QGIS Cloud

Overcoming information sharing and data visualisation boundaries in multi-agency working through the use of collaborative WebGIS platform.

Figure 1. ResilienTogether QGIS Cloud web portal

ResilienTogether

ResilienTogether is creating a Smart Catchment, through innovative technologies and techniques, to reduce flood risk to people and places, enhance the water environment in the Pix Brook catchment and improve community resilience in the face of climate change.

The project is achieving this through a close-knit partnership that collaborate to deliver six inter-related work packages. This case study relates to all work packages and the wider project as GIS is used to create, manage, analyse, share and map all types of data. It improves accuracy of communications, enhances efficiency and informs decision making in project work and across the flood risk sector.

Challenge

Early on in project delivery, inefficiencies were encountered arising from there being no single location that project partners could access to view and comment on geographical data. This resulted in duplication of efforts and repeated sharing of large data files. A solution was required that would enhance collaboration by spanning the technological boundary between partner organisations.

Innovative Solution

Utilising QGIS Cloud is an innovative approach to multi-agency collaboration that overcomes data visualisation and sharing boundaries by offering a place for partners to view geographical data and collaborate together.

QGIS is a widely used desktop application (similar to ArcGIS) used by many organisations. It is open source and free for businesses to use.

QGIS Cloud Pro is a low-cost Web-GIS platform used for publishing QGIS projects on the internet to securely share spatial data with a chosen audience.
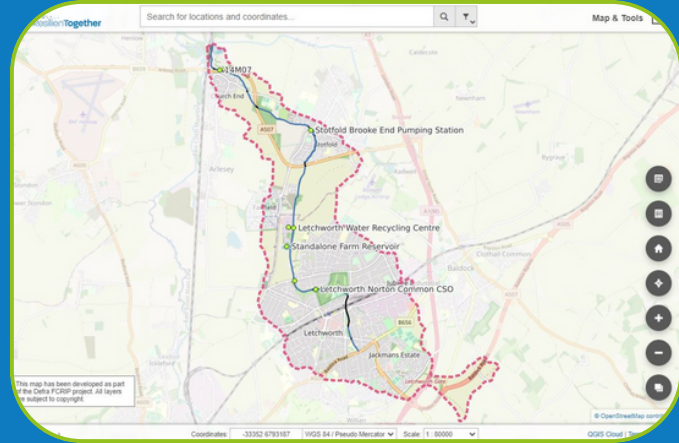
For a £55.50* monthly subscription fee to host, and free for users to access, QGIS Cloud Pro allows for:
- Sharing of maps and WMS with restricted access
- SSL support
- 10 PostGIS 3.1 databases (max. 500 MB total)
- Daily database backups
- Editing in WebGIS client
- Viewer customisation (e.g. logo).

There are also options for additional storage, additional databases and custom domain names.

Benefits

1. Data sharing

QGIS Cloud overcomes usual data sharing boundaries. This was enabled by an open approach from partners to sharing data and established data sharing agreements.

2. Multi-agency collaboration

The ResilienTogether QGIS Cloud is a space where all organisations involved can view the same data. It can be utilised in meetings and workshops, providing valuable information that will inform delivery of the technical working groups' objectives.

3. Legacy

QGIS Cloud has functionality beyond the lifetime of ResilienTogether, allowing for continued data sharing and collaboration between the stakeholders and partners continuing to enhance the Pix Brook.
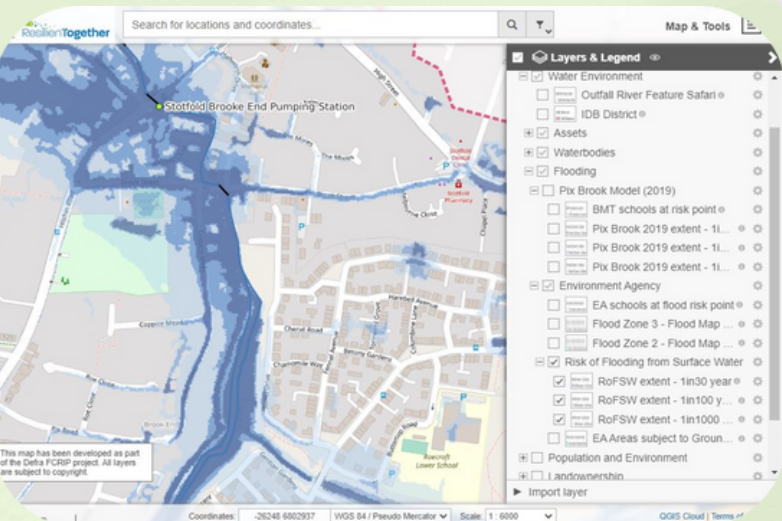
*As of June 2023, converted from euros, see https://qgiscloud.com/

# INNOVATION

Figure 2. Risk of Flooding from Surface Water dataset

The ResilienTogether Web-GIS map is free for partners to use. They just need to be given access by an administrator and provided with a secure log in. Those with access will be provided with a link to view the map in their web browser (Figure 1).

The ResilienTogether WebGIS map has functionality beyond the lifetime of the project. While preparing the online map for ResilienTogether, JBA Consulting produced a methodology on setting up the desktop QGIS Cloud Plug-in, creating a desktop QGIS map and publishing maps. This will be a legacy product used for future collaboration in the Pix Brook.

This innovation was enabled by an open approach to sharing data by partners and established data sharing agreements. While access is restricted to permitted users, layers containing sensitive information have been excluded to ensure all content shared is covered by data sharing agreements and complies with GDPR.
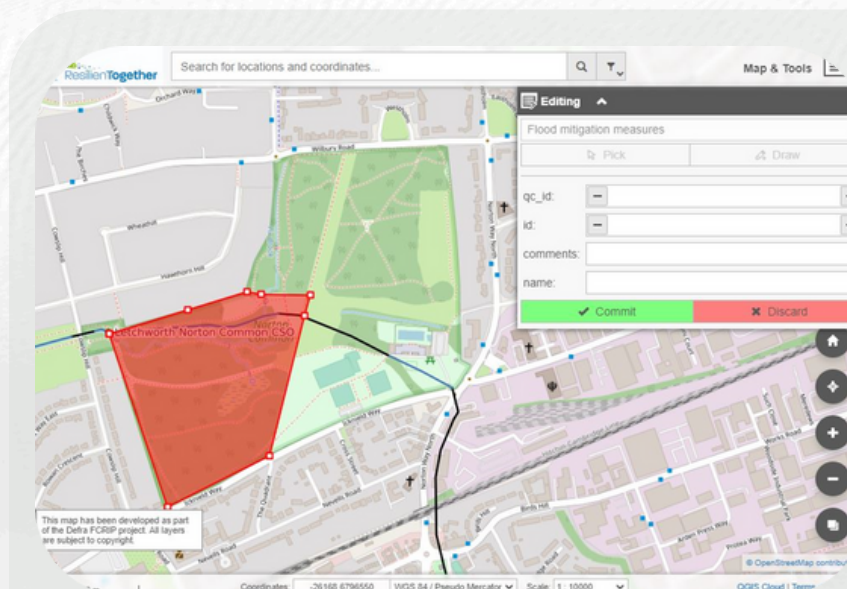
To ensure the ResilienTogether Web-GIS map was fit for purpose, the layers included were only those deemed to provide information relevant to delivery of the technical working groups' objectives (Figure 2). Layers that 'might be useful' were trimmed. This ensured users were met with a intuitive and organised platform that loaded quickly.

The layers in the map are created and symbolised in the linked QGIS desktop workspace, where edits can be made and published. The size of layers were kept to a minimum to maximise loading speeds and optimise the user experience. To keep individual layer sizes to a minimum, data is mainly in vector format (e.g. shapefiles).

Within the web portal users can click on layers for properties, draw new shapefiles on the map live using editable layers (Figure 3) and print simple maps. Data analysis, adding new layers and editing of locked layers cannot be done online. This can be done within desktop QGIS by administrators when needed.

Figure 3. Editable layers being used in a workshop to map out potential locations for SuDS retrofit

Melody Burgess

ResilienTogether Project Support - JBA Consulting

"This product overcomes the barriers of data sharing we were previously facing. With no more massive zipped files sent over email. QGIS Cloud offers a location where everyone can view the same data in the same way. It is also ideal for hosting interactive workshops, with live high definition maps."

Use Our Learning

We encourage and offer our learning to be adapted and used across the country by Lead Local Flood Authorities (LLFAs) who are seeking to enable more collaborative and efficient cross-agency working and overcome data sharing boundaries.

If you want to hear more, please contact ResilienTogether.project@Centralbedfordshire.gov.uk or visit our website https://resilientogether.org.uk/