

# Migration to OS MasterMap: a first for Forth Valley



Set up in 1996 with the aim of securing best practice GIS services for the sponsoring councils, Forth Valley GIS provides corporate GIS services to three neighbouring local authorities in Scotland. The ability to centrally manage map data fits well with the unit's objectives of maximising the potential of geographic information in providing public sector services, while also supporting cost-effective service delivery. The advent of OS MasterMap® offered Forth Valley GIS a great opportunity to enhance service delivery to the partner councils, so the decision to migrate to the new map data was taken relatively early.

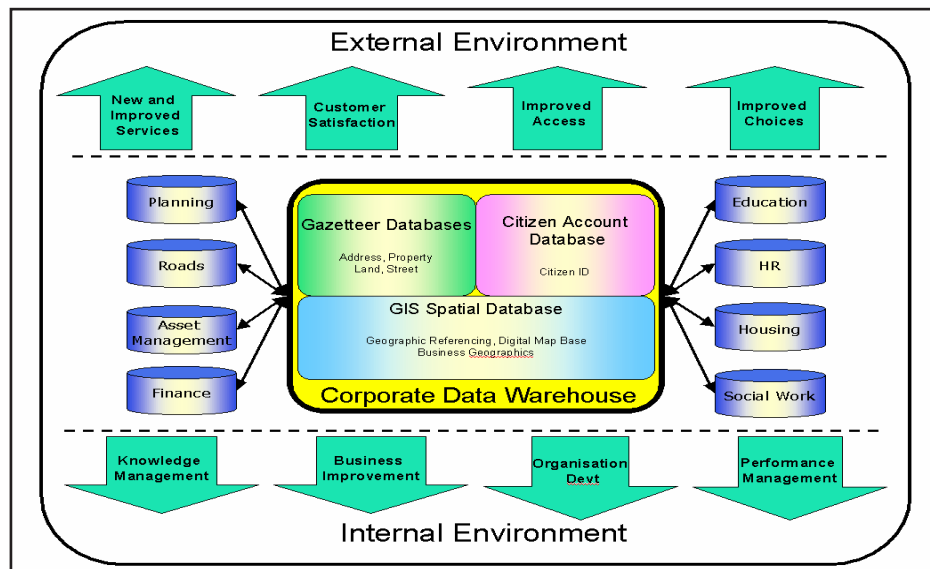
organisations in Scotland, which has helped FVGIS develop a reputation for delivering best practice solutions. At an early stage, the partner councils recognised the value of GIS provision as an important step in the modernisation process, providing a foundation to integrate and improve the efficiency of service delivery in public sector organisations, through linking to address gazetteers, citizen databases etc.

## The need for a corporate GIS approach

The FVGIS team initially developed a range of customised ArcView desktop GIS applications which have been used by over 300 users in the partner Councils. However, most of the geographic data was still held locally

“We surpassed all our expectations for our OS MasterMap implementation, which was completed in January 2004” reports Alan Moore, head of Forth Valley GIS. “We took a rigorous approach to project management and although we spent a lot of time preparing, our planning paid off - so much so that we are already starting to see the payback from our investment. We made informed decisions about project partners and systems architecture, which allowed us to maintain progress and keep to tight deadlines. Importantly, we now have a key resource in place that is scalable, configurable, interoperable and ‘open’ enough to fit the current and future requirements that we can foresee in the next 2-3 years.”

Forth Valley GIS (FVGIS) was established to deliver corporate GIS services to the three partner authorities of Clackmannanshire, Falkirk and Stirling Council as a result of re-structuring of local government in Scotland. Rather uniquely, the unit also provides external services to other local government and public sector

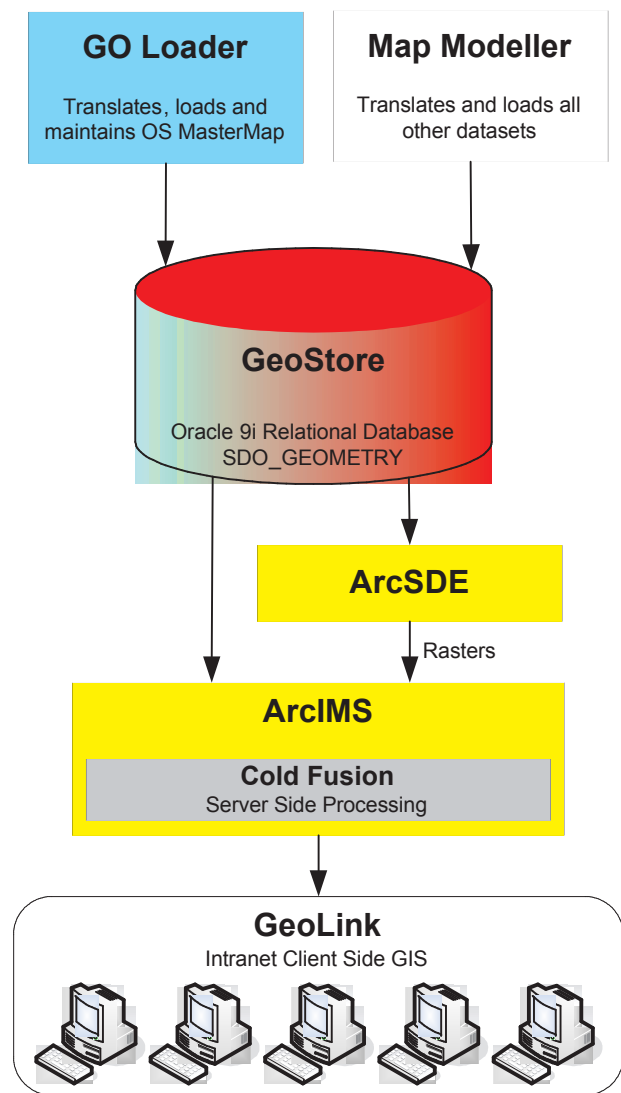


and maintained separately within each Council. More recently FVGIS began to develop solutions for tri-council initiatives, (e.g. in planning, corporate property and estate / asset management) and these newer applications were served using SQL server, ArcSDE and ArcIMS from corporate infrastructures within each Council. Faced with:

- the high costs associated with further rollout of desktop solutions,
- the opportunities presented by improved web GIS technologies,
- the drive to implement OS MasterMap and improve the efficiency of data management services,

the team were able to identify clearly benefits to be gained from corporate web-GIS with centralised data management.

In 2002, a three year development programme was initiated, with the core project focus on consolidation into a hosted service model for corporate data provision. A more robust and sustainable data management strategy and infrastructure was needed to support the roll-out of corporate web-based GIS to the three councils. The first step was the development of a central spatial data warehouse, driven by the decision to centralise hosting of OS MasterMap. FVGIS decided to migrate from SQL server to Oracle for the database management system. Similar to many local authorities, the partner Councils had implemented a range of specialist desktop GIS applications from different vendors over



the years, which FVGIS was required to support. A key advantage of centralised data and OS MasterMap is that users of multiple GI systems can gain access using their required application – ESRI, CadCorp, Autocad and UNI-form in the case of FVGIS. However, the principle advantages to FVGIS are one centralised datastore (instead of 17 separate file-based systems) and the ease and speed with which the data can be managed and maintained using change-only updates.

To ensure best value in the selection, development and implementation of the centralised database and architecture required, FVGIS researched similar solutions elsewhere and brought

together key partners to assist with the project. GIS Technology Co-ordinator, Craig Walker, confirmed that:

“Working with partners such as Snowflake Software, OS, Compaq, Oracle, partner Councils and combining this with the knowledge from within the FVGIS team has worked extremely well on this project and we would hope to develop these relationships further in the future.”

### Evaluation of load tools for OS MasterMap

FVGIS needed an implementation capable of supporting a mixture of GIS applications: ESRI ArcIMS, CadCorp, Autodesk and UNI-form. The FVGIS

evaluation of loading tools was fast and thorough. Initial research from the OS website and other sources had identified four tools that were compatible with Oracle and would fit with the key business requirements. From the outset, FVGIS were concerned to meet five specific requirements:

- Speed
- Robust change-only update capability (including archiving)
- Scalability
- Ease of use
- Minimal supplier dependency.

For the next stage of evaluation, the potential suppliers all ran product demos and were asked to complete a questionnaire covering areas such as support, supplier dependency, project control and future development. A key issue for FVGIS was also the relationship with the data supplier – the load tool vendor had to be an OS Licensed Partner. Other key issues under consideration were cost, functionality and support.

*“During our evaluation, we found GO Loader was faster by a factor of four... We are now running monthly COUs”*

Fiona Thomas, FVGIS

Fiona Thomas GIS Data Co-ordinator at FVGIS takes up the story:

“We had to identify the right translation tool quickly. To meet our ambitious project deadline, we needed something

*“Oracle has worked very closely with Snowflake and the OS to enable organisations like Forth Valley GIS to exploit OS Mastermap effectively. This implementation is a great example of how three local authorities have been able to improve service delivery by integrating map data with their existing data into a single integrated database, all linked to a web based portal. Oracle views its partnership with Snowflake, Forth Valley GIS and the OS as crucial components in this successful project. The flexibility and ease of use of Snowflake's GML tools have been a major factor in the success of this project.”*

Mike Turnill, Principal Product Manager, Oracle Corporation:

that worked right first time. We wanted reliability in order to maximise the value from our investment, particularly as we attach a high cost to time spent unnecessarily sorting out data. Looking ahead, it was important to us that the solution reduced any risk and dependencies. After tests and consideration we chose GO Loader from Snowflake Software. We liked the open architecture, the control and due to Snowflake's previous links with the OS, we had great confidence in the product. During our evaluation, we found GO Loader was faster by a factor of four. Since GO Loader reads GML generically, if there are any new data schemas we do not need to wait for new software releases, reducing our supplier dependency.”

### **Migration to OS MasterMap in weeks**

Evaluation started in November 2003 and a decision was soon reached. By January 2004, FVGIS were up and running, completing the first OS

MasterMap load in under an hour. Since then, monthly change-only updates have been completed. Fiona Thomas continues:

“Learning how to use the product took us a couple of hours and we loaded 2 million features for the tri-Council area in 40 minutes. When we set out we had expected that it would take a couple of weeks! Now we run monthly change-only updates successfully, in minutes. We are now looking ahead to loading OS MasterMap ITN data with confidence and feel that we can maximise investment return on our migration by focussing on product benefits and our users.”

### **A ground-breaking year**

After the planning, an intensive 12 month period saw full implementation and integration of the Oracle spatial database (known as “GeoStore”) and the new intranet GIS portal (“GeoLink”). From start to finish, evaluation and selection of load tool, as well as the



actual load process was completed in just weeks.

The "GeoLink" GIS portal was officially launched in May 2004 and is able to handle 25-30 concurrent users and 12,000 enquiries per minute. Looking to the future, FVGIS expect to provide public access to map data, so the web portal and architecture have been developed as a foundation for future applications. Altogether FVGIS now manage 50 external datasets and more than 150 internal datasets.

With reliable data and a flexible loading tool in place, the FVGIS team is now free to focus fully on delivering the benefits envisaged from corporate GIS. Significant new projects include the creation of a Corporate Address Gazetteer, integrated with OS MasterMap.

As Alan Moore concludes:

"We can forget about GO Loader because it worked so well. Now we are focussed on delivering the benefits of good data management and GIS integration to our clients. We are glad we put the effort into planning, although we think maybe we could do it quicker next time!"

*"Snowflake's work is a prime example of one of our Licensed Partners creating products and services based on OS MasterMap. Their innovative solutions are helping to unleash the power of this new generation of geospatial information. The potential benefits for local government that can be realised from OS MasterMap as the underpinning geographical framework for the nation are enormous."*

Vanessa Lawrence, Director General and Chief Executive, Ordnance Survey.

### GO Loader statistics for Forth Valley GIS

- Approximately 2 million features covering three local authority regions
- 40 minutes load time including duplicate removal and building all indices.
- COU applied monthly and completed within the hour

## About Forth Valley GIS

Forth Valley operates as a single unit providing corporate GIS services to the neighbouring local authorities of Clackmannanshire, Falkirk and Stirling Council. Forth Valley GIS also provides high quality services to other local government and regional organisations.

Solutions have been developed and implemented to cover many of the local authority main functional responsibilities, with FVGIS providing desktop and intranet GIS application development, data management, technical and strategic consultancy, project management, support and training.

<http://www.forthvalleygis.gov.uk/>

