

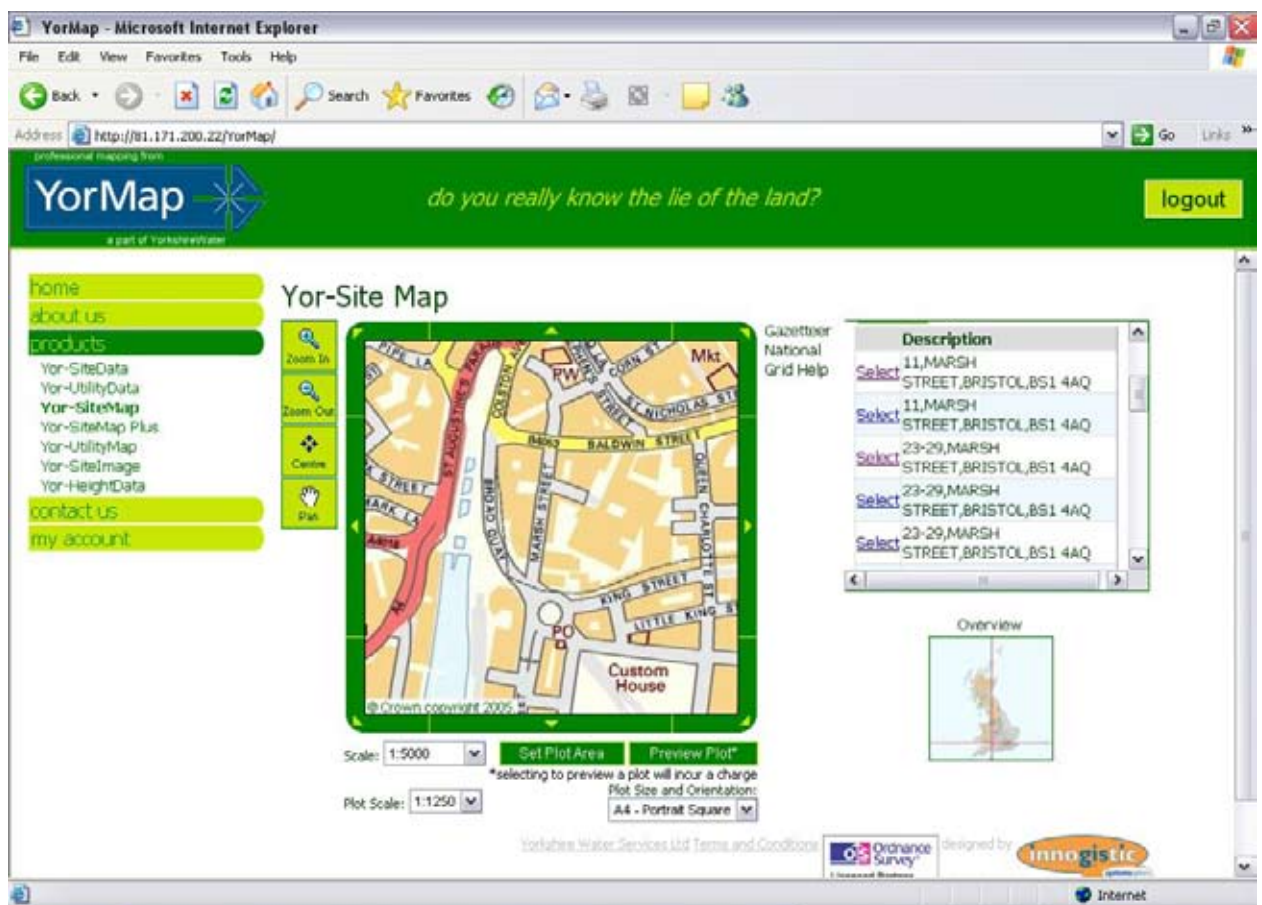
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Case Study: Sharing Utility Data On-line at Yorkshire Water

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Sharing Utility Data On-line at Yorkshire Water

Yorkshire Water, like other utility companies, are required to share detailed mapping data of their underground assets with other utility companies and relevant authorities. To satisfy these requirements, Yorkshire Water have launched an on-line service, known as YorMap, which generates additional revenues through the commercial supply of mapping data.



A Case Study at Yorkshire Water

Used by over 2000 staff and tightly integrated with other key IT systems and business processes, Yorkshire Water's Geographic Information System, is a truly corporate solution. From improving customer service, delivering works management efficiencies, and helping protect the environment, the use of the GIS at Yorkshire Water is widespread (see separate case study).

As with other utility companies, Yorkshire Water are required to provide detailed maps of their assets to other utilities and authorities. Traditionally Yorkshire Water have met these objectives by operating a costly bureau service which prints and distributes hardcopy output from their GIS. Working with Innogistic, their GIS supplier, Yorkshire

Water have now launched a new online service known as YorMap (www.yormap.co.uk), which supplies electronic maps and data direct to the end user. Before looking in detail at the on-line service, it is perhaps worth a mention of the background to YorMap.

YorMap

Yorkshire Water's innovative use of GIS continues with the launch of a new on-line service (www.yormap.co.uk). YorMap is another example, of how Yorkshire Water is maximising the returns on the investment which it has put in to its GIS infrastructure.

Some readers may already be familiar with the YorMap service, which has been running for a number of years

as a 'bureau' service out of Yorkshire Water's offices in Bradford. The new service, developed in conjunction with Innogistic, brings YorMap on-line, hence reducing the costs of operating a bureau.

A matter of life or death?

For reasons of health and safety, a regulated requirement of any utilities company is that accurate geospatial records of its assets be made available to other utility companies and local authorities. Put simply, before digging a hole in the road, it is essential to know what is underneath before starting up the pneumatic drill. The consequences of drilling through a water main, sewer, electricity cable or gas main do not need spelling out!

The primary purpose of the YorMap service is therefore to provide access to geospatial records of Yorkshire Water's underground assets to third parties in order to fulfil its regulatory commitments. Whilst Yorkshire Water is not permitted to charge for the supply of this information to local authorities and other utilities, that is not to stop them from doing so as a non-regulated business activity to other third parties who may have a commercial interest in the same information - surveyors, solicitors, construction contractors etc.



Recoup the costs

The smart move on Yorkshire Water's part has been to design YorMap as a commercial service, and meet its regulatory responsibilities by providing free accounts to those organisations required by law to have access to the utility data for reasons of health and safety. In effect, Yorkshire Water is meeting its regulated responsibilities by providing a service which it needs to anyway - and maximising the return on investment by exploiting it as a non-regulated commercial activity.

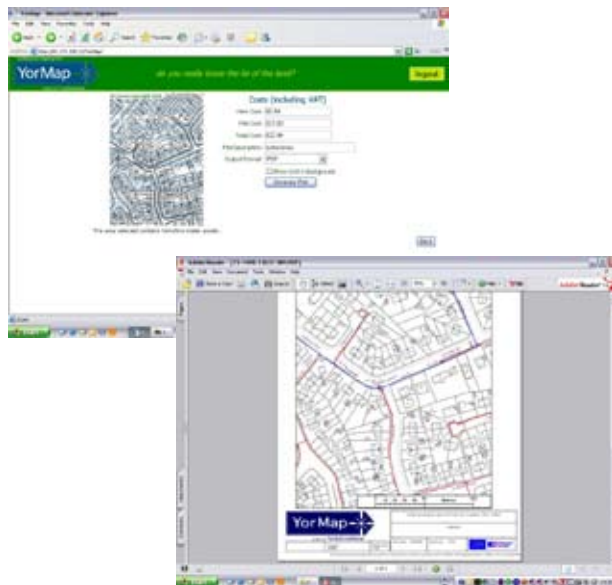
The smart thinking at Yorkshire Water goes a step further by recognising that the utility data itself is not the only commercially valuable commodity that can recoup some of this investment. While the locations of the mains and sewers are of limited value without the large scale base mapping underneath, the reverse is not true - the base mapping itself is another product for which there is a commercial market, irrespective of whether the utility data is supplied with it. Indeed, for this reason, Yorkshire Water has extended the geographical scope of the base

mapping provided by the service to all of Great Britain and broadened the scope of the product range beyond large scale topographic data (based on OS LandLine and OS MasterMap products) to include height and imagery data also.

YorMap products

YorMap's range of products may be divided into data products and map products. Data products, designed for use with GIS and CAD packages are supplied in DXF and DWG formats. The Yor-UtilityData comprises of digital detail of the water and sewer network, overlaid on OS LandLine base mapping. The Yor-SiteData comprises the base mapping only, and is a DXF/DWG rendering of OS MasterMap, is represented as a distinct layer within the file, structured in polygonal format, as in the original OS MasterMap data. Yor-HeightData, and Yor-SiteImage are additional height and imagery products available via the bureau and coming on-line soon.

Map products are available either in printed hardcopy format via the YorMap bureau, or as high resolution PDF's suitable for printing by the end user. Map products include all the relevant marginalia (scale bars, north arrows, titles etc.) which are typically excluded from the data products, but are otherwise largely equivalent - Yor-UtilityMap (with water and sewer networks), Yor-SiteMap (without), and Yor-SiteMap Plus - a customisable version of the Yor-SiteMap.



Cost-effective technical solution

Delivering a cost-effective service in a competitive market requires a cost effective technical solution. Keeping costs in check in the delivery of the YorMap service has been achieved through the innovative use of Geographic Markup Language (GML).



The notion that managing national repositories of OS MasterMap data is only possible using a spatial database infrastructure, is a common misconception in the UK GIS market. At the heart of the YorMap service is FasterMap, a product from Innogistic, which provides national support for OS MasterMap data, by leaving it in the highly compressed GML format (gz) shipped by the Ordnance Survey. Not only does this keep data volumes low (full GB coverage for OS MasterMap Topographic layer in approximately 62GB), but it negates the need for costly spatial database licences, import tools, database administration overheads etc, that could soon have seen the costs of the YorMap service spiralling out of control.



Managing the data

The use of GML for the YorMap service extends beyond OS MasterMap to include the water and sewer network data available on YorMap. As Yorkshire Water does not directly host the YorMap service, maintaining an accurate and up to date record of the networks on the YorMap service, which reflects the latest information held in Yorkshire Waters master asset database, is a key priority.

The solution has been to take a leaf out of the Ordnance Surveys book! An advantage of storing the water and sewer networks as compressed GML on the YorMap server, is that it can be kept up to date by publishing 'change only updates' in GML from the master data repository at Yorkshire Water's offices to the YorMap server. Indeed the same mechanism is used for keeping all of Yorkshire Waters Toughbooks (rugged mobile computers), up to date in the field - a subject which could fill another article of this length alone.



Conclusion

Strange though it may seem, a utility company whose raison d'être is the supply and distribution of clean water and treatment and disposal of waste water, is also in the business of providing on-line mapping and data services. YorMap represents another example of innovative thinking at Yorkshire Water, which is ensuring that the organisation is maximising to its fullest potential its investment in GIS.

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