Selected QGIS Improvements



2.10 to 2.16





Andreas Neumann (GIS-Fachstelle, Kanton Zug, Switzerland)

Visual Change Logs

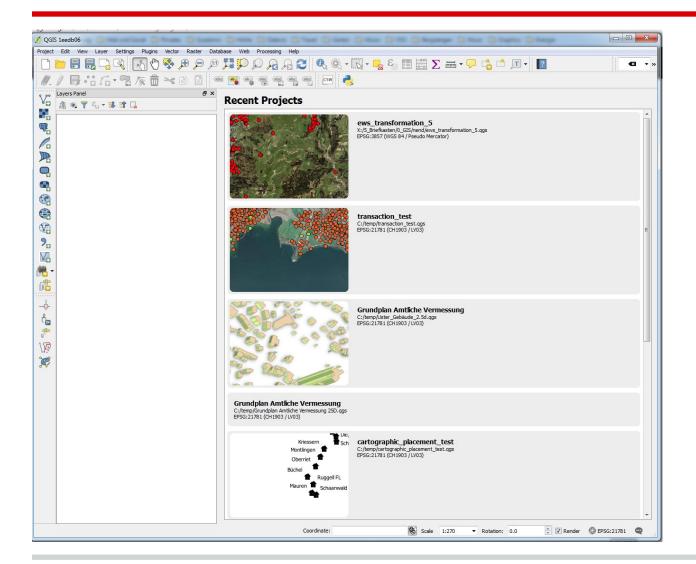
- http://www.qgis.org/en/site/forusers/visualchangelogs.html
- Since QGIS 2.0

Programmability

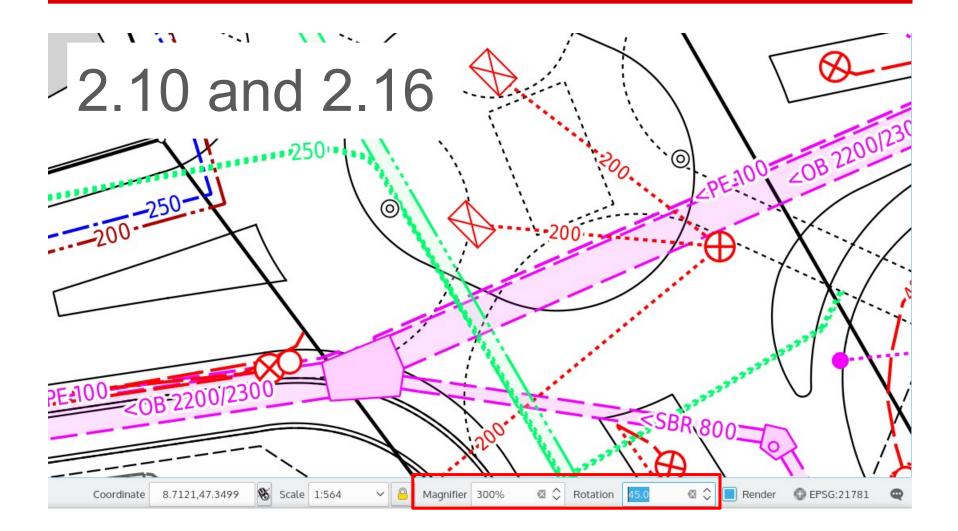


This is a special release since it is designated an 'LTR' (Long Term Release). LTR releases will be supported with backported bug fixes for **one year**, and will be in permanent feature freeze (i.e.

Startscreen with recent projects



Rotation and Magnifier Controls in Status Bar



Central Settings Editor

	Setting	Туре	Value	Description
System	v E Composer			
	defaultFont	QString		
Data Sources	defaultSnapGridOffsetX	double	0	
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Locale	Plugin-ZonalStatistics			
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Authentication	PostgreSQL			
	Processing			
Network	Projections			
	PythonPlugins			
Variables	Dais			

Alternative central view to all settings in QGIS

2.12

Be careful!

Security - Encrypted passwords

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	Help	Cancel

2.12 + 2.14

Integrated password manager with master password

Encrypted passwords stored in SQLite DB

PKI authentication with keys

Available for different providers, e.g.:

- Postgis
- WMS
- WFS

Variables

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	ne Andreas Neumann
▼ Project	
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	Erdwärmesonden Kanton Zug
Project Font	
	2.12 + 2.14
	. IZ T Z. 14

Can be defined:

- globally
- on project
- on layer
- in print composer

Different scopes with inheritance

Automatic variables (like QGIS version, OS, User, Project file path) or custom user defined variables

New in version 2.14: @qgis_os_name [Linux|Windows|OSX], @qgis_platform [Desktop|Server], @user_account_name, @user_full_name, @geometry_part_count, @geometry_part_num, @map_extent_width, @map_extent_height, @map_extent_center

New expression functions

- num_points(geom)
- area(geom)
- Iength(geom)
- perimeter(geom)
- start_point(geom)
- end_point(geom)
- point_n(geom,n)
- make_point(x,y)
- x(geom)
- y(geom)

Only update 0 s	ield	Update existing field	
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Output field type	Whole number (integer)	id	
Output field width			
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- project_color
- color_part (e.g. red, hue, aplpha)

2 1 2

- set_color_part
- day_of_week

New expression functions

- relate (DE-9IM)
- m/z additions for many functions
- reverse (linestring)
- eval(function)
- translate
- darker|lighter
- radians|degrees
- point_on_surface
- exterior_ring

- is_closed
- geometry_n
- num_geometries
- num_rings
- num_interior
- nodes_to_points
- segments_to_lines

2 1 4

- closest_point
- shortest_line

New expression functions

- aggregate (with filter/group by)
- relation_aggregate (for related features in other tables)
- Improved date/time calculations

2.16

GDAL/OGR 2.x in QGIS Windows

- Better Geopackage support
- Support for curves in more data providers (e.g. Geopackage, GML, Interlis, Postgis)
- Support for reading and writing spreadsheet files (Libreoffice and Excel)
- more options for GDAL/OGR based Processing providers or format translations

Export of Display Values in Save As

- Export of human-readable values instead of internal representation or codes
- For certainwidgets
 - Date/Time
 - Value Relation
 - Relation Reference Widget
 - Boolean
- Default for Spreadsheet and CSV export

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Postgis Provider

- Performance improvements for rulebased renderer
- Support for compound primary keys on tables/views
- Timestamp data type support (2.14)
- Transaction groups for editing (2.14 / 2.16)
- PKI auth support (2.14)

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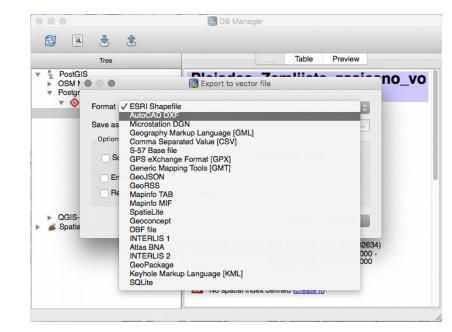
2.12 - 2.16

WFS Client

- Version auto-detection
- Implements WFS 1.0, 1.1 and 2.0
- Local cache in SpatiaLite
- Background download and progressive rendering
- URI parameter with sql with SELECT / FROM / JOIN / WHERE / ORDER BY clauses
- WFS 2.0 joins
- "Only request features overlapping the view extent" setting by default
- Many behind the scenes improvements / tests 2.16

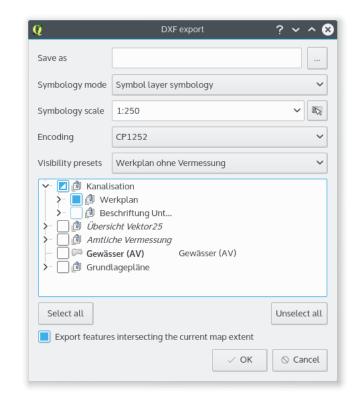
DB-Manager

- Export to OGR supported formats
- Support Oracle connections
- Import only selected features
- Query windows as tabs (good for multiple SQL queries)



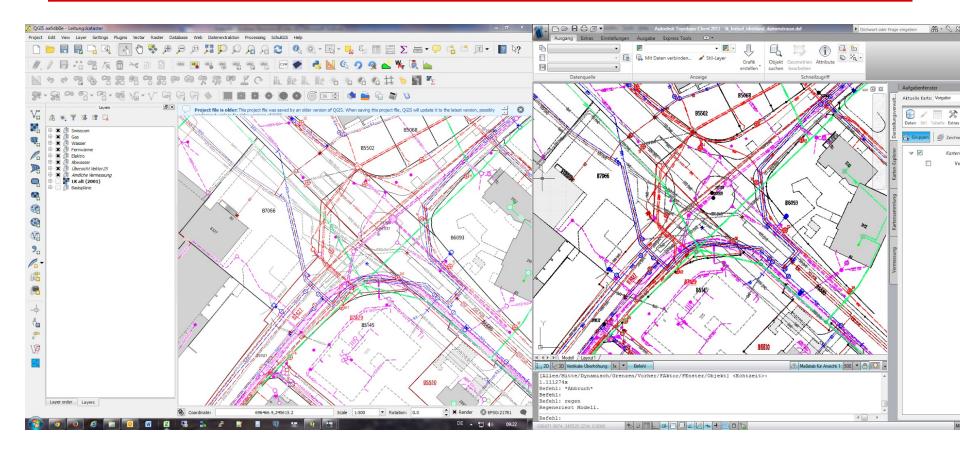
DXF Export Improvements

- Export with our without symbology
- Export everything or visible extent
- Set scale for rendering rules and filters
- Use QGIS layer names, layer title 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



2.8 - 2.14

DXF Export Improvements

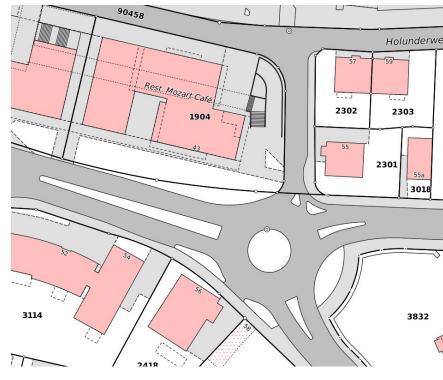


2.8 - 2.14

New geometry model

Circular Arcs, 3D, M-Values

- 2.10: possibility to display features with curved type
- 2.12: editing of curved geometry types, z/m-values
- 2.14: curve support in WKT and GML
- 2.16: Curve support in Geopackage (through OGR)
- 3.x: ????

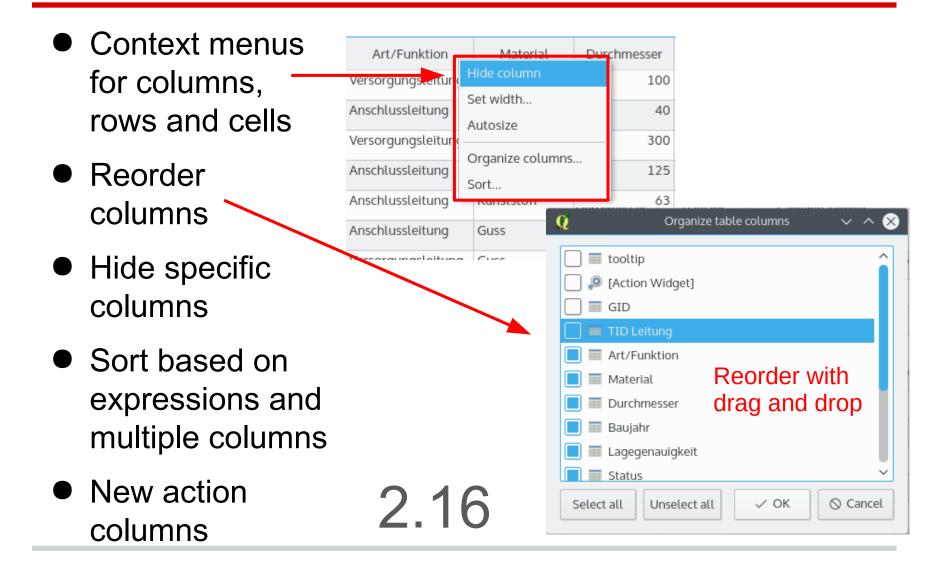


2.10 - 2.16

Conditional formatting in attribute table

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Attribute table improvements



Statistics Summary Panel

- 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

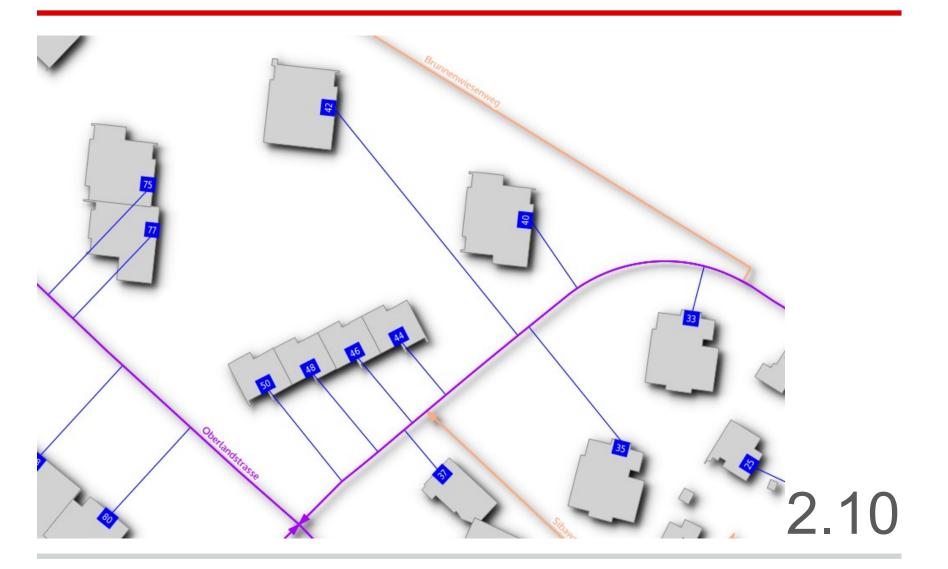
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X Maximum		

Live Layer Effects

- 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



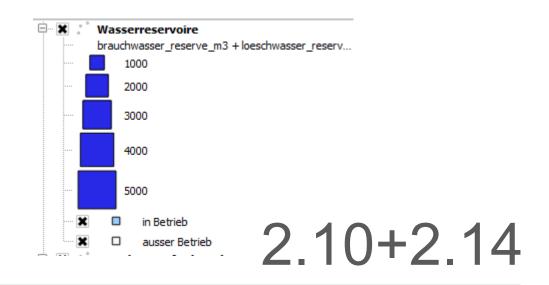
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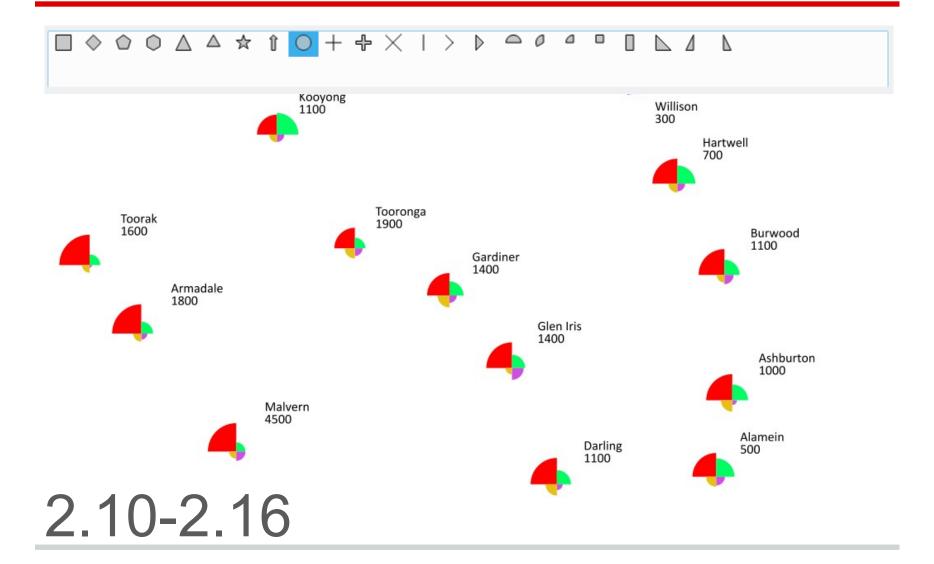
Scaled symbols improvements

- 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)

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Size Assistant / New simple markers



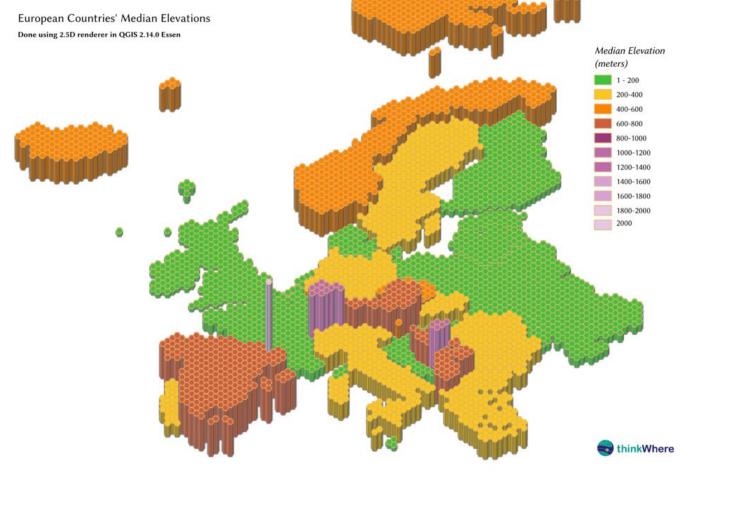
2.5D Rendering

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🥡 Metadata	Advanced Styling This page helps to configure the 2.5D effect as easily as possible with some basic parameters.
Variables	Once you have finished the basic styling, you can can convert this to another renderer (single, categorized, graduated) and fine-tune the appearance to your liking.
	Overlay problems
	Features are rendered based on their distance to the camera. It is sometimes possible that parts of a feature are in front of another feature by mistake. This happens if any part of the overlapped feature is closer to the camera than the overlapping feature.
	In such cases you can avoid rendering problems by cutting the feature in front into smaller pieces.
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	Layer transparency
	Layer blending mode Normal Feature blending mode Normal
	Draw effects
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2.5D Rendering



2.5D Rendering



Curved Arrow Renderer

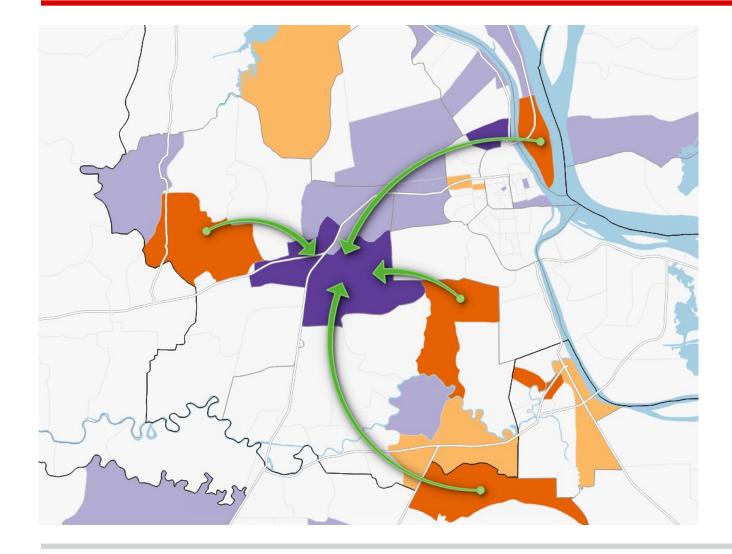
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- Geometry:
 - 3 points (lines)
 - or circular arcs
- Head types:
 - single
 - single, reversed
 - double
- Arrow types:
 - plain
 - left / interior half
 - right / exterior half
- Head: separate width/height

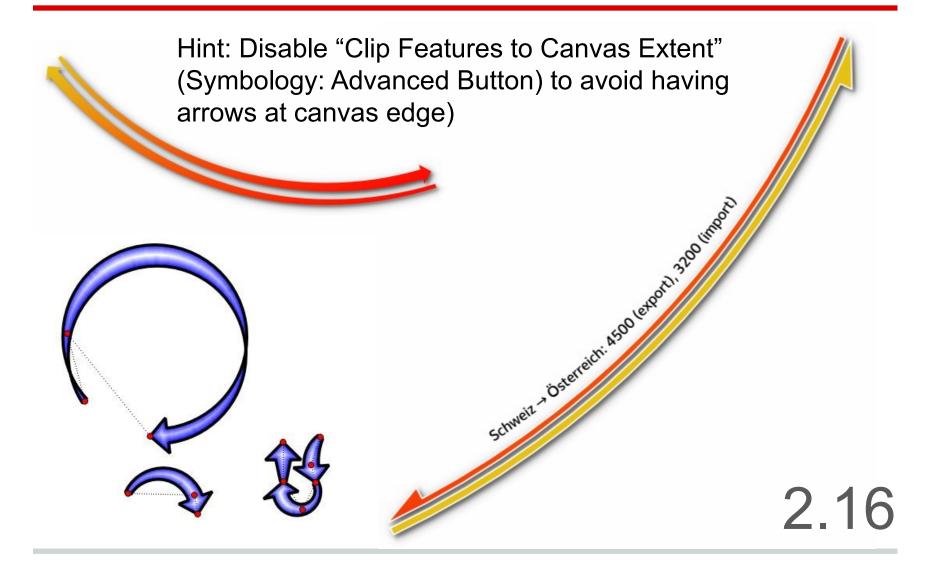
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Offsets for arrow

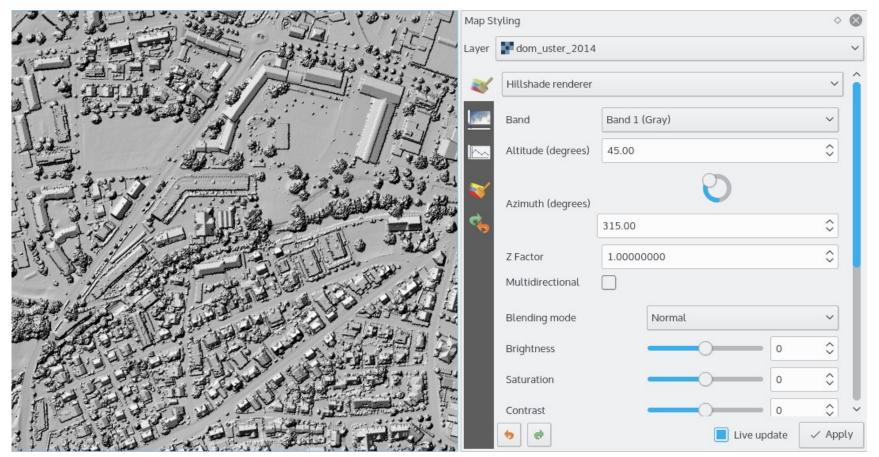
Curved Arrow Renderer



Curved Arrow Renderer



Live Hillshade Renderer



On the fly hillshade rendering of DTM or DOM models

New Interactive Gradient Editor

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Label Improvements

- Data-defined Quadrant for point lables
- Draw only labels in polygons, if label fits
- Control priority of label obstacles
- avoid polygon borders (obstacles)
- obstacle only layers

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/ Rendering	Discourage labels from cove	ring features 🚛				
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Label Improvements

- Control label rendering order
- Point labeling according to Krygier/Wood (2011): use "cartographic" priorities for positioning: top right, top left, bottom right, bottom left, middle right, middle left, top (slightly right), bottom (slightly left)
- Consider actual rendered symbol size for labeling point features
 - apply rendered size to label distance only available for "cartographic" positioning

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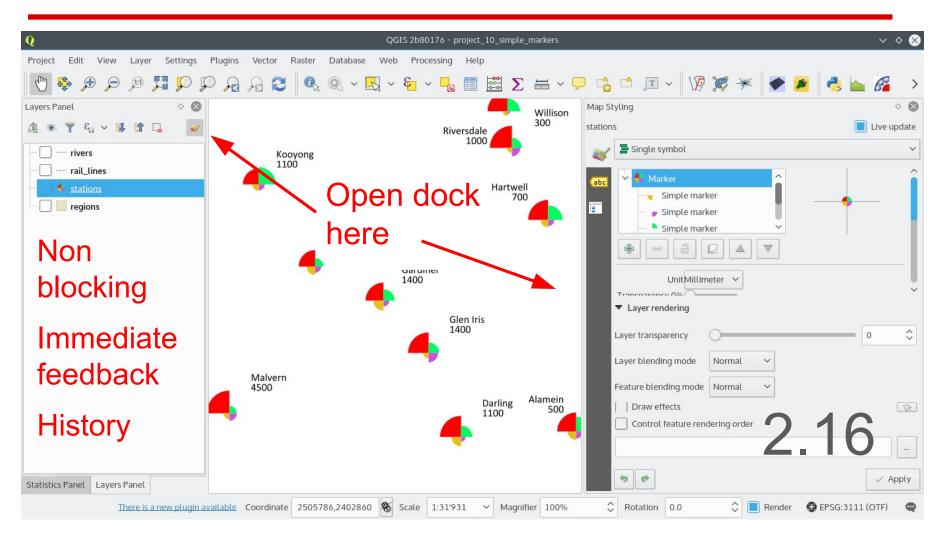
○ consider symbol bounding box as obstacle

Label Improvements



Consider actual rendered symbol size for automatic labeling offsets of point features

Map Styling and Labeling Dock



Editing

- Autotrace digitizing function improved and in QGIS core (2.14) – press "t" while digitizing. See http://www.lutraconsulting.co.uk/products/autotrace/Trac eDigitising for details with videos
- Extend linestring with reshape tool (2.16)
- Point Features: interactive editing of symbol offsets (2.16)

Widget Improvements

- Line edit with auto-completer for ValueRelation edit widget (2.10)
- Relation Reference Widget with Drilldown (2.10)
- Relative path support in file widget, photo widget and webview widget (2.12)
- External Resource Widget (for linking file and web ressources) (2.14)
- Client-side constraints on input widgets (2.16)
- Server-side default values (PostgreSQL) (2.16)

Multi-Attribute Search in Form View

- Start with CTRL-F or Button
- Select Features or Filter table
- Combine selection/filter rules from multiple fields
- Add or remove from selection or create new selection

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- Filter with AND / OR
- Select search operator
 - equal/not equal to value
 - greater/lower than value
 - is/is not NULL

Multi-Attribute Search in Form View

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Andreas Neumann			
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Martin Bachmann Roger Gubler	Rechtswert		Exclude field
Karin und Christoph Reinhardt	Hochwert		Exclude field
🔲 Dominik Hürlimann	Fläche	5	Equal to (=)
Hürlimann?	ruciic		
Gaby und Erwin Brändli	Leistung	10	Gr Equal to (=)
Nannette und Martin Bratteler	Datum Inbetriebnahme	0.40	Not equal to
Marc Vollenweider Andreas Wegmann	Kontakt	216	Case sensitive Greater than (>)
Michel Marti	Installationsfirma		ase sensitive
Elix Scheuner	Instattationsninna		Greater than or equal to (>=)
Hans Kaufmann alenergy invest AG	Bemerkung		Case sensitive I Is missing (null)
Andreas Leutenegger	Reset form	Select	features V I Is not missing (null)
Andreas Leutenegger			
T Show All Features			

Multi-Attribute Editing of Selected Features

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Credits

To all who paid for new features / bug fixing QGIS-CH, QGIS-UK SIGE, Uster, Morges, Vevey, Nyon, Pully Kt. Solothurn, Kt. Glarus, Kt. Zug, Kt. Basel Stadt, Land Vorarlberg DFAT/Inasafe Alta ehf, GIS3W Province Tuscany Boundless, iTOpen, Sourcepole, Camptocamp, OpenGIS, Norbit, Lutra, etc.

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list is probably not complete ...