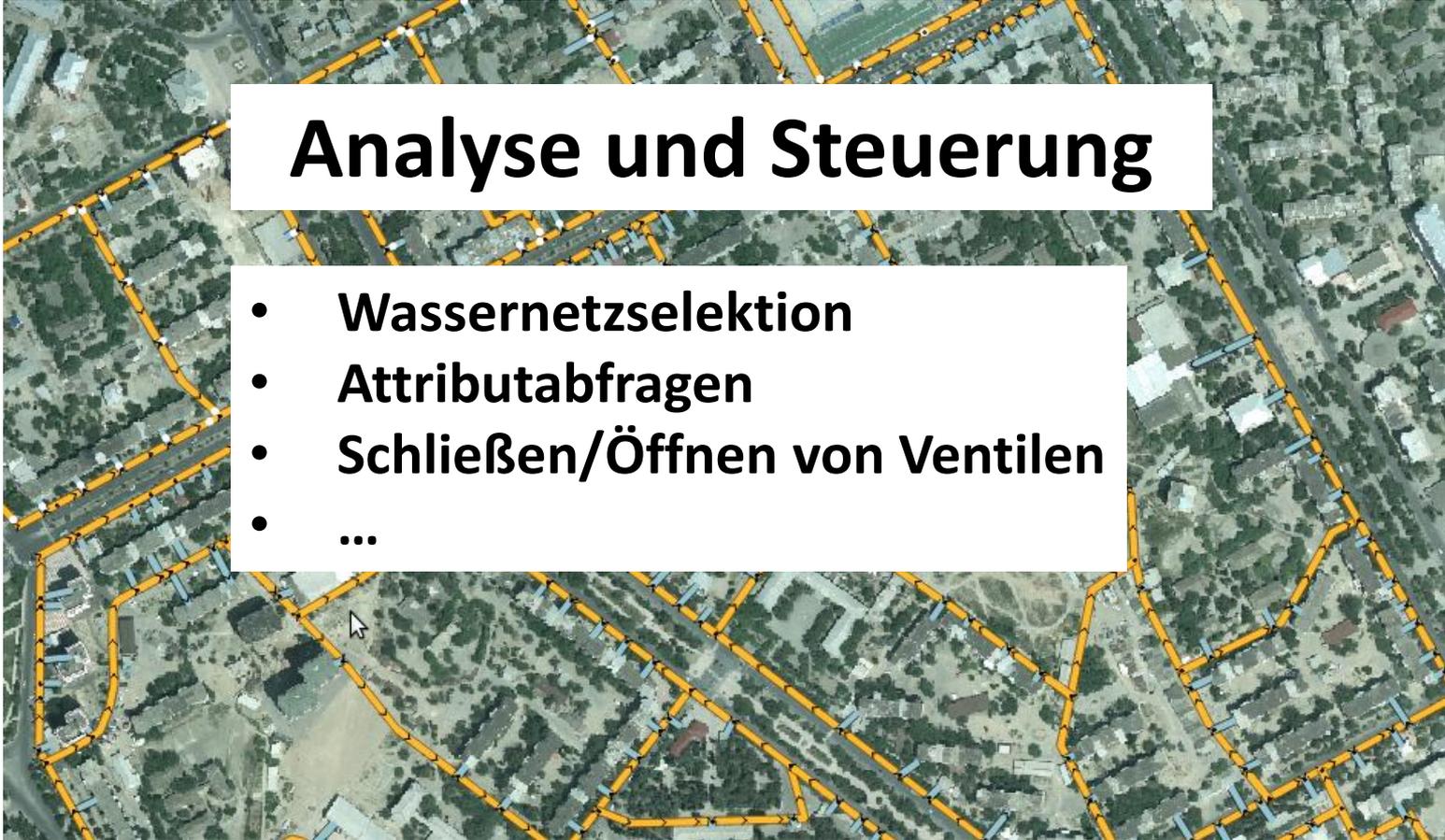
Klick mit WNT-Tool auf einen
 Hausanschluss öffnet
 Managementmaske für Wasserzähler

The screenshot shows the WNT-Tool interface. A 'Manage water meters' dialog box is open, displaying the following data:

Available Meters		Registered Readings	
No#	Installed	reading_date	reading
23434	1/12/10		

Below the tables, there are input fields for 'Meter reading:' and 'Reading date:' (25/01/2013), and 'Cancel' and 'Save' buttons. A context menu is open over a house icon on the map, with the following options:

- Manage water meters
- Register damage
- Register/Edit inspection
- Damages
- Inspections
- Documents
- View



Analyse und Steuerung

- Wassernetzselektion
- Attributabfragen
- Schließen/Öffnen von Ventilen
- ...

Auswahl des Wassernetzes

The screenshot displays the WNT software interface. On the left, a tree view titled 'WNT network objects' lists various pipeline IDs, with 'Pipeline 18727' selected. A context menu is open over the map, showing options: 'Select network', 'Edit flow formula', 'Summarize assets', and 'Trace Network'. The map shows a network of yellow and orange lines overlaid on an aerial photograph of a city street grid.

WNT network objects

- ▶ Damages (9)
- ▶ Armatures (134)
- ▼ Pipelines (192)
 - Pipeline 18727
 - Pipeline 18728
 - Pipeline 18729
 - Pipeline 18730
 - Pipeline 18731
 - Pipeline 18732
 - Pipeline 18733
 - Pipeline 18734
 - Pipeline 19115
 - Pipeline 19117
 - Pipeline 19118
 - Pipeline 19313
 - Pipeline 19314
 - Pipeline 19315
 - Pipeline 19513
 - Pipeline 19514
 - Pipeline 19515
 - Pipeline 19716
 - Pipeline 19717
 - Pipeline 19718
 - Pipeline 19922

Analysis

- Select network
- Edit flow formula
- Summarize assets
- Trace Network

Auflistung aller im ausgewählten Wassernetz installierten Objekte mit dazugehörigen Attributen

Attributabfragen

Alle Attribute der Rohrleitungen auf einen Blick

Klick mit Info-Tool auf ein Objekt
öffnet die entsprechende
Attributmaske

The screenshot shows the TerraTec software interface. On the left, a 'Layers' panel lists 'armature' (with sub-items CL, OP, TH), 'damage', 'pipeline_segment', 'line_casing', 'manhole', and '362'. The 'pipeline_segment' layer is selected. A red triangle icon (Info-Tool) is positioned over a pipeline segment on the map. A text box explains that clicking this icon opens the attribute mask. The 'Pipeline Attributes' dialog box is open, displaying the following data:

Segment number:	80	Cath. corr. protection:	<input type="checkbox"/>
Length:	38.76	Analoge drawings:	0
Year of manufacture:	2010	Job number:	33
Outside diameter:	110.00	Network:	21
Wall thickness:	5.00	Type:	Feeder: Feeder Line
Installation date:	<input checked="" type="checkbox"/> 04/01/2010	Material:	PE: PE
Insertion (date):	<input checked="" type="checkbox"/> 04/01/2010	Corr. protect. (in):	NO: None
Inspection interval:	1 Y: year(s)	Corr. protect. (out):	NO: None
Date of last inspect.:	01/01/2010	Placement type:	TR: Trench Installation
Last updated (date):	01/01/2010	Operating state:	OP: Operational
Last updated by:	Miller	Owner:	PUC: Public Utility Cooper
Refurbishment (date):	<input type="checkbox"/> not set	Positional accuracy:	SV: Surveyed
Abandonment (date):	<input type="checkbox"/> not set	Refurbishment type:	None: Not defined
Date of status change:	not set	Nominal Width:	100: NW100
Notes:		Mounting type:	FL: Flanged

Buttons for 'Cancel' and 'Save' are visible at the bottom right of the dialog box.

Steuerung von Ventilen

Layers

- armature
 - CL
 - OP
 - TH
- utility_station
- service_connection
- installation_part
- connection_point
 - T-Piece
 - Welded Socket
- damage

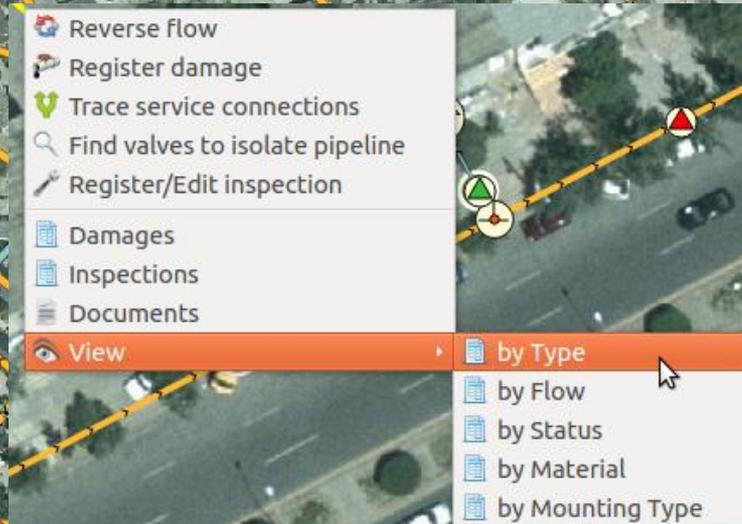
No	Pipeline	State	State	State	
1	66	2013-01-22	<input type="checkbox"/> Open	<input type="checkbox"/> Closed	<input type="checkbox"/> Throttled

Open all Close all Throttele all

Cancel OK

Klick mit Ventil-Tool auf ein Ventil
öffnet die Steuerungsmaske zum
Öffnen, Schließen oder Drosseln
des Ventils

Individuelle Kartenansichten

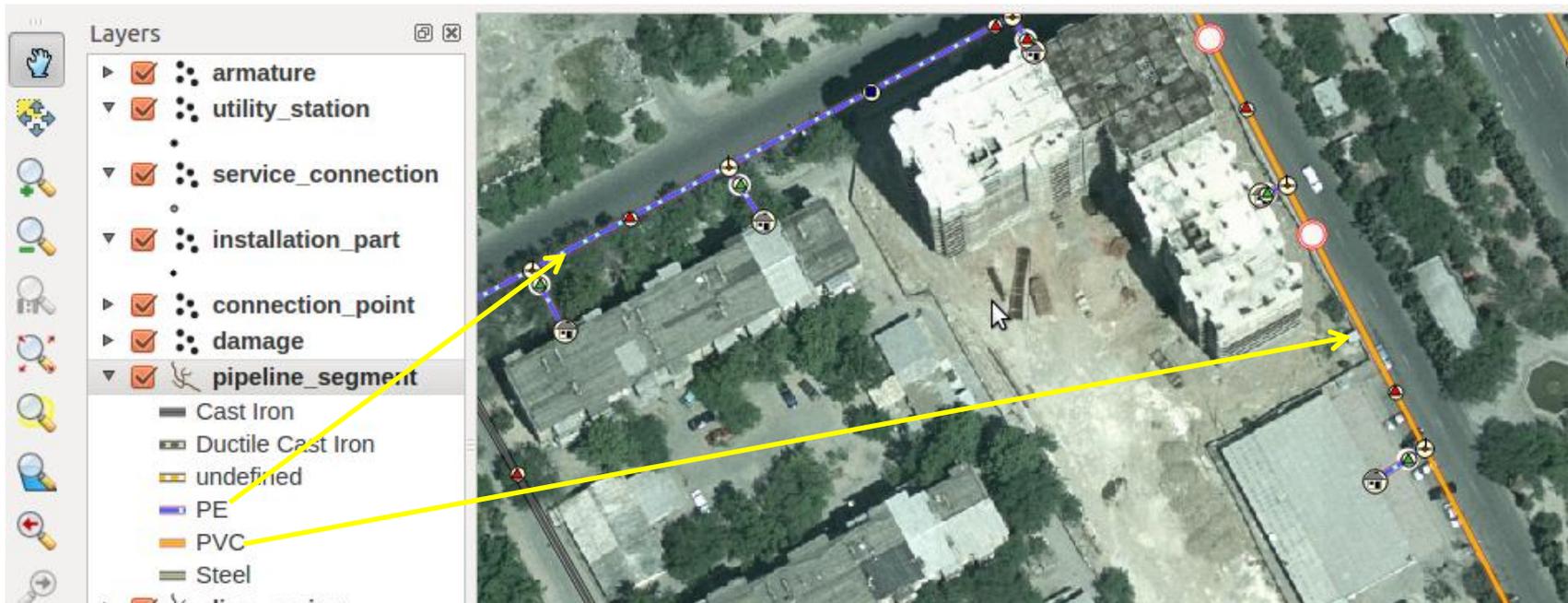


Kartenansicht nach Rohrleitungstyp

- ▶ :: armature
- ▼ :: utility_station
- ▶ :: service_connection
- ▶ :: installation_part
- ▶ :: connection_point
- ▶ :: damage
- ▼ **pipeline_segment**
 - Connection line
 - Feeder line
- ▶ :: line_casing
- ▶ :: manhole
- ▶ :: 362

Control rendering order

Kartenansicht nach Rohrmaterial





Water Network Toolbox

Die optimale Anwendung
für Ihr Wassernetz

Besuchen Sie uns an unserem Stand E20
und lernen Sie die Water Network Toolbox live kennen