

Flood risk and riparian ownership analysis

London, England

Project:	GIS Analysis of flood risk and riparian ownership
Location:	Stockport
Client:	Stockport Homes Group

PROJECT BRIEF

Stockport Homes Group (SHG) are responsible for circa 11,750 homes in the Stockport area of Manchester and required a greater appreciation of flood risk issues presented to their portfolio. Given the large number of addresses to assess, a GIS analysis was best suited in enabling SHG to refine their focus on key properties where flood risk mitigation might be most needed. SHG also had a limited appreciation of surface water flooding and their riparian responsibilities (obligatory maintenance of watercourses and culverts).

Using data from various sources and property location data, Enzygo were able to carry out analysis on all of SHG's properties in quick order and present additional information in their property database to understand statutory flood zones for rivers and surface water flooding. A refined database of properties with the potential for riparian responsibilities was also formed, feeding a Stage 2 analysis which then looks to interrogate title boundaries for individual addresses.

WHAT WE DID

Enzygo collated available flood source information from the Environment Agency in relation to river and surface water flooding to cover the entire portfolio area of SHG. Utilising freeware GIS software QGIS (to allow easy manipulation of data by the client if required in future), centroid point data provided by the client for OS locations of all addresses was compared to the location of known flood zones. This provided additional columns of raw spreadsheet data that can be sampled by SHG when required. Furthermore, Google powered mapping was created on a web-based platform (cluster map) to enable the client to view data outputs on a web browser without any specific knowledge of GIS software. This ensured greater visibility of the data by all SHG staff and thus greater awareness of key flood risk issues to affect properties of interest and those adjacent, from all departments.

In addition to the flood risk sources analysed, an appreciation of possible riparian ownership and associated responsibilities was also established. A simple buffer of all known watercourse/culvert centrelines (data as provided by Stockport Council and the Environment Agency), allowed us to establish if the location of properties of interest were possibly near watercourse/culvert assets. This allowed a further analysis with title boundaries of some properties to further understand if assets reside within actual ownership boundaries.



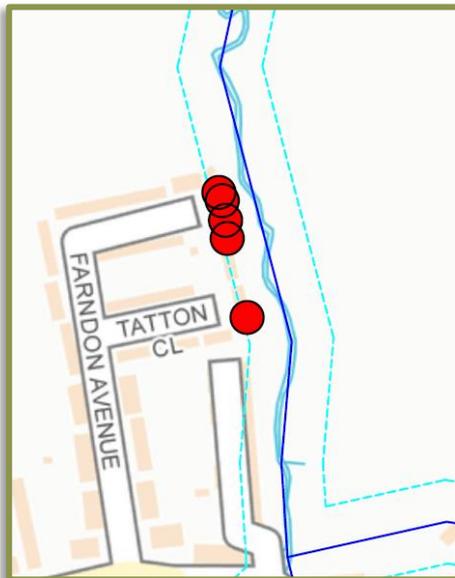
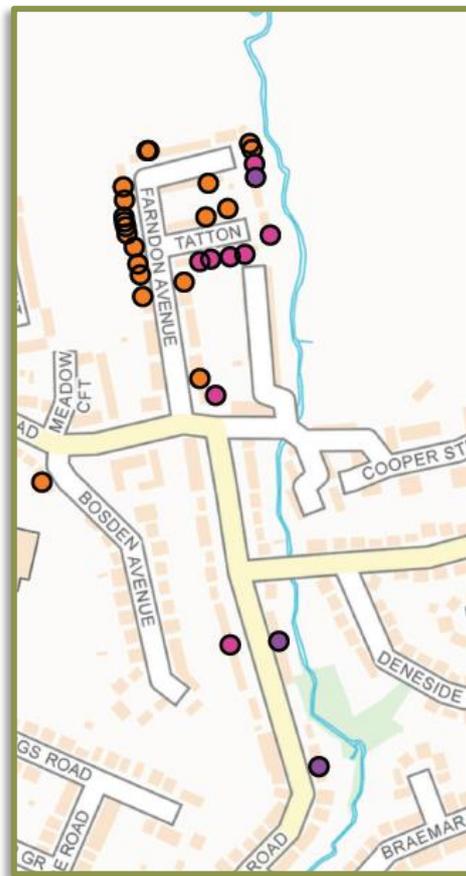
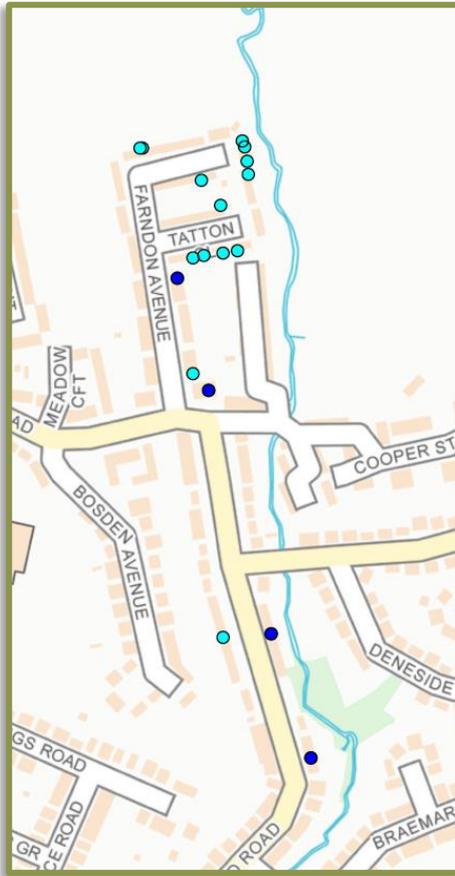
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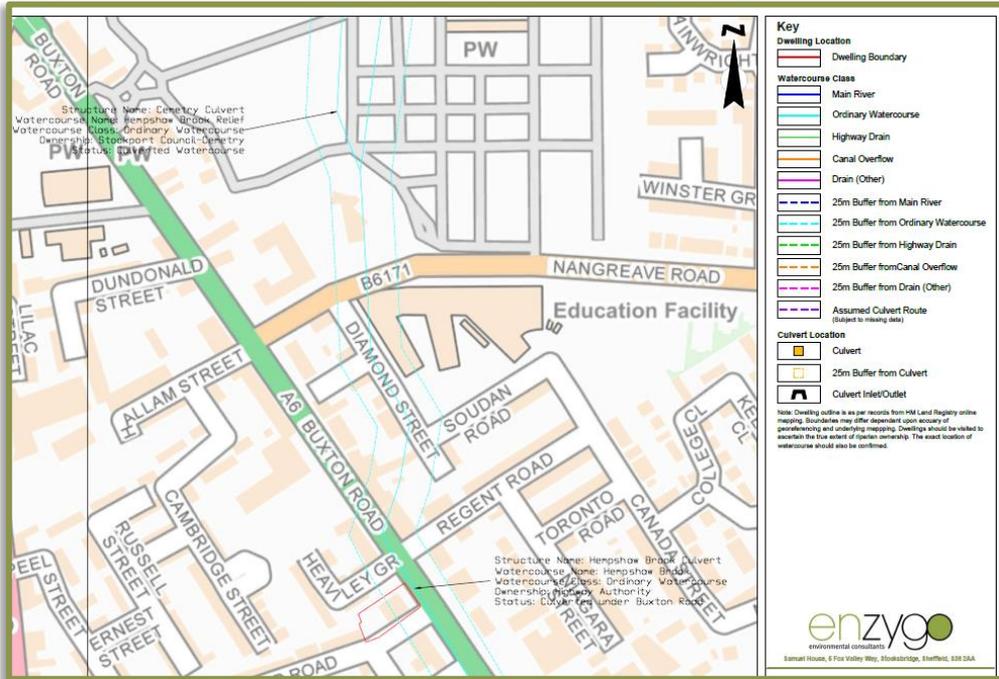
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WHAT WE ACHIEVED

An easy to use data base and mapping output that all staff at SHG can use to quickly ascertain key flood risk and riparian ownership information for any given property of interest. Furthermore, a greater awareness of flood risk affecting properties that may otherwise not have been considered for possible flood mitigation and management in future (e.g. those properties at medium to high risk of surface water flooding).

FURTHER WORK

Enzygo are in the second phase of works, adding information on flood depth, velocity and hazard for key properties known to be within the zones of river and surface water flooding. Furthermore, a refined analysis of properties closest to or encompassing watercourse/culvert assets is under way. The outputs of these stages will also utilise the established web-based mapping platform to ensure this refined information is as easily accessible as all other outputs to date. Enzygo will then look to work with SHG on possible mitigation for key properties, including the implementation of our high-quality flood evacuation knowledge, training and documentation.



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