Newcastle City Council - Migration to QGIS and Open Source GIS

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Outline I

Why Open Source?

- Rational
- What we did
- How we did it
- Benefits
- Discussion Points

QGIS

- Installer
- Support
- Plugins
- Training

PostGIS

- Migrating data
- Sync tool with ArcSDE

WebGIS and Geoserver

Business case & rational

- Context: annual budget reductions
- ESRI SDI expensive to run (VFM & ROI)
- Expansion limited due to costs (more cores =£)
- The Citrix environment slow making for a poor user experience for those sharing license costs
- Too many staff using have access to software with functionality that they do not need
- Limited funding for training & lack of trained Officers
- GIS environment is too slow but lack of funding means there is no budget for high specification desktops

What we did

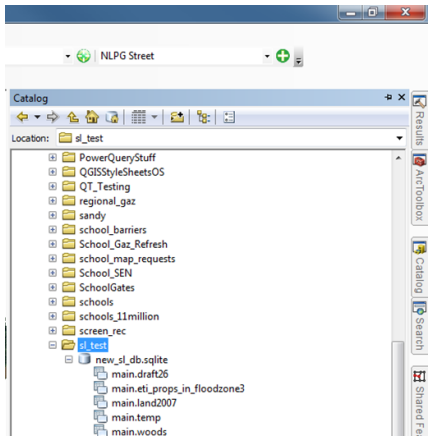
Planning, pilot study & migration

- Successful pilot implementation 2013
  - PostGIS & GeoServer set up and QGIS training
  - 80% of testers agreeing that QGIS a viable alternative to ArcView
- Decision mixed estate
- Move ahead with tender & wider implementation
- Use savings to pay for training
- Over 70 QGIS users

Data Compatibility

Files and services

- Shapefile
- File GDB
- .mdb
- WMS (rasters)
- PostGIS (with DLLs)
- Spatialite



Benefits

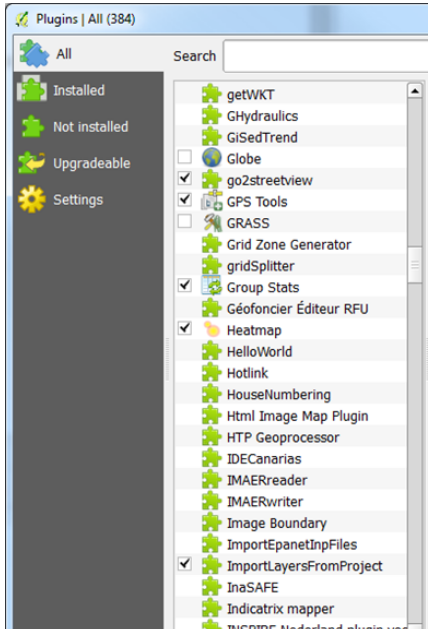
Savings & benefit

- Significantly reduced our annual costs
- Promotes collaboration and enables capacity building
- Lots of New users
  - e.g. Engineers / Flood response Team: 2 ArcView versus 8 QGIS installations
- No vendor lock-in

Benefits

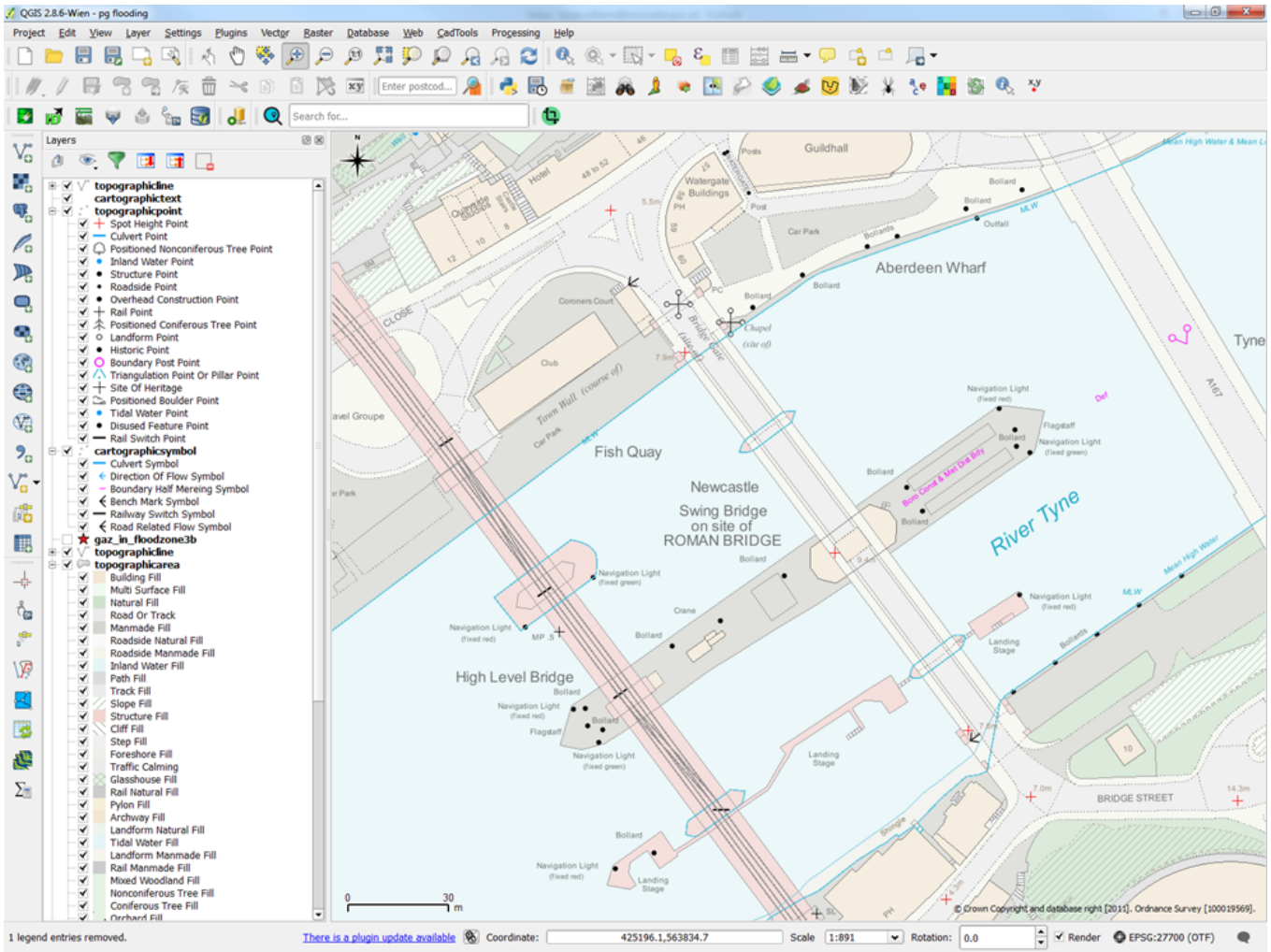
More tools

- Read/Write multiple data formats (gml)
- Powerful tools - GDAL/OGR
- Plug-ins (extensions)
  - Hotspot mapping
  - StreetView
  - CrayFish



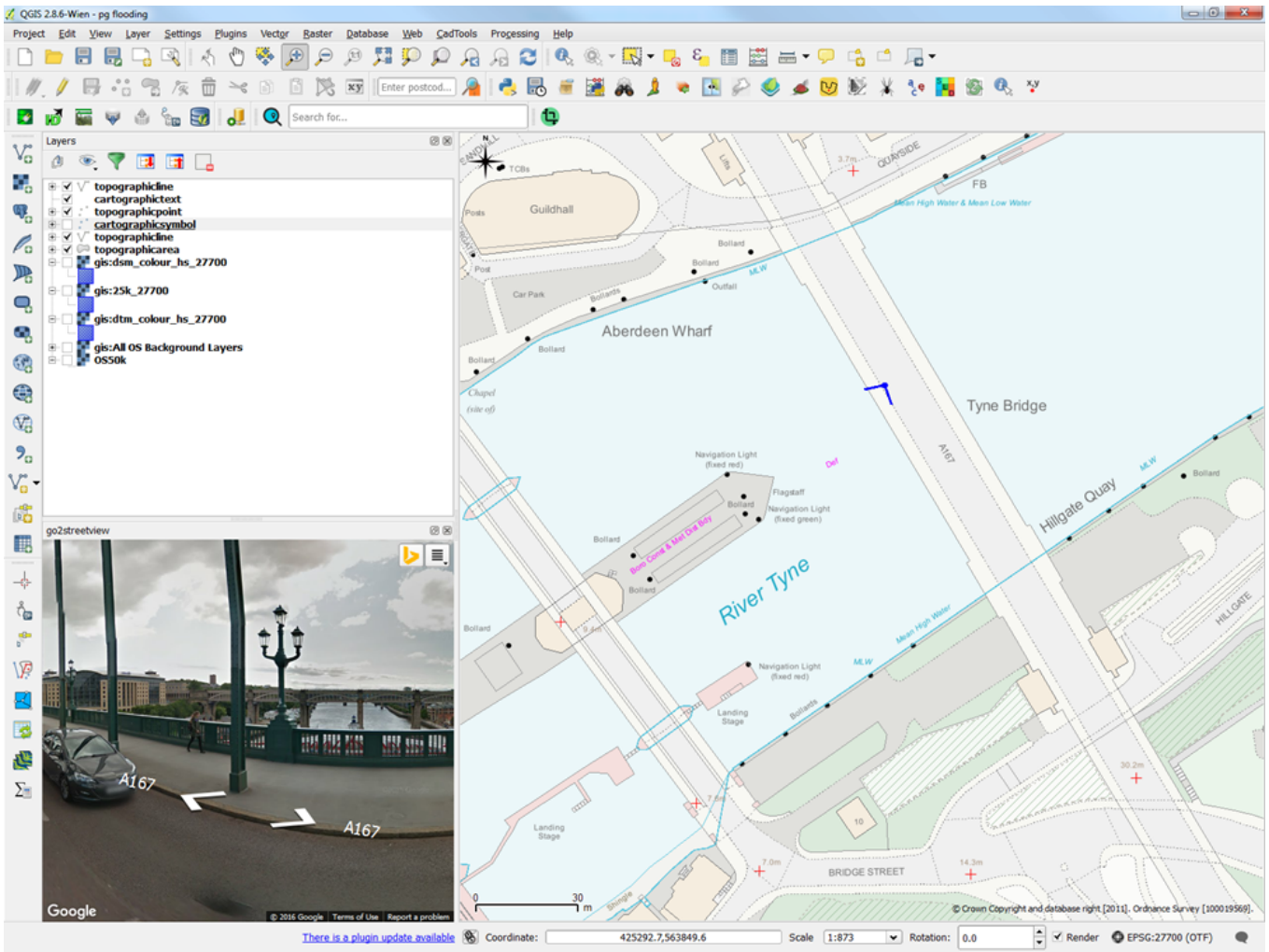
Benefits

OS MasterMap styling



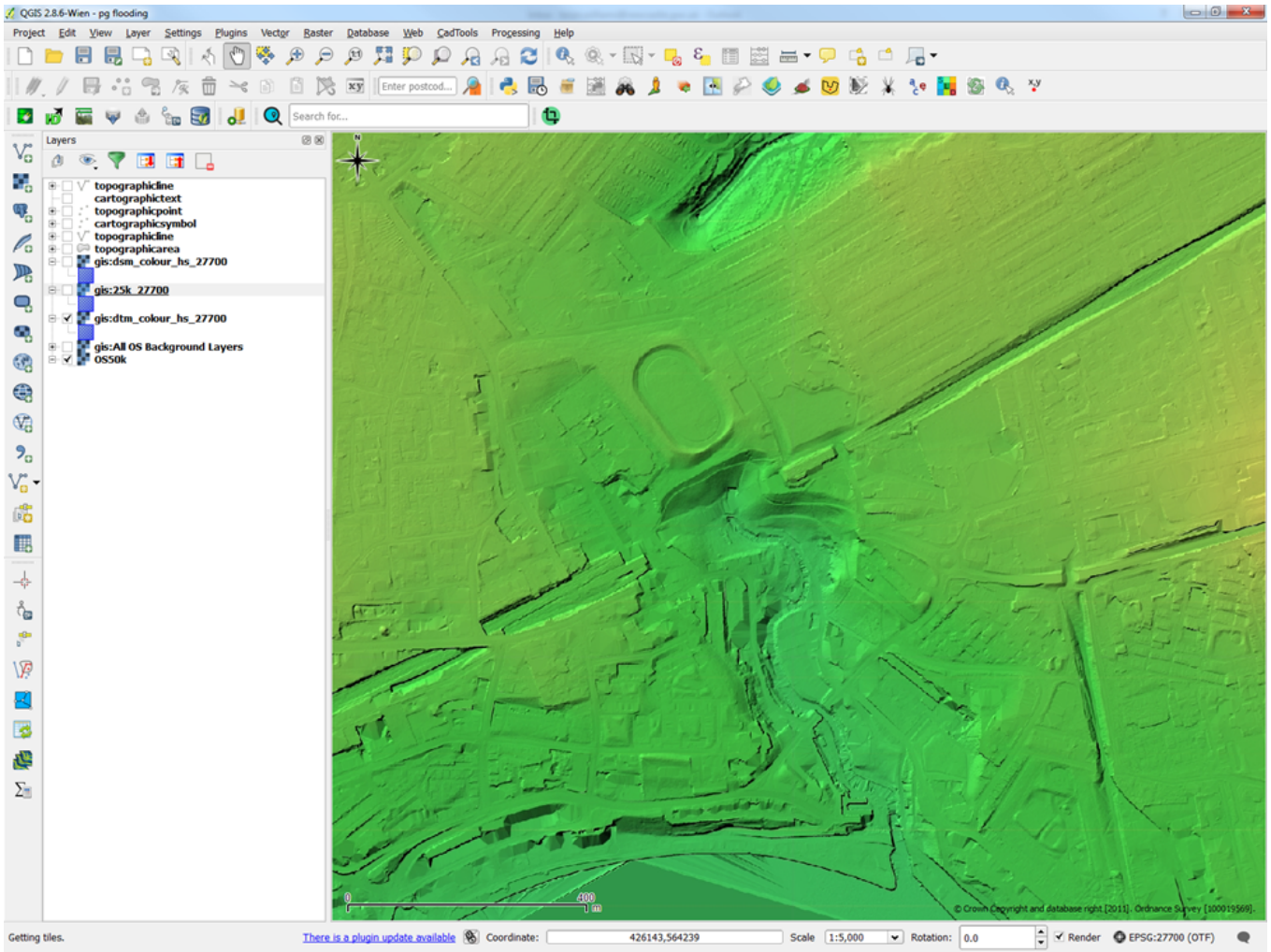
Benefits

Cool plug-ins



Benefits

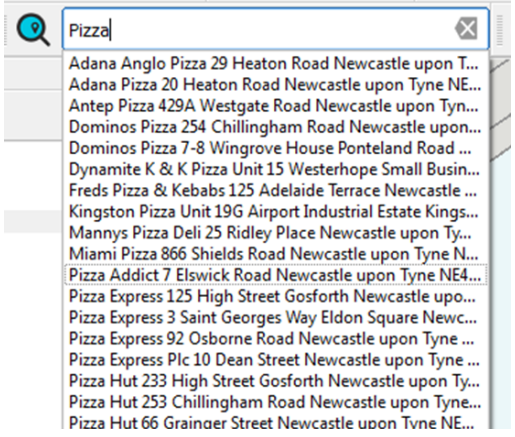
Powerful tools - GDAL/OGR



Benefits

Wider benefits

- Any code developed by Lutra will be available through an open source type licensing arrangement (GNU General Public License).
- E.g. Gazetteer Search (Discovery)



Discussion Points

Limitations

- Functionality available in extensions (Spatial, 3D, Network Analyst)
- Support for CAD (DWG is supported)
- Mobile GIS
- Advanced editing (e.g. topologies)
- Advanced cartographic design

Discussion Points

Conclusions

- QGIS and the open source SDI has matured and is a viable alternative to propriety GIS
- Open source does not mean **'free'**
- A new business model
- 3rd party Support to reduce risk and provide knowledge
- Opportunities exist to collaborate and share knowledge / code
  - (hence this group)

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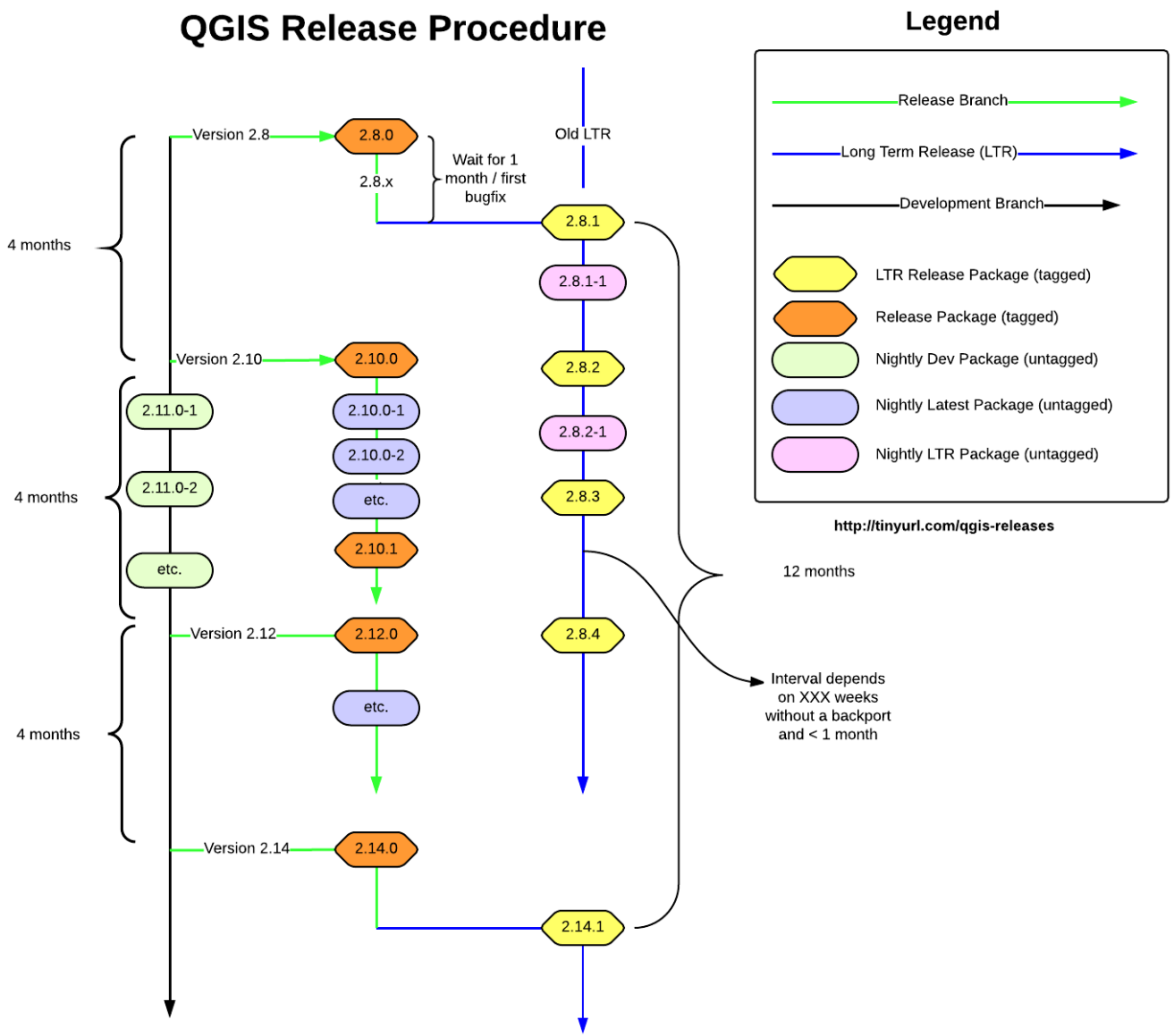
- WebGIS and Geoserver

QGIS

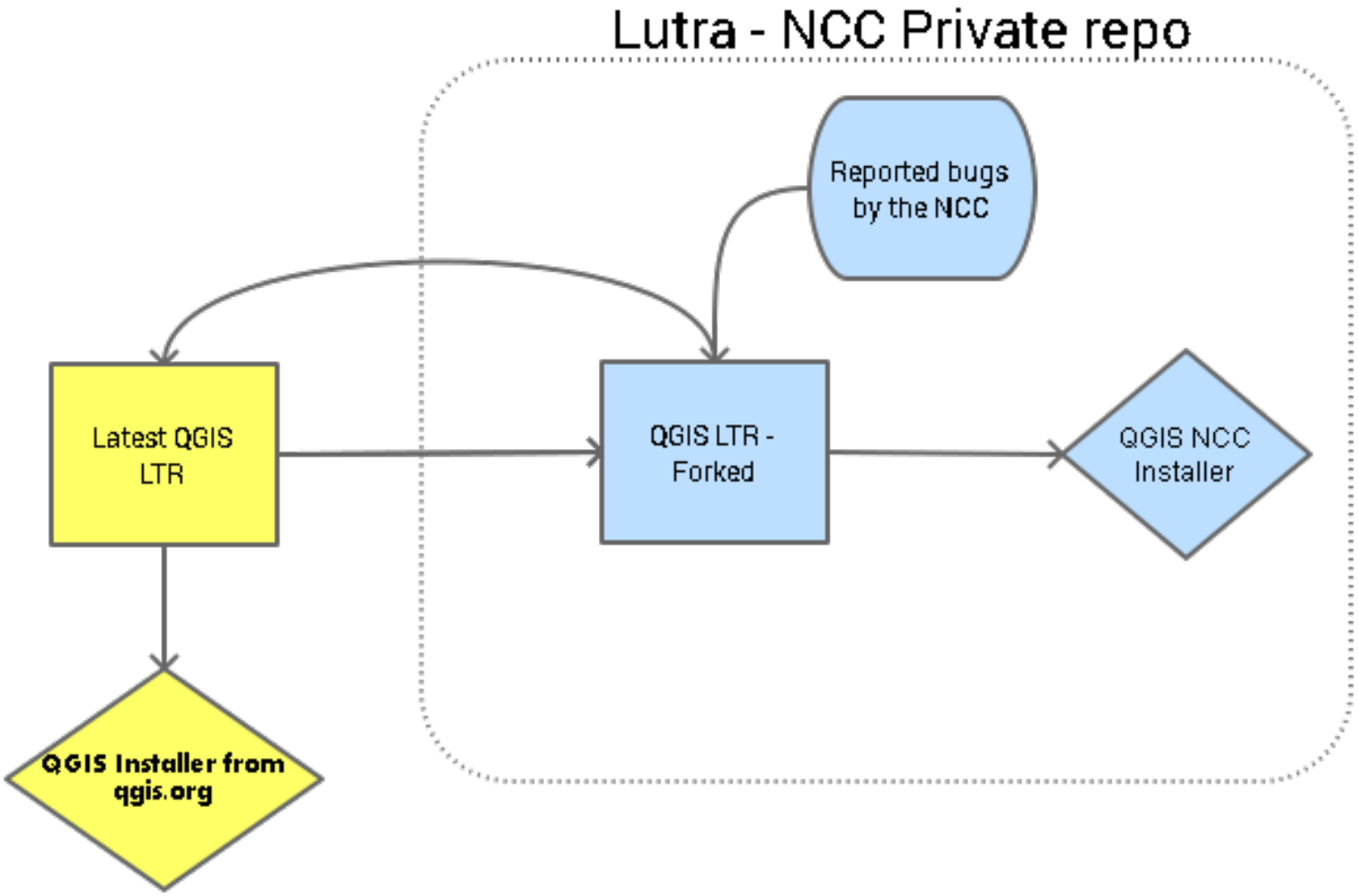
Requirement

- General mapping and analysis
- Basic settings and configurations
- Print templates
- Specific tools and plugins
- Connections to various OGC services
- Support and training

QGIS installer



QGIS installer



QGIS installer

Advantages

- Reported bugs by the NCC get sorted quicker
- Installer is independent of the main QGIS packages
- Reported bugs backported to the main QGIS

QGIS installer

Fix crashes when rendering with SVG symbols that are missing

The crashes would happen after some time when browsing the map,
especially when size of SVGs is in map units. This was due to wrong
removal of deleted cache entries where cache entry key would be
different from SVG file's path, thus not removing the entry that
got deleted. Now explicitly keeping the lookup key in the entry
to make sure this does not happen.

Related issues: #9959, #8883

master

wonder-sk committed on 31 Jul 2015

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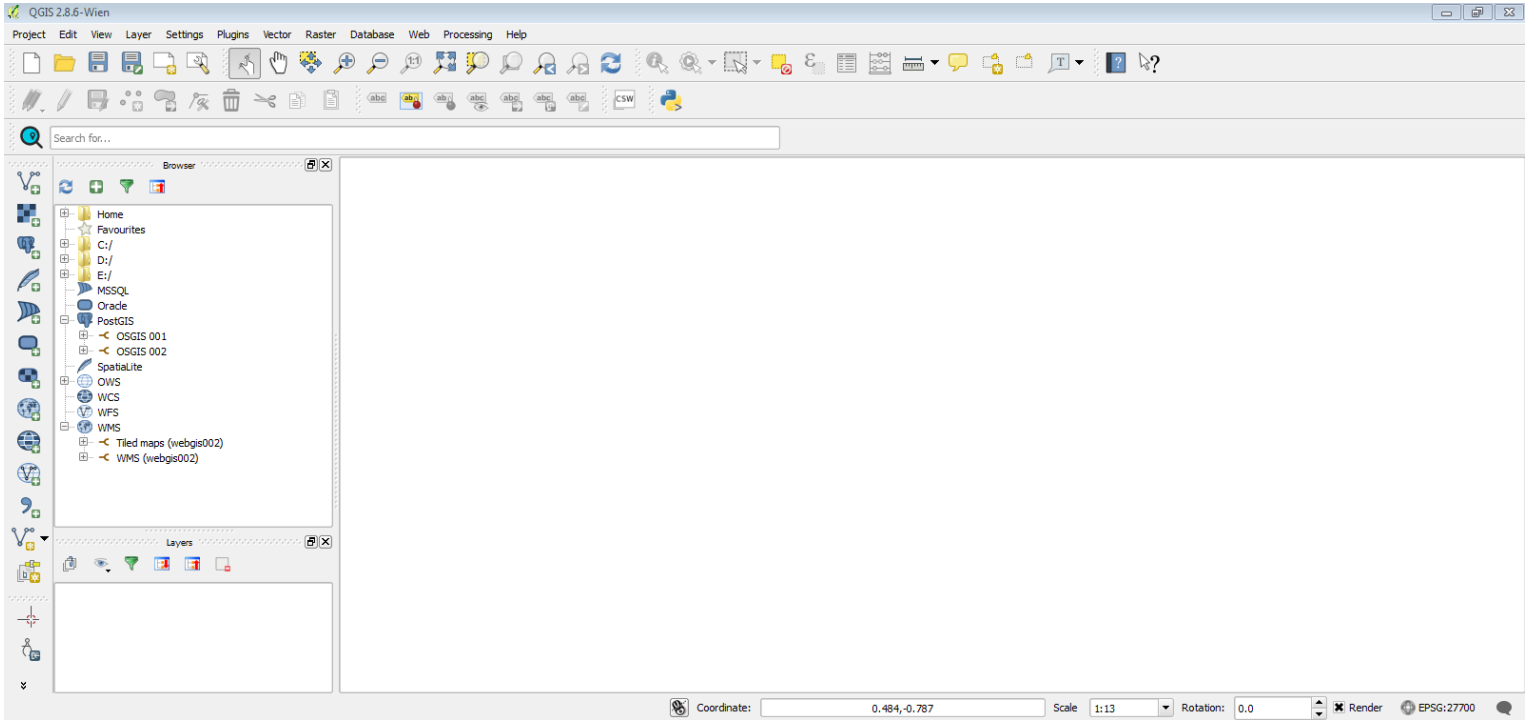
QGIS installer

Customisations

- Default CRS
- Proxy settings
- Connection to PostGIS
- Connection to WM(T)S

QGIS installer



QGIS installer

Newcastle City Council

Supported by Lutra CONSULTING

Support

Major bugs resolved

- Active Directory/user permissions to run Processing
- Issue with 32-bit GDB file

Plugins

Discovery

- A QGIS plugin
- Using address database from PostGIS

Plugins

Discovery - in action

Training

Training for:

- New to GIS
- Existing ESRI users

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- WebGIS and Geoserver

Migrating data

- OS Translator II
- ogr2ogr scripts

Migrating data

- Test server
- Main server
  - with back-up / restore script

Sync tool with ArcSDE

- Waiting for ESRI support (1 year!)

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Geoserver

WebGIS

A simple webmap to:

- Publish select council datasets to the public and council staff
- Provide a means for staff to self-serve address data

WebGIS

Key features:

- Find my nearest tool
  - school(s)
  - customer service
- Gazetteer / search
- Produces printable PDF
- Download data

WebGIS

Implementation:

- All running on MS Windows
- PostGIS
- Geoserver + Geoserver Printing module
- Bespoke back-end services for
  - Find my nearest
  - Gazetteer
  - Download
- OpenLayers3