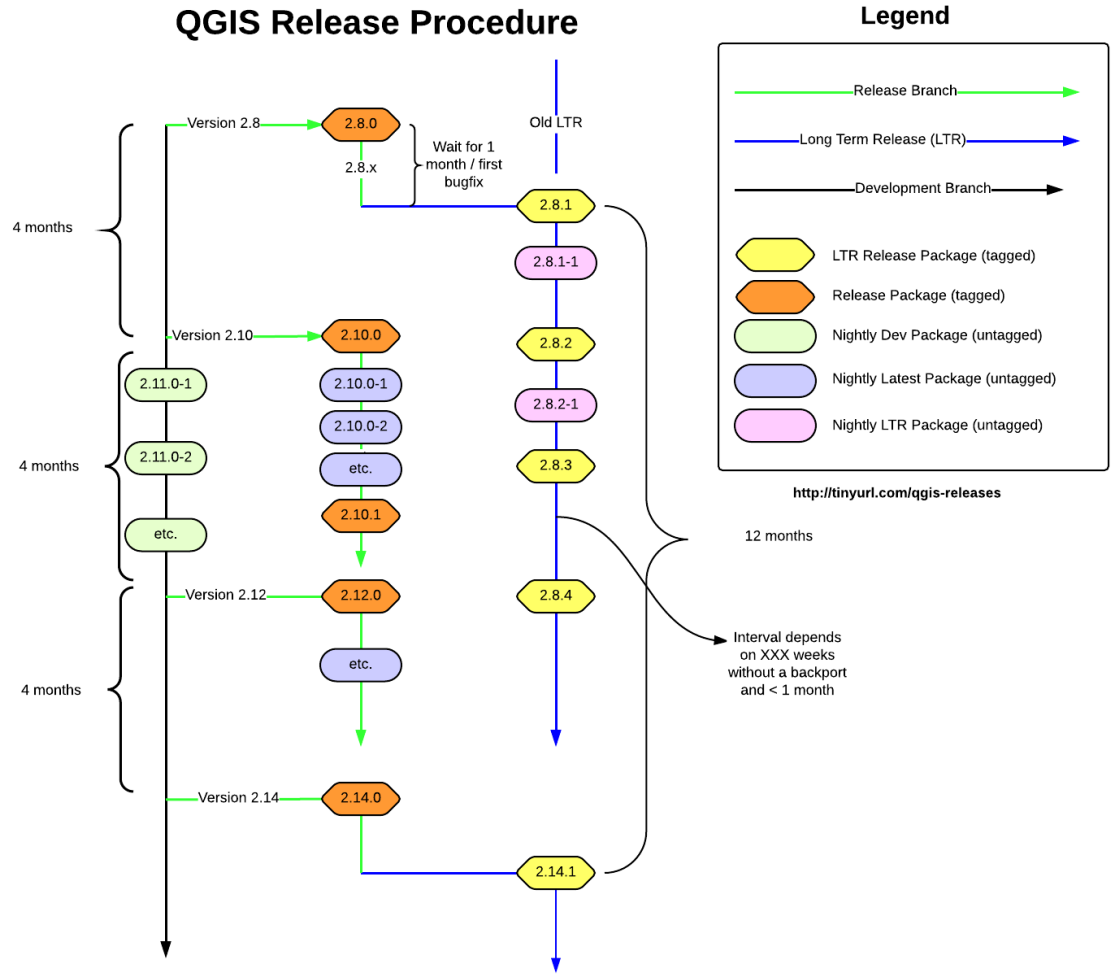

New Features in QGIS



Versions 2.6, 2.8 and 2.10



New Release Model



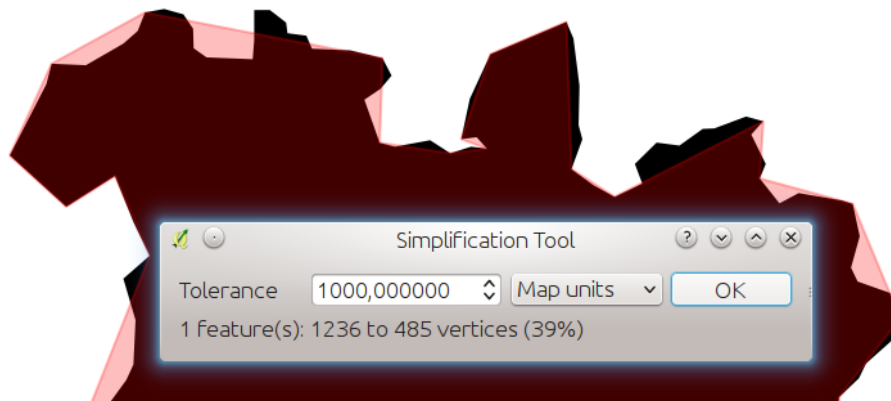
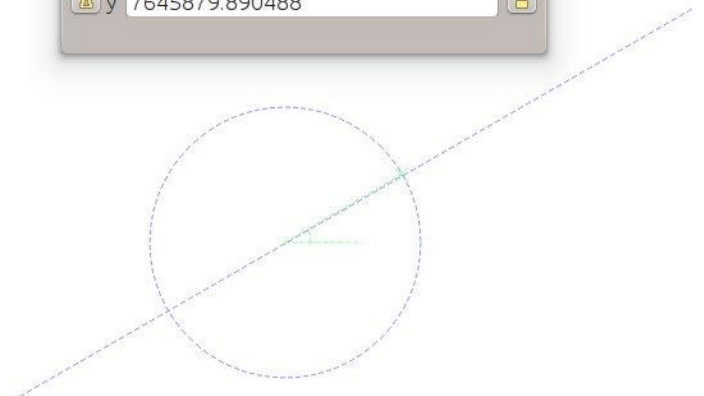
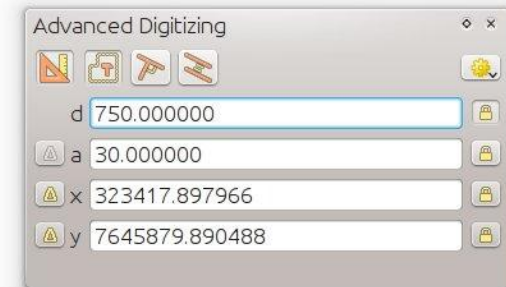
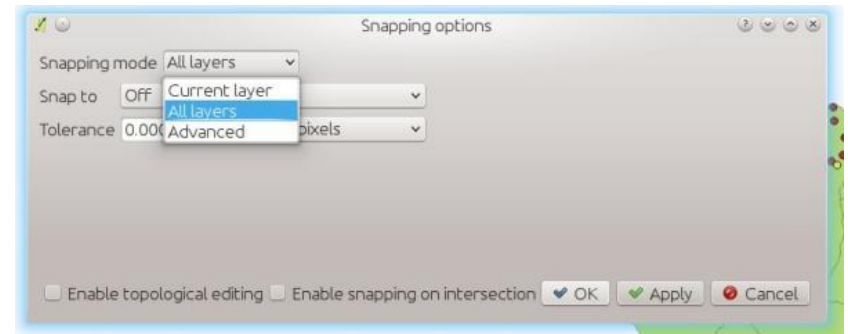
New Release Model

- Time-based regular release every 4 months
 - Odd numbers are dev releases, even numbers are regular releases
 - 3 months of development, 1 month bug fixing
 - Every 4th release is a LTS (long term support) version
 - LTS will be supported and receive bug fixes for at least one year
 - LTS versions are 2.8 and 2.14 (Feb/March 2016)
 - QGIS 2.10 (Pisa) due end of June 2015
-

Digitizing tools (2.8)

- Improved snapping
- Simplify tool with live feedback
- Advanced “CAD-like” digitizing tool

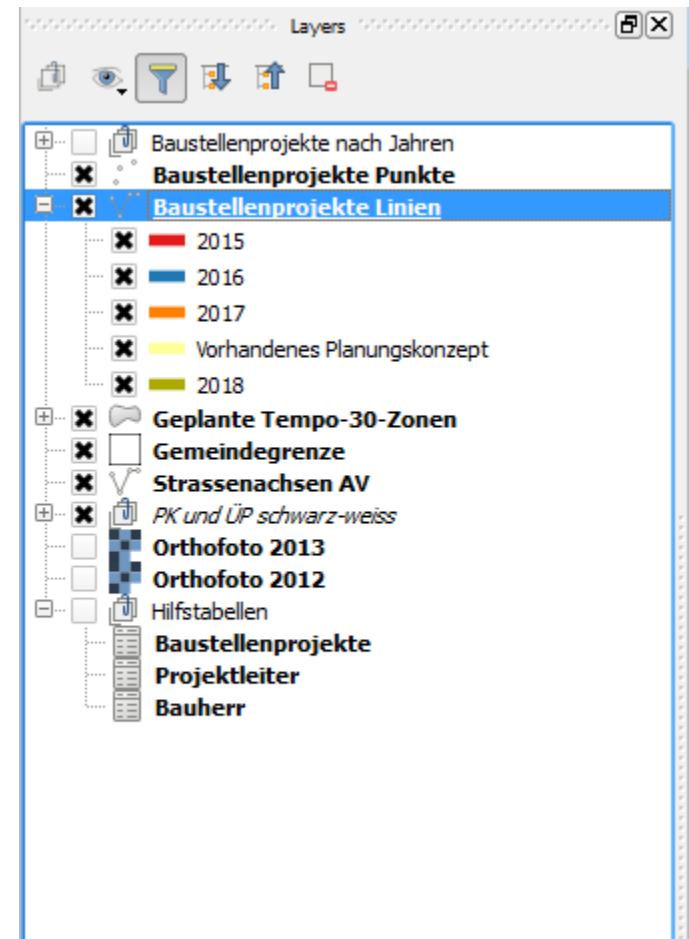
Co-Sponsored by QGIS-CH, Vevey, Nyon and Tracks for Africa



Legend tree redesign (2.6)

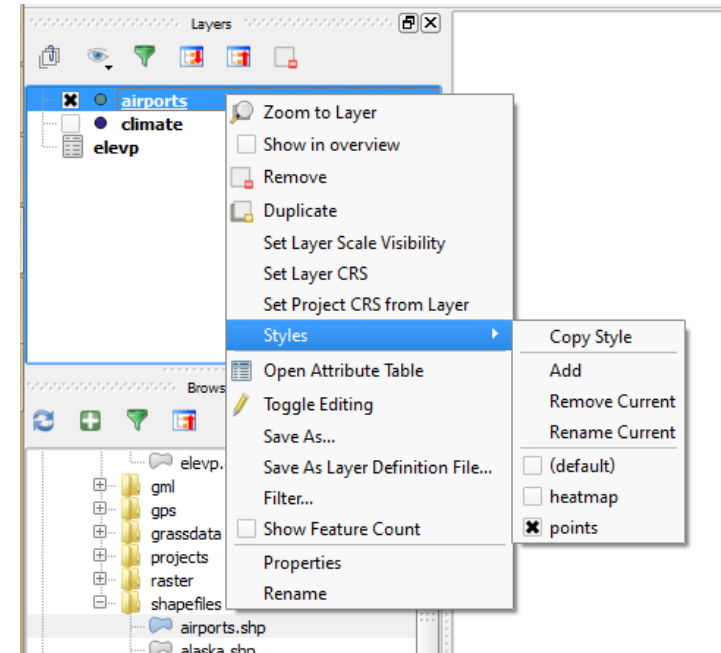
- Complete rewrite of legend tree
- “Pseudo layers” for categories rules within a layer which can be toggled
- Legend can be filtered by visible map content
- Visibility presets for combinations of layer visibility
- Better API for developers

Co-Sponsored by QGIS-CH and SIGE



Multiple Styles per Layer (2.8)

- Not necessary to load the same layer multiple times if you need different views
- Easy switch of different styles on the same layer
- Supported by print composer
- Exposed by QGIS server in WMS service
- Useful to provide black/white and color versions of symbology



Live Heatmap Renderer (2.8)

- Allows live and dynamic heatmap from point data
 - Different quality/speed settings
 - Possibility to use attributes of expressions as weights
-

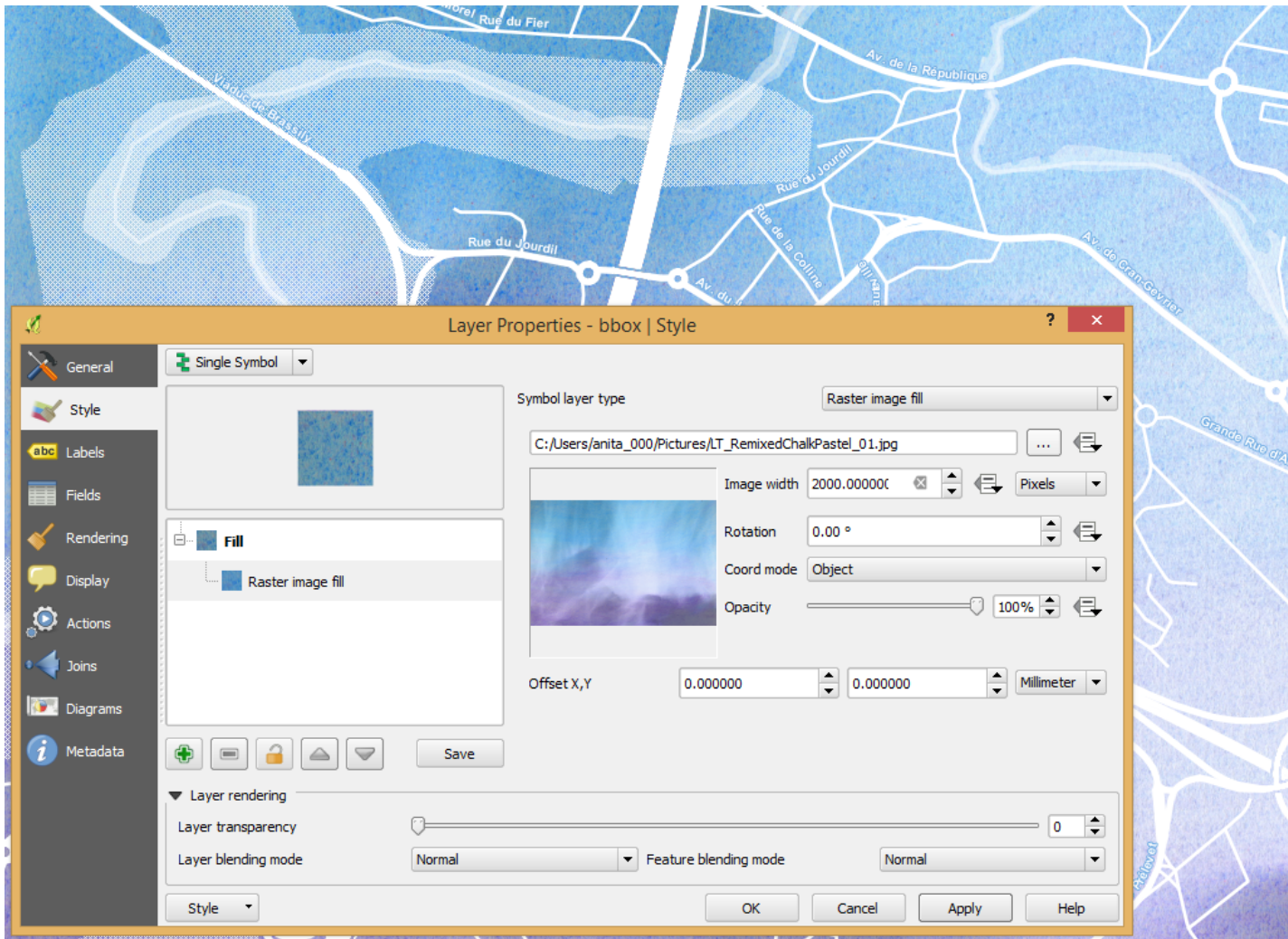
Live Heatmap Renderer (2.8)

The image shows a screenshot of the QGIS 2.8.2 interface. The main window is titled "QGIS 2.8.2-Wien - Heatmaps Bevölkerung". The "Layer Properties" dialog box for the "Adaptive heat map akt. Einwohner" layer is open, showing the following settings:

- Heatmap (selected)
- Source: [source]
- Radius: 15.000000 (Millimeter)
- Maximum value: Automatic
- Weight points by: (empty)
- Rendering quality: Best (slider)
- Layer transparency: 0 (slider)
- Layer blending mode: Multiply
- Feature blending mode: Normal

The background map shows a heatmap of population density in the Uster area, with a color scale from light yellow to dark red. The map includes labels for "Uster", "Niederuster", "Oberuster", "Kirchuster", "Nossikon", "Sulzbach", and "Maur". The status bar at the bottom indicates the coordinate is 692453,246879, the scale is 1:36'990, and the rotation is 0.0. The render mode is set to "Render" and the EPSG is 21781.

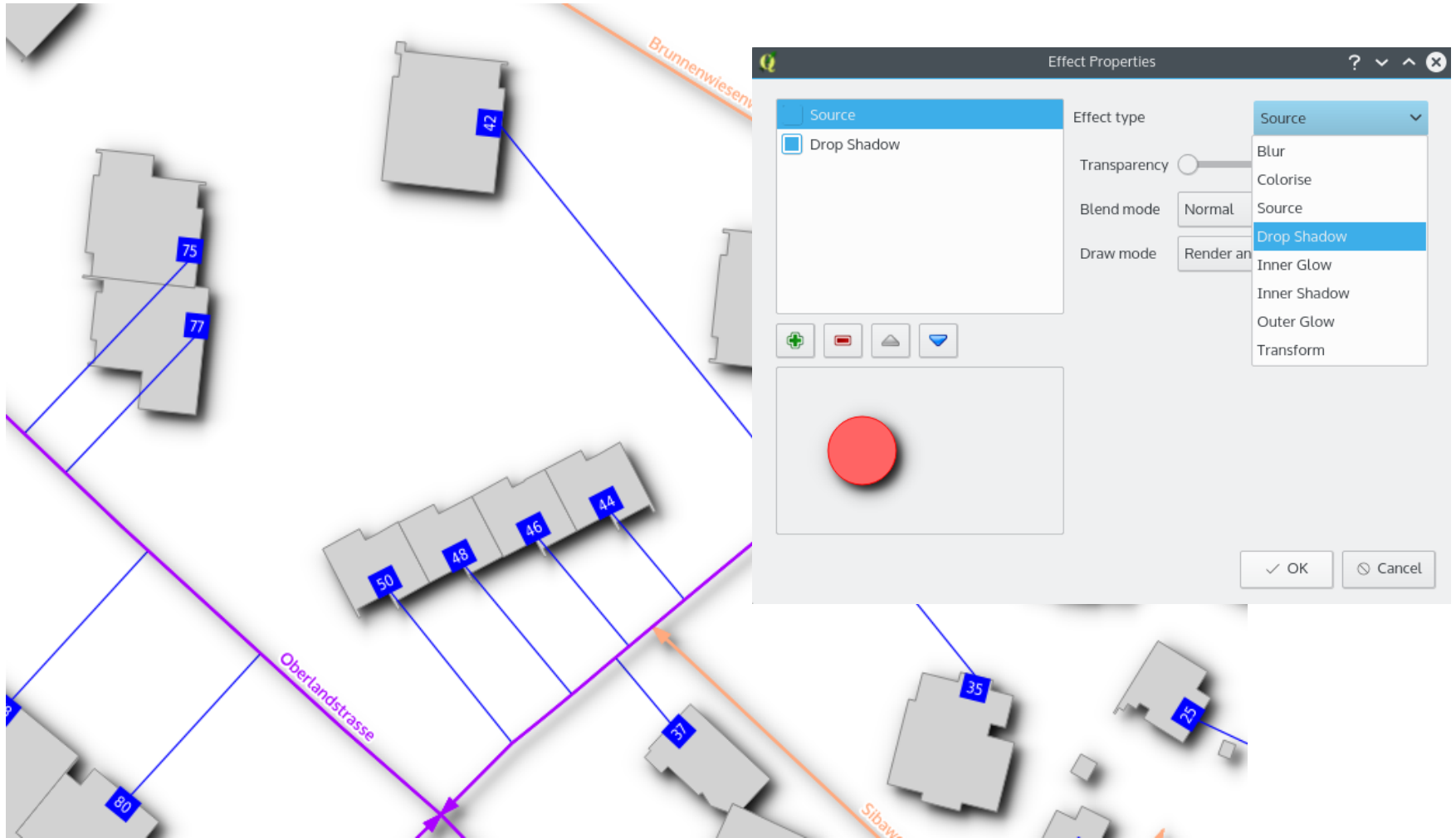
Raster Image Fill Type (2.8)



Live Layer Effects (2.10)

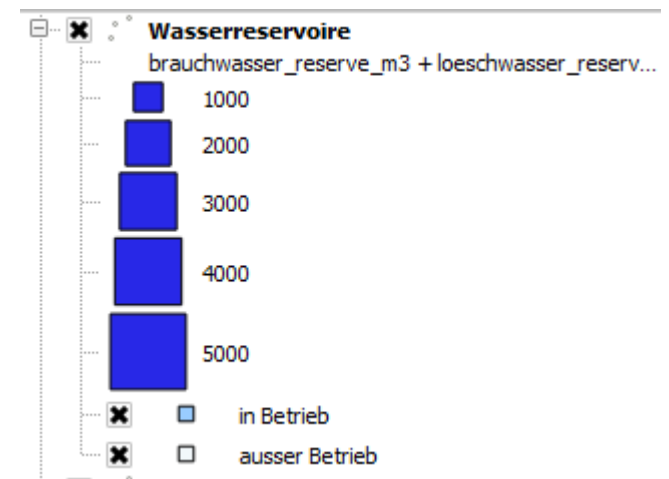
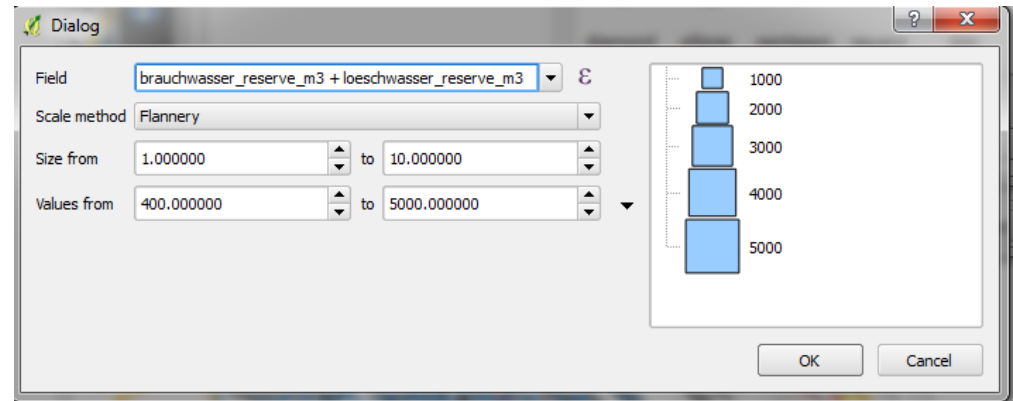
- Applies to all vector geometries of a layer
 - Chainable combination of
 - Source
 - Transform
 - Blur
 - Drop Shadow / Inner Shadow
 - Inner glow / Outer glow
 - Colorize
 - Combine with transparency and blend modes
-

Live Layer Effects (2.10)

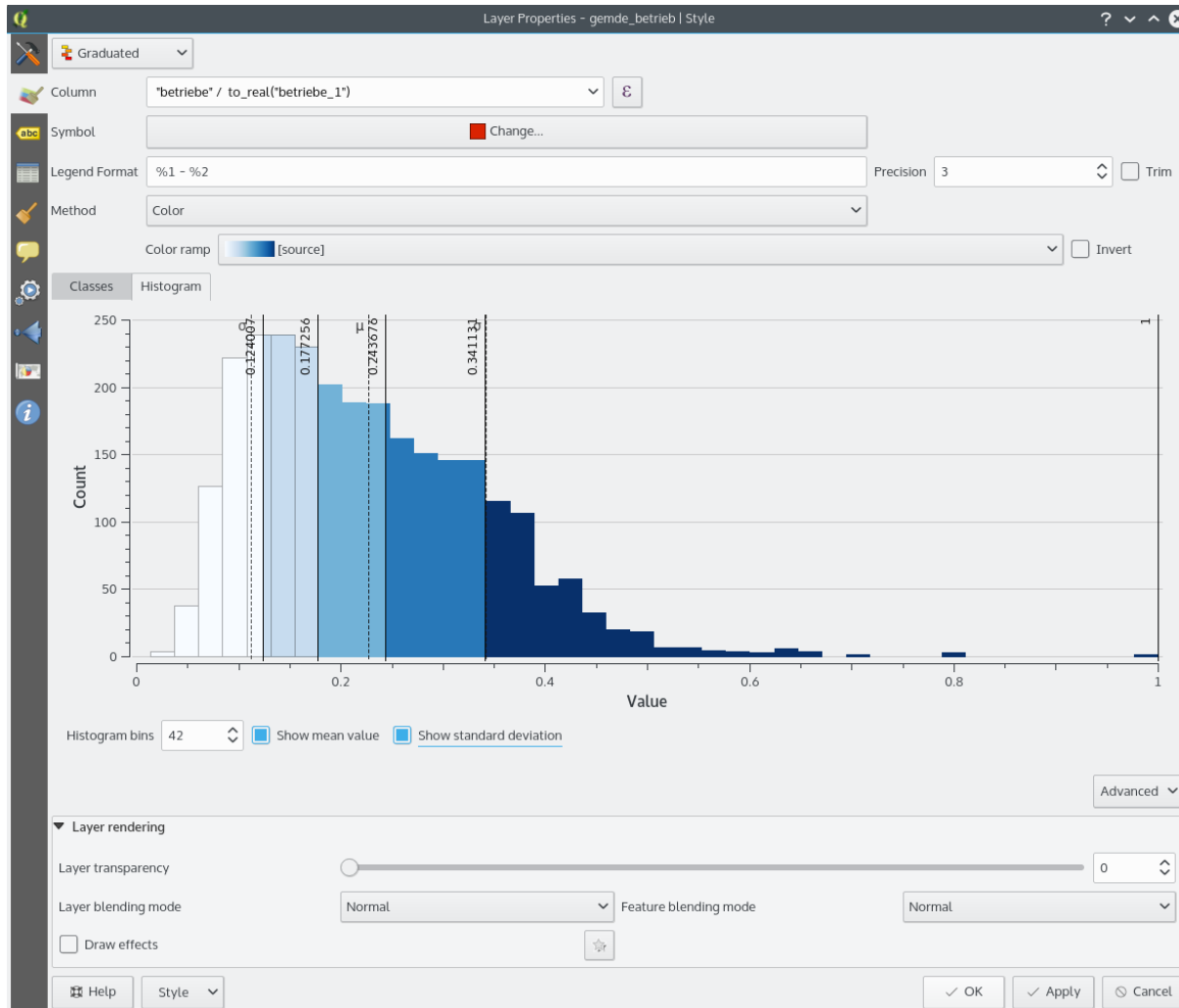


Scaled symbols improvements (2.10)

- Assistant for different scaling modes and mapping min/max to actual sizes
- Legend in legend tree and print composer
- Legend for components of diagrams (without size)

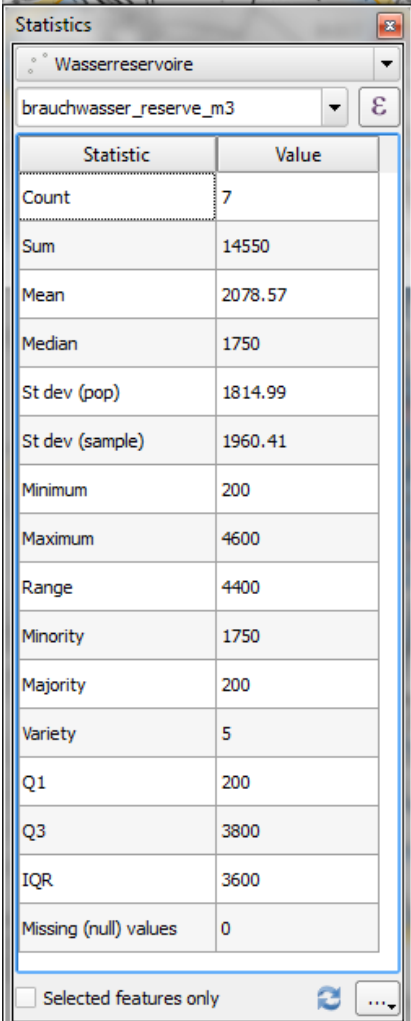


Graduated Renderer Histogram (2.10)



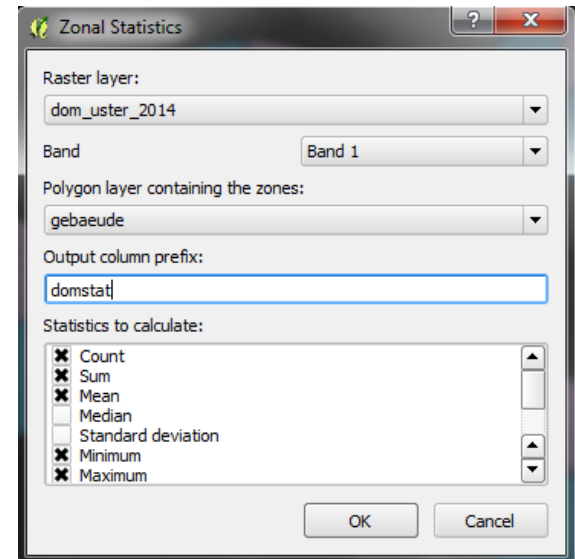
Statistics Summary Panel (2.10)

- Various statistical parameters for all or selected features of a layer
- Total count and count of NULL values
- Improved zonal stats plugin - to generate raster/vector overlay statistics



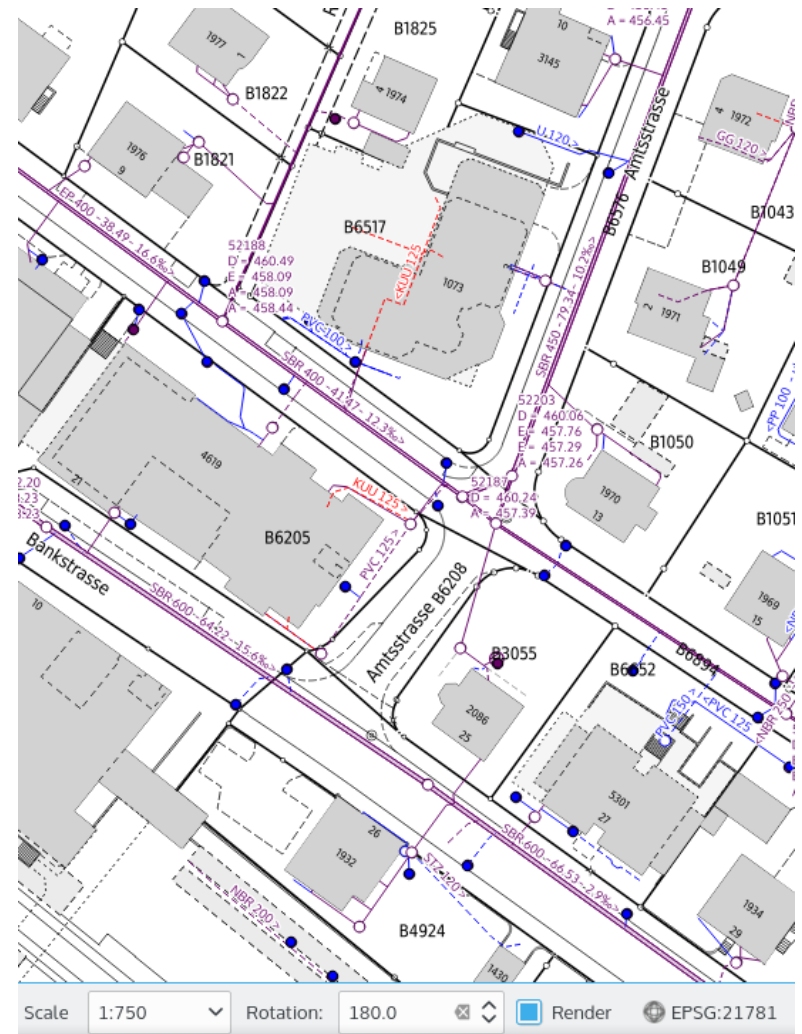
Statistic	Value
Count	7
Sum	14550
Mean	2078.57
Median	1750
St dev (pop)	1814.99
St dev (sample)	1960.41
Minimum	200
Maximum	4600
Range	4400
Minority	1750
Majority	200
Variety	5
Q1	200
Q3	3800
IQR	3600
Missing (null) values	0

Selected features only



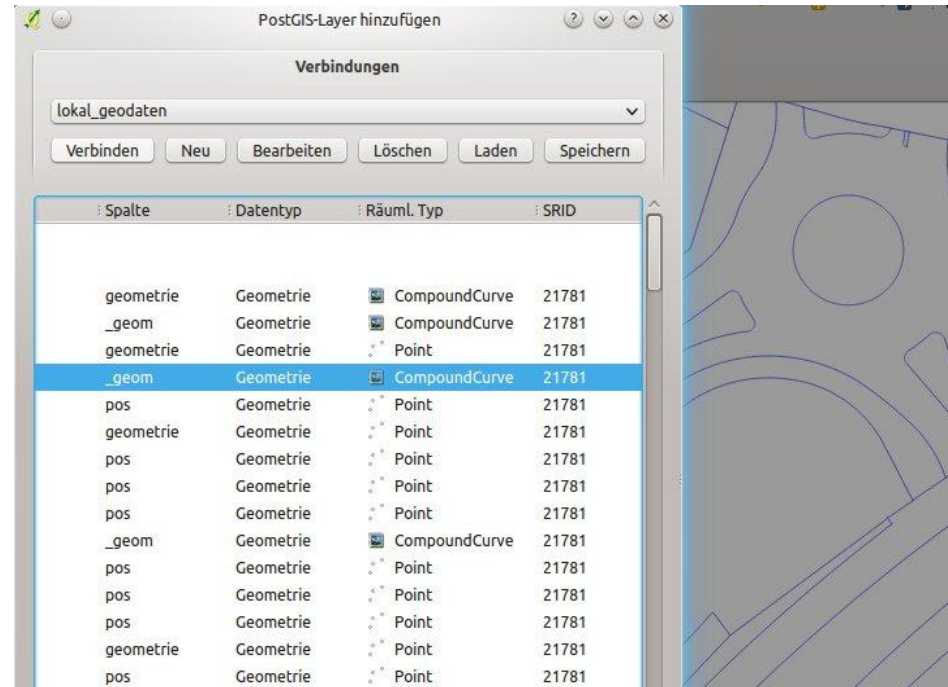
Map Rotation (2.8)

- Labels stay horizontal (when automatically placed)
- Labels don't get upside down if manually placed
- Also used in print composer
- No comfortable interactive map rotation tool yet (only spinbox)



New geometry model (2.10)

- Most new functionality not yet visible for user in 2.10
- 2.10: possibility to display features with curved type
- 2.12: editing of curved geometry types, z/m-values
- More details in the following presentation



Editor Widget Improvements

- Ongoing effort (2.6 to 2.10)
- Complete rewrite of widgets
- Extensible with custom widgets
- Proper handling of NULL values
- Improved date/time widget
- Improved widget for nested forms (relations)
- Lineedit with autocompleter for value relations (2.10)
- Drill-down filter for value relations (2.10)

Date/Time Widget Improvements

The screenshot displays the QGIS interface with three overlapping dialog boxes:

- Layer Properties - Baustellenprojekte | Fields:** Shows a table of field properties. The 'Date/Time' widget is selected for the 'Beginn Bauprojekt' field.
- Edit Widget Properties - start_bauprojekt (Baustellenprojekte):** Shows the configuration for the Date/Time widget, including options for 'Editable', 'Field format' (set to 'date'), and 'Widget display' (set to 'custom').
- Attribute table - Baustellenprojekte :: Features total: 86, filtered: 86, selected: 0:** Shows a list of features and a date picker for the 'Beginn Bauprojekt' field. The date picker is set to '19.06.2015' and shows a calendar for June 2015.

Length	Precision	Comment	Edit widget	Alias
-1	-1		Check Box	Öffentliche Beleuchtung
-1	-1		Check Box	Swisscom
-1	-1		Check Box	Cablecom
-1	-1		Date/Time	Beginn Bauprojekt
-1	-1			
-1	-1			
-1	-1			
-1	-1			
-1	-1			
-1	-1			
-1	-1			

Name	Layer	Field
Linie zu Baustellenprojekt	Baustellenprojekte Linien	gid_baustellen_p...

GID	Expression
	Sonnenbergstrasse (... Wildsbergstr.), 92
	Tempo 30 Zone Wermatswil, 79
	Steigstrasse, 96
	Gartenstrasse, 77
	Tempo 30 Zone Talweg, 80
	Tempo 30 Zone Riedikon, 81
	Tempo 30 Zone Feldhofstrasse, 82
	Tempo 30 Zone Brunnenwiesenstrasse, 83
	Tempo 30 Zone Tannenzaunstrasse, 84
	Rebenweg, 93
	Gschwaderplatz, 95
	Wagerenstrasse, 98

Beginn Bauprojekt	19.06.2015
Koordination Werke	Calendar view for June 2015
Submission	31 1 2 3 4 5 6
Baubeginn	7 8 9 10 11 12 13
Bauende	14 15 16 17 18 19 20
	21 22 23 24 25 26 27
	28 29 30 1 2 3 4
	5 6 7 8 9 10 11

Relation Reference Widget Improvements

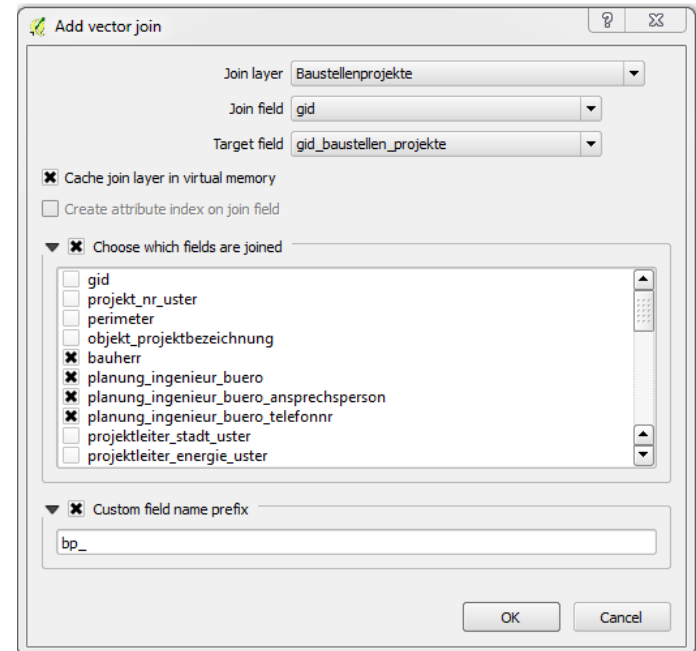
The image displays three overlapping QGIS windows illustrating the Relation Reference Widget improvements:

- Edit Widget Properties - gid_baustellen_projekte (Baustellenprojekte Linien):** Shows the widget configuration. The **Relation** is set to `vw_baustellen_projekte_linienelemente20120827152807319_gid_baustellen_projekte_baustellen_projekte20120827114953883_gid`. The **Display expression** is `COALESCE('objekt_projektbezeichnung', '') || ' / ' || 'gid'`. The **Relation Reference** section is checked, and **Order by value** is selected.
- vw_cover - Feature Attributes:** A dialog box showing attribute values for a selected feature. The **fk_wastewater_structure** attribute is set to `FAA AK572`. A red circle highlights the **Show connected features** icon (a magnifying glass over a map) next to this attribute.
- Attribute table - Baustellenprojekte Linien :: Features total: 62, filtered: 62, selected: 0:** Shows a list of street names. A detailed form view for the selected feature (GID: 259) is overlaid, showing the **Baustellenprojekte** section with fields for **GID** (59), **Projekt-Nr Stadt Uster** (30290.041), **Objekt- oder Projektbezeichnung** (Sulzbacherstrasse), and **Objekt- oder Projektbezeichnung** (Sulzbacherstrasse).

Show connected features in map if relation is a geometry table

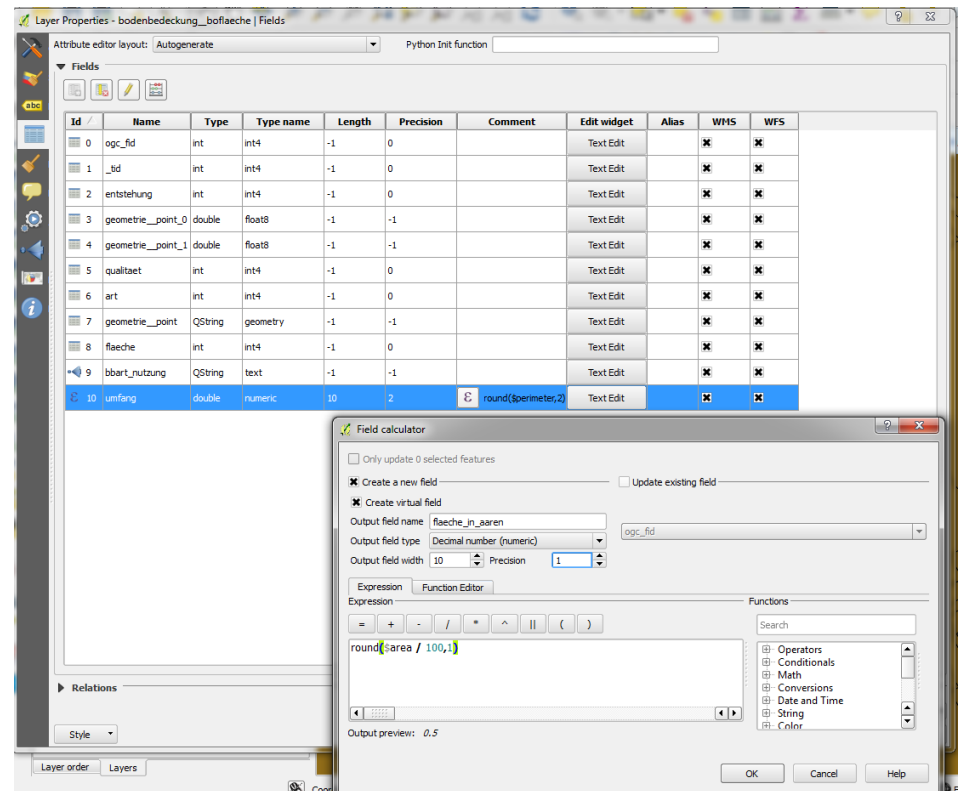
Join Improvements

- Master Layer can still be edited after join and fields added
- Choose which fields are joined
- Choose field name prefix for joined attributes
- Create attribute index on join field (provider dependent)



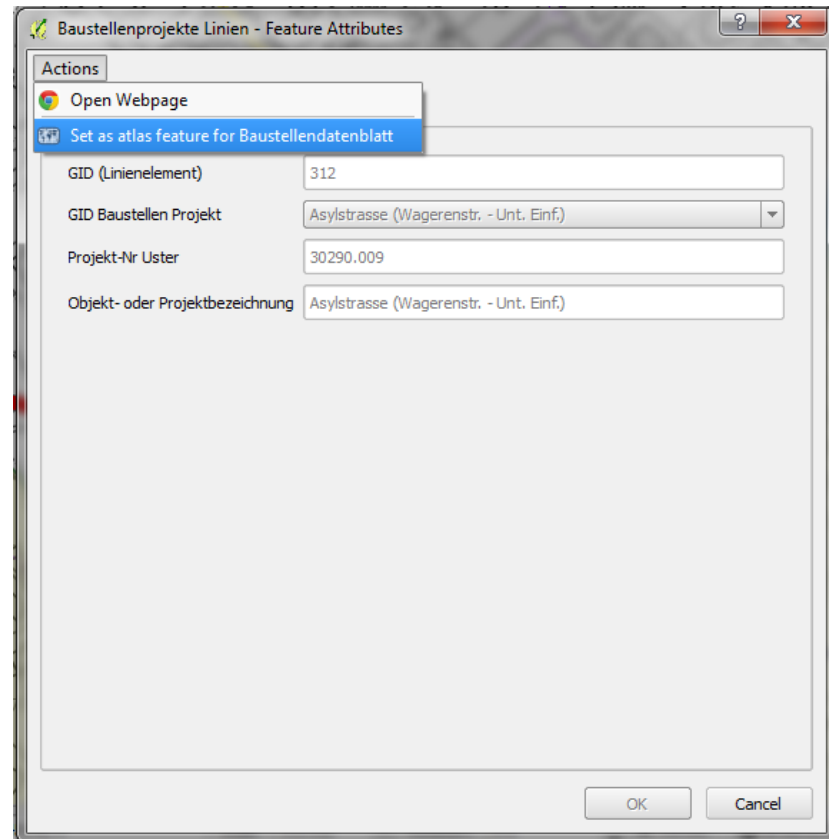
Virtual Fields (since 2.6)

- behaves like database view
- can be used like a normal field, but read-only and automatically updated
- with \geq QGIS 2.10 the virtual field definition can also be updated



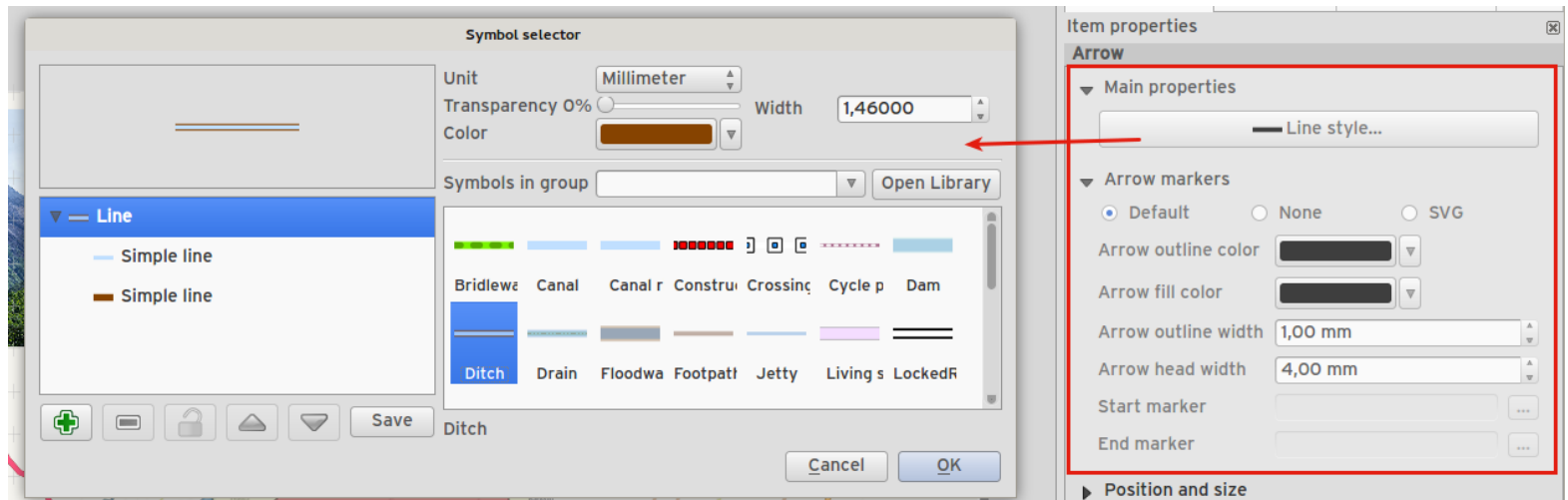
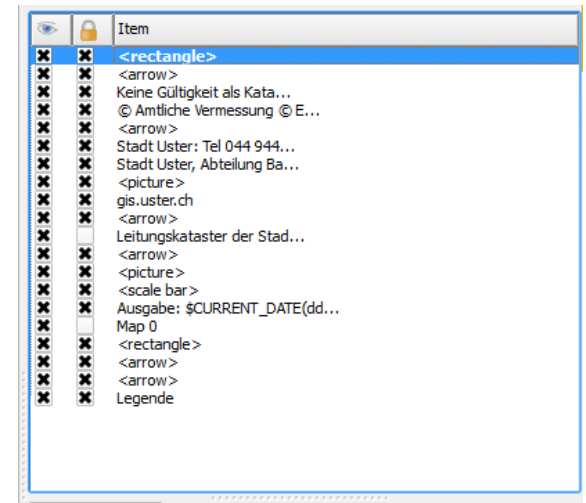
Actions Improvements

- New actions menu in form
- Actions can have icons associated
- New automatic action for opening datasheets (atlas printing) - if layer is used as Atlas coverage layer



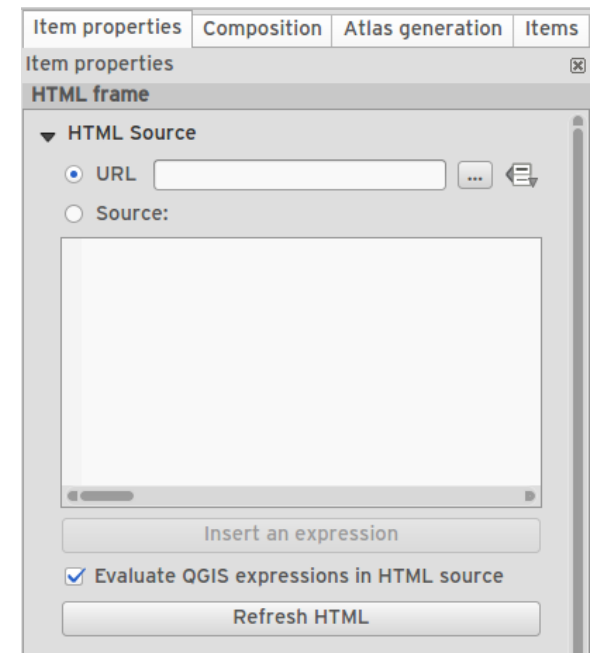
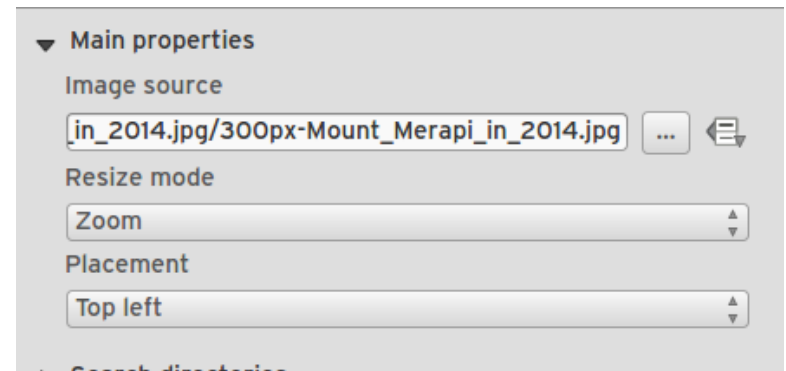
Print Composer Improvements (2.6)

- New item tree to control visibility, editability and reorder/rename elements
- Better styling options for lines/arrows and basic shapes
- More data-defined properties



Image/HTML Frame Improvements (2.6)

- Support loading image from URL
- Image Path can be constructed from Expressions
- Resize and placement options
- HTML source from local file, URL or generated from expression
- Better page breaks for multipage HTML content
- Data-defined URL support
- Support for user stylesheets and scripting



Mapgrid improvements in Composer (2.6)

- Multiple map grids with different CRS
- More Styling Options
- More labelling options
- Better support for lat/lon grids

The screenshot displays a software interface for map creation. The main window shows a map titled "Werkplan Kanalisation" (Sewerage Work Plan). The map includes a grid overlay with red lines and labels such as "8°42'56.200\"", "47°20'44.200\"", "B5619", "B5615", "B6702", "B7492", "B7493", "Apothekerstrasse", and "Kirchgemeindefhaus". A text box at the top of the map provides a disclaimer: "Bei Verwendung überholter Pläne, sowie für die Richtigkeit und Vollständigkeit der und unterirdischen Anlagen übernimmt die Stadt Uster keine Haftung. Die genaue eingetragenen Werkleitungen ist bei Baubeginn zu überprüfen. Dieser Plan hat keir der amtlichen Vermessung." Below the map, the status bar shows "nm y: -6.30809 mm page: 1", "151.0%", and "1 item selected".

On the right side, there is a "Items" panel with a list of items: "<rectangle>", "© Stadt Uster: Stadtverme...", "<arrow>", "044-944 72 61, abwasser@u...", "Stadt Uster Stadtentwässe...", and "<picture>". Below the "Items" panel is the "Item properties" panel, which is currently showing the "Grids" section. The "Grids" section has a "Draw 'WGS84 (4326)' grid" checkbox checked. The "Grid type" is set to "Solid", the "CRS" is "EPSG:4326", and the "Interval units" are "Map unit". The "Interval" is set to "X 0.000500000000" and "Y 0.000500000000". The "Offset" is set to "X 0.000111000000" and "Y 0.000111000000". The "Line style" is "— change...", and the "Blend mode" is "Normal".

Multiple Maps in Overview Map (2.6)

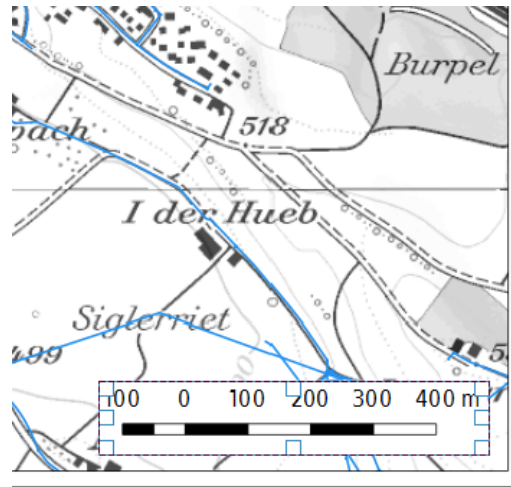
- Different styling for each map
- Inverted styling
- Blend modes

The screenshot displays a GIS application interface. On the left, a vertical strip shows three different map styles for the same geographic area, illustrating different styling options. The main map area shows a map of Uster, Niederuster, Kirchuster, and Riedikon, with a blue rectangular overview map overlaid. The top right corner features a legend and contact information for Stadt Uster, Energie Uster AG, and Energie Uster. The right side of the interface shows a configuration panel for 'Map 1' with the following settings:

- Item properties:** Command history, Composition, Atlas generation
- Item properties:** Item properties
- Map 1:**
 - Overviews:** Overview 2, Overview 1
 - Draw "Overview 2" overview:**
 - Map frame: Map 2
 - Frame style: Change...
 - Blending mode: Normal
 - Invert overview
 - Center on overview
 - Position and size:**
 - Rotation:**
 - Frame:**
 - Frame color: [Color selection]

Better scaling of scale bars (2.10)

Define
min/max
length of
segment width
and change
map units per
segment



Stadt Uster

förderanlagen
sion (Liter per Minute)

Wasserdruckzonen

- Hochzone
- Obere Zone
- Untere Zone

1 item selected

The screenshot shows the 'Scalebar' properties dialog box in a software application. The dialog is divided into several sections:

- Main properties:** Map (Map 0), Style (Single Box).
- Units:** Meters, Label (m), Map units per bar unit (1.000000).
- Segments:** Segments (left 2, right 4), Fixed width (100.000000 units), Fit segment width (selected), min 25 mm, max 100 mm, Height (2 mm).
- Display:** Box margin (1.00 mm), Labels margin (3.00 mm), Line width (0.20 mm).

The 'Segments' section is highlighted with a red box, indicating the focus of the 'Better scaling' feature. The 'Fit segment width' option is selected, and the 'min' and 'max' values are set to 25 mm and 100 mm, respectively.

Table Improvements in Composer (2.6)

- Table content can flow in multiple frames/pages
- Lots of new formatting/styling options
- New datasources: atlas feature, intersecting with atlas feature, relations
- New filter/order options

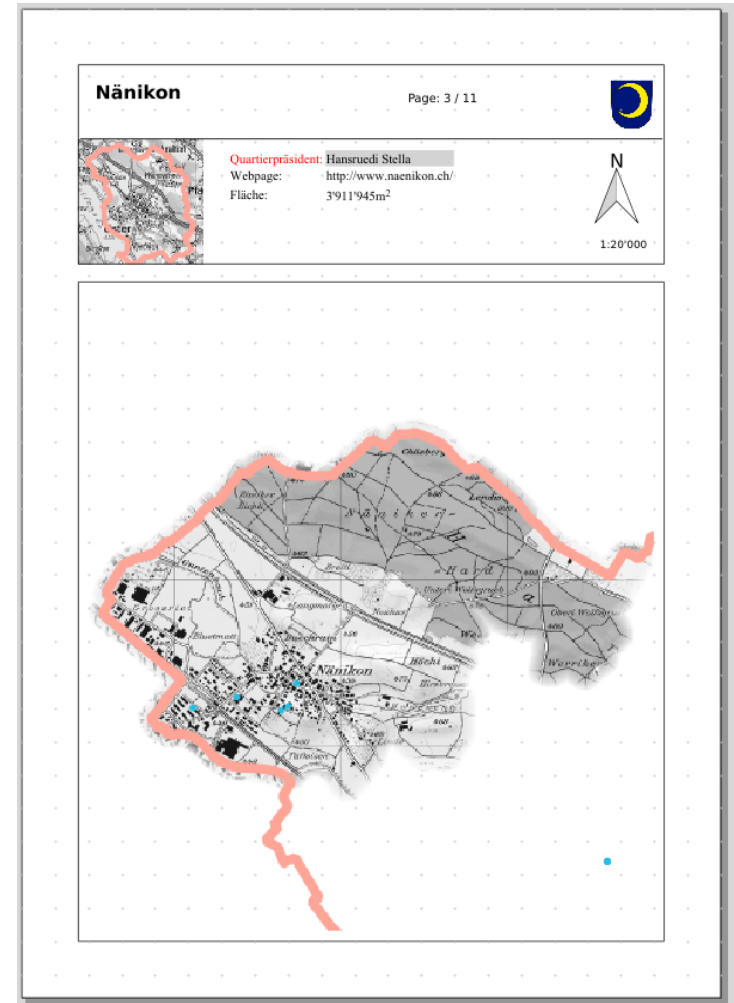
Schachtnummer	Strassenname	Schachttyp
198 2351	Talackerstrasse	Schlamm
198 3478	Zentralstrasse	Schlamm
198 3482	Talackerstrasse	Schlamm
21132		Kontrolle, S
21133		Kontrolle, S
21134		Kontrolle, S
21135		Kontrolle, S
21136		Kontrolle, S
22217	Talackerstrasse	Kontrolle, S
291.17.12		Kontrolle, S
291.17.7		Kontrolle, S
630.12.10		Kontrolle, S
630.12.4		Schlamm
630.14.23		Kontrolle, S
630.4.1		Kontrolle, S
630.6.7		Kontrolle, S
630.6.9		Schlamm
630.8.1		Kontrolle, S
630.8.7		Kontrolle, S
678.40.3		Hofsammle
678.40.4		Kontrolle, S

The screenshot shows the QGIS Composer interface with the 'Attribute table' properties panel open. The panel is divided into several sections:

- Main properties:** Source is set to 'Layer features' and Layer is set to 'Normschacht'. There are buttons for 'Refresh table data' and 'Attributes...'
- Feature filtering:** Maximum rows is set to 30. There are checkboxes for 'Remove duplicate rows from table' (unchecked), 'Show only features visible within a map' (checked), and 'Show only features intersecting atlas feature' (unchecked). The 'Composer map' is set to 'Map 0'. There is a checked checkbox for 'Filter with' and the filter expression is 'schachtnummer IS NOT NULL'.
- Appearance:** There is a checkbox for 'Show empty rows' (unchecked). Cell margins are set to '1.00 mm'. The 'Display header' is set to 'On first frame'.

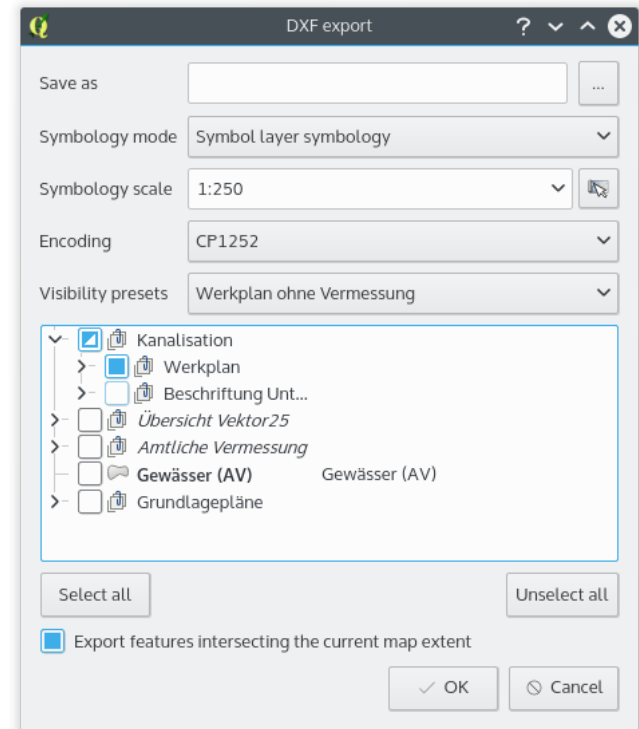
Atlas Serial Print improvements (2.6/2.8)

- New variables for symbology: \$map, \$atlasfeature, \$currentfeature, \$atlasgeometry, \$geometry
- New geometry relation tests for use in expressions and with Atlas
- New functions to get records and attributes from linked tables: getFeature(), attribute()

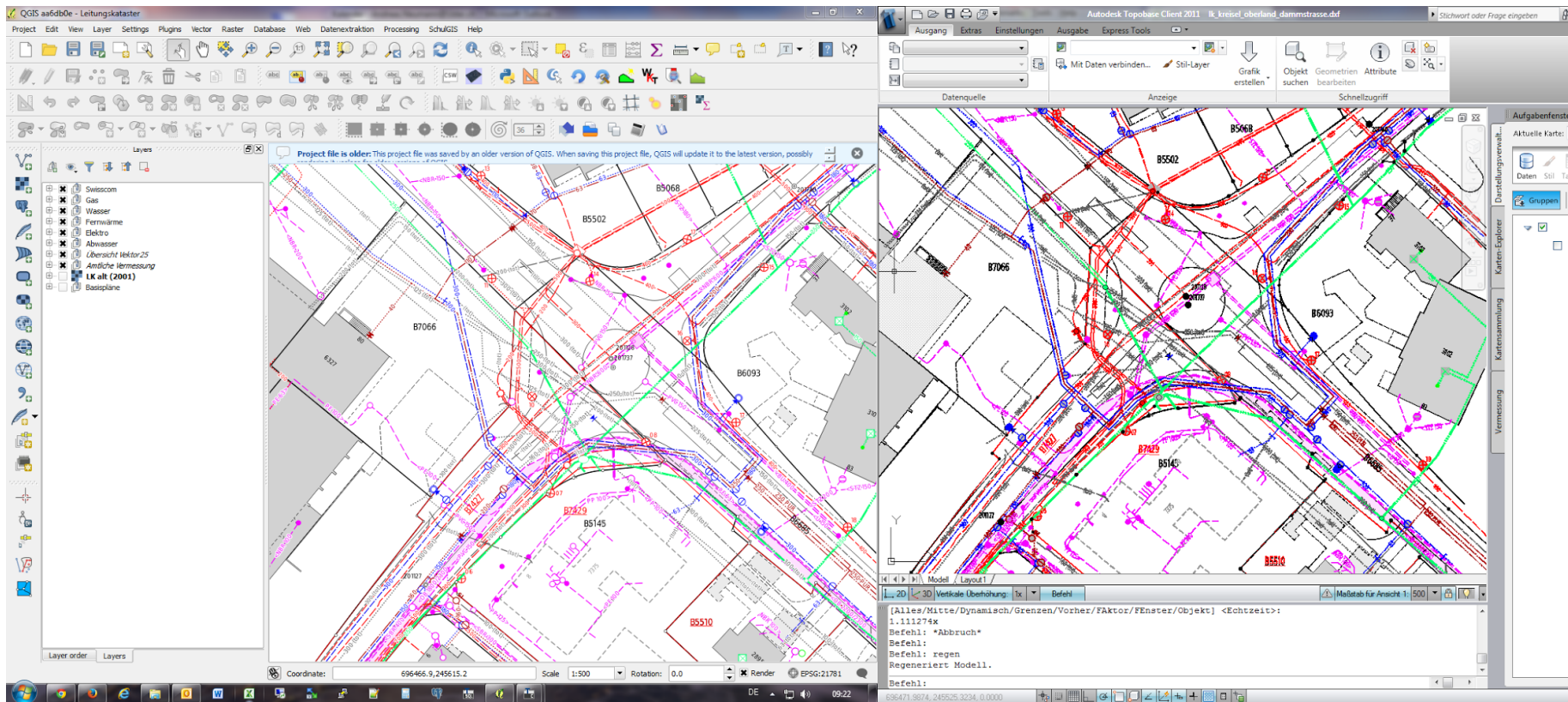


DXF Export Improvements

- Export with or without symbology
- Export everything or visible extent
- Set scale for rendering rules and filters
- Use QGIS layer names or layer attribute to determine layer name
- Support of visibility presets
- Support multiline text
- Support solid fills
- Support transparency
- Support line offsets and units properly
- Automatic conversion of simple and SVG symbols to DXF blocks

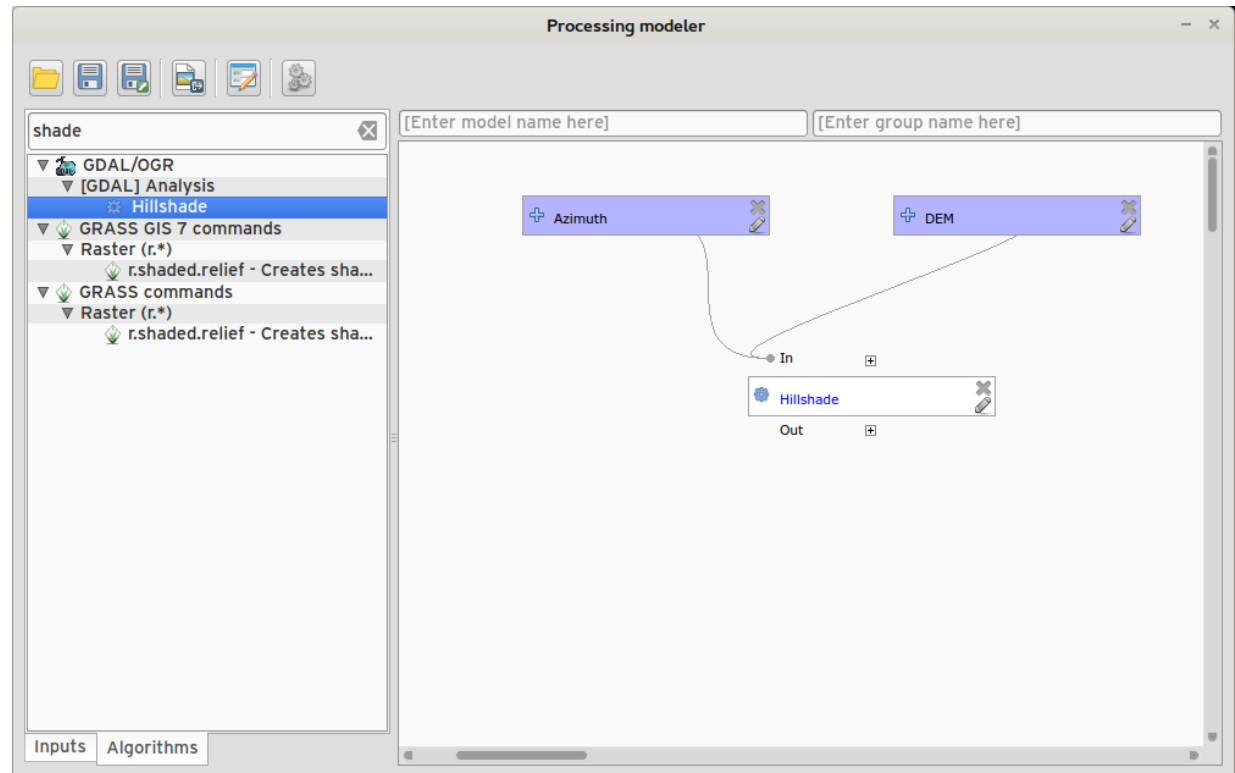


DXF Export Improvements



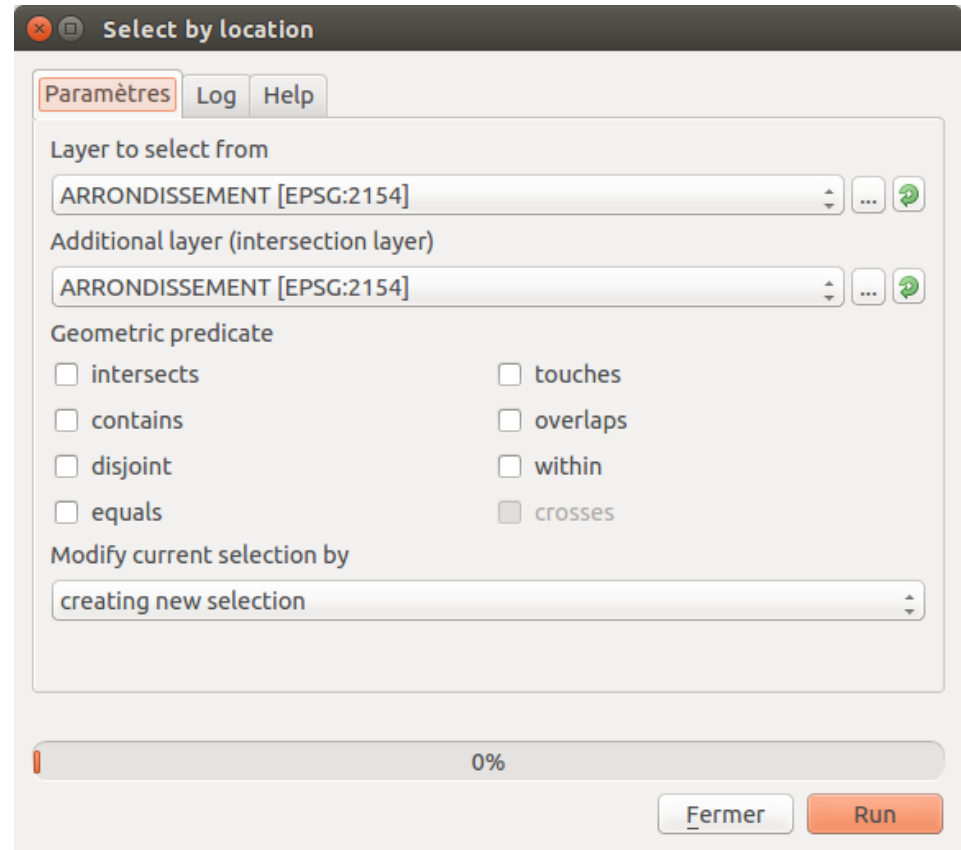
QGIS Processing Improvements (2.6)

- Complete Rewrite of Modeler
- Drag and Drop Support
- Models stored in json format



QGIS Processing Improvements (2.8)

- New geometric predicate parameter types for select/extract/join by location
- New Algorithms:
 - refactor fields
 - symmetrical difference
 - Vector split
 - Split lines with lines
 - Vector grid
 - Regular points
 - Hypsometric curves



QGIS Programmability (2.6 and 2.8)

- New API for QGIS widgets
- Custom expressions with Python and new builtin function editor for custom Python expressions
- Add comments (SQL style prefix) to expressions and keep formatting
- Python console improvements
- DB-Manager: run only selected part of SQL query

The image shows two overlapping windows from the QGIS software. The top window is the 'Expression' editor, which contains a SQL-style CASE statement for classifying roads based on their 'road' field values. The bottom window is the 'Field calculator' dialog, which is configured to create a new field of type 'Whole number (integer)' with a width of 10 and a precision of 0. It also shows a 'Function Editor' tab with a Python template function for defining custom functions.

```
--- Set the category of the road according to a field
CASE
WHEN "road" == 1 THEN 'motorway'
WHEN "road" == 2 THEN 'trunk'
WHEN "road" :
WHEN "road" :
WHEN "road" :
WHEN "road" :
ELSE
'unclassified'
END
```

Field calculator

Only update 5 selected features
 Create a new field Update existing field

Create virtual field

Output field name:
Output field type: Whole number (integer)
Output field width: 10 Precision: 0

Expression | Function Editor

Run Script | New File | scratch | Save file

```
1 ***
2 Template function file. Define new functions using @qgsfunction.
3 When using args="auto" you may define a new variable for each value of
4 feature and parent must always be the last args.
5 To pass a any number of args into a function use args=1 the first
6 variable will then be a list of values.
7 ***
8
9 from qgis.core import *
10 from qgis.gui import *
11
12 @qgsfunction(args="auto", group='Custom')
13 def func(value1, feature, parent):
14     pass
```

Help | OK | Cancel

QGIS Server Improvements

- Enhanced searching with GetFeatureInfo Request (2.6)
- Dynamic GetFeatureInfo tolerance separate for point/line/polygon features
- Precision setting for geometry in GetFeatureInfo response (2.6)
- Python plugins for QGIS Server (2.8)
- Support for layer styles (2.8)
- Describe layer method added to WMS (2.8)

Plans:

- DXF output (2.12)
 - Support data-sheets and reports through exposing atlas printing in QGIS Server
 - Expose Processing Scripts as WPS
-

Credits

- To all who paid for new features / bug fixing
 - QGIS-CH
 - SIGE, Uster, Morges, Vevey
 - Kt. Solothurn, Kt. Glarus
 - Agence de l'eau Adour Garonne
 - French Ministry of Ecology, Sustainable Development and Energy
 - World Bank / Inasafe
- To all who developed the new functionality
 - Nyall Dawson
 - Martin Dobias
 - Jürgen Fischer
 - Marco Hugentobler
 - Matthias Kuhn
 - Sandro Mani
 - Hugo Mercier
 - Denis Rouzaud
 - Nathan Woodrow

list is not complete ...
