

Title of Report:	Report on Geographical Information Systems (GIS)
Report to be considered by:	Resource Management Working Group
Date of Meeting:	26 July 2011
Forward Plan Ref:	

Purpose of Report: To update the Resource Management Working Group on the current situation with regard to GIS.

Recommended Action: The Resource Management Working Group notes the ongoing work of the ICT service in developing GIS.

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Executive Report

1. Introduction

- 1.1 The Council's Geographic Information System (GIS) is a corporate resource that is used and integrated into a number of service areas and applications. It is typically used to manage assets and processes that have a physical location. Through graphically capturing this location data we are able to visualise and understand local geographical issues, analyse any constraints to a process and report on proximity to other features. The simplest examples might be: *Is a planning application in a conservation area? Or How far a pupil is from a specific school?* GIS plays an important role in efficient decision making across a number of applications.

2. The application of GIS within West Berkshire Council

- 2.1 GIS is integrated and utilised in several service areas to perform specific functions. A summary of these uses are outlined below:

Service Area/Team	Application of GIS
Education	Used for assessing Home to School Transport and Pupil Admissions (One/EMS)
Planning	Processing of Development Control applications, assessing constraints to Planning and the processing of Building Control applications (Uniform)
Planning Policy	Used in assessing and generating Local Plans and Local Development Framework policies
Highways & Transport	Management and maintenance of Highways, Street Lighting and Bridge Maintenance (WDM) Management of Street Works (Mayrise), integration with CAD and monitoring Traffic & Road Safety incidents (AccsMap)
Archaeology Service	Management and maintenance of the Authority's Sites and Monuments Record (HBSMR)
Property	Council Property Asset Management
Environmental Health	Management of EH records including Contaminated Land (Uniform)
Public Rights of Way	Management and maintenance of PRoW (CAMS)
Grounds Maintenance	Management and maintenance of TPOs, Council Trees, Council Land
Emergency Planning	Emergency Planning Response
ICT	Management and maintenance of the Authority's Local Land and Property Gazetteer and National Street Gazetteer
Legal	Processing of Land Charge searches (TLC) and management of Common Land, PRoW and TPOs
Safer Communities Partnership	Sharing Crime & Disorder data, managing Anti Social Behaviour (Uniform) and Logging of ASB by Community Wardens

2.2 Benefits of these systems:

- The Planning Department processes over 2,500 applications a year. GIS is used to query 45 layers, quickly checking for any constraints to the approval of an application.
- The Highways and Transport Service manages 1,519km of road network. GIS plays an essential part in the maintenance of these and the reporting of faults.
- The Land Charges team processes approximately 2,400 searches a year. GIS can quickly search 20 layers to automate the answering of those searches.
- The Rights of Way team manages 1,188km of paths. GIS plays an essential part in the maintenance of these and the reporting of faults.

2.3 There are also several web based applications used by staff and the public:

Intranet/Website facility	Description
Online Mapping	Provides citizens with access to various mapping layers held by the Authority
Property Search	Provides a citizen centric view of services and information held by the Authority (Location Based Services)
Public Access	Provides citizens with access to Planning & Building Control applications with links to our Document Management System
Fault Reporting	Provides citizens with a facility to locate and log faults with Customer Services
Interactive Map	Provides staff with access to various mapping layers held by the Authority and simple GIS functionality
Stats on Maps	Provides citizens with numerous statistical maps based on Census information and Indices of Multiple Deprivation data

2.4 Benefits of these systems:

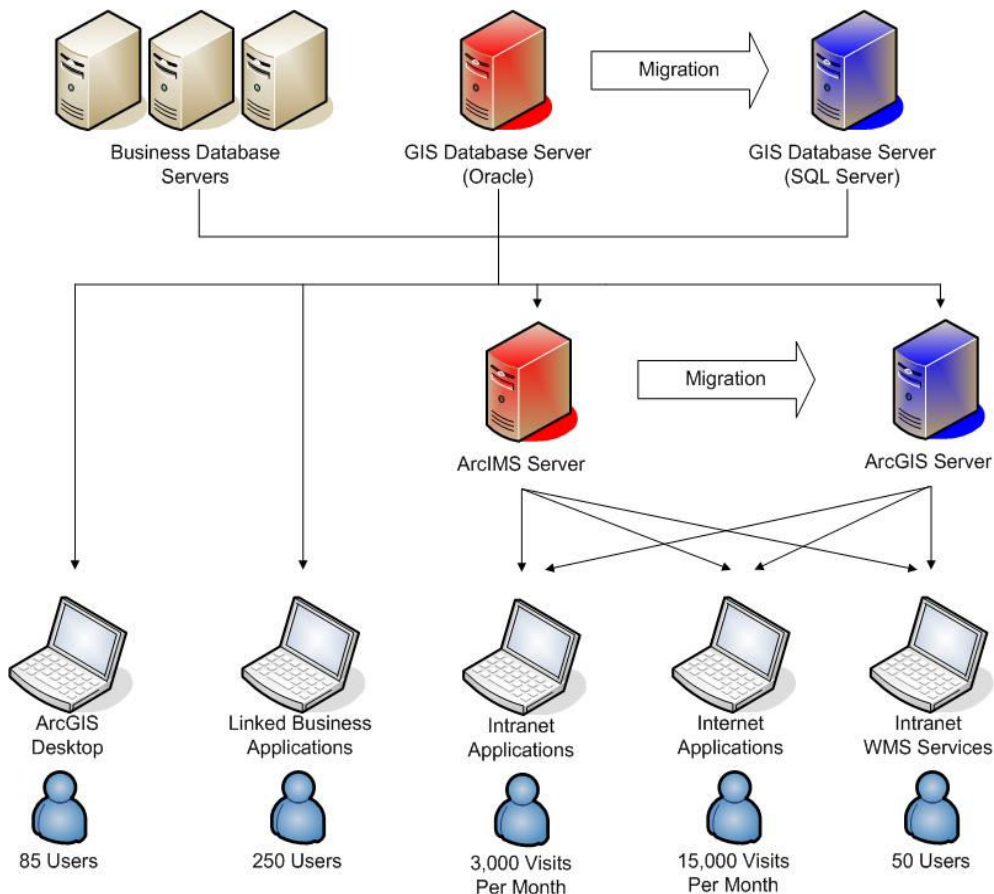
- Over 70% of West Berkshire Council staff have made use of the Interactive Map for their work. The Interactive Map receives 3,000 visits per month by staff.

- Our website GIS applications have been highly commended by SocITM and receive up to 15,000 visits per month. This reduces avoidable contact with Front Line Council staff and promotes self service.

3. Underlying GIS Technology and current Projects

- 3.1 The majority of the Council's 500 GIS datasets are served from our corporate GIS database server although GIS data is stored in many other databases. We are migrating from Oracle to SQL Server database technology to give us improved performance whilst reducing our database purchase and licensing costs.
- 3.2 Data can be read directly from the database by desktop GIS applications (ArcGIS) and other Business Applications that have embedded GIS functionality. We have recently moved to a concurrent licensing model to reduce our licensing costs and enable flexible working via Citrix.
- 3.3 Because web browsers are light weight and have no concept of complex GIS functions, web based GIS applications will interact with server side Internet Mapping Services (ArcIMS Server) to analyse, query and display maps, returning simple map images for the application to display. We are currently migrating from ArcIMS to ArcGIS Server technology. This will allow us to publish faster, more dynamic map applications with improved GIS functionality.

Fig.1 Simplified diagram of current GIS architecture and migration projects.



4. GIS Funding

- 4.1 Revenue costs for maintaining the GIS infrastructure and licensing are met by ICT from the budget 48529. Revenue costs are currently £31,430 per year. ICT annually recharge service areas for specific GIS licenses, used by approximately 85 officers, to recover £25,110 of this cost.
- 4.2 Development of the GIS has traditionally been resourced from a fund of money held externally to capital budgets visible in Agresso. This has gradually depleted and is not annually replenished with any capital funding. There is currently £27,500 left in the fund which will be used for current projects during this financial year. Money is transferred from the fund into the budget 87066 at the end of each year to cover any capital spend during that year.
- 4.3 ICT has secured annual capital funding for GIS of £40,000 per year from 2012-2014, reducing to £30,000 per year in 2015.
- 4.4 There are currently two ongoing capital projects:
- ArcGIS Server Implementation Project - Project Budget £36,800 - £27,800 remaining to be spent. This will provide a replacement for our desupported ArcIMS software. This project will be completed during 2011
 - GIS Database Server Replacement Project - Project Budget £16,000 - £3,000 remaining to be spent. The GIS Database Server is due for replacement. Changing to SQL Server technology will save £3,000 in reduced hardware costs and £2,500 annually on maintenance costs. This project will also be completed in 2011.

5. GIS Strategy

- 5.1 The strategic plan for 2011/2012 is being formalised and will be published by September 2011.
- 5.2 Over the last year our strategic direction has focused on reducing our licensing costs and enabling GIS to be used in a Timelord environment. We have successfully moved to a concurrent licensing model which makes more efficient use of our licenses.
- 5.3 A key strategic project has been the implementation of ArcGIS Server. This provides a platform on which new web applications will be developed. Replacing applications such as our Intranet mapping system with a functionally rich application will allow a number of users to switch from using more expensive ArcGIS Desktop licenses, further reducing our licensing costs.

6. Pressures

- 6.1 GIS is maintained and developed by two experienced officers. As part of the ICT Applications Development Team, both officers have additional roles in supporting a number of other applications as well as GIS. Supporting other applications consumes a large amount of their time.

- 6.2 Requests for GIS support are generally met within KPI. The team's capacity to complete requests for change or system developments beyond basic maintenance of the system is sometimes challenging.
- 6.3 The Council's GIS applications are aging. There is a need to complete current projects and upgrade our server software and database to remain supported by our GIS vendor (ESRI). We will be unable to cater for any new development requirements using outdated server software.

7. Areas for Improvement

- 7.1 There are various possibilities for improvements and efficiency savings utilising GIS. Below is a list of some areas that have been identified:

Topic	Example
Better targeting of resources	e.g. Use the Customer Satisfaction Survey to identify areas where customer satisfaction is low.
Increase location based services	e.g. Enhance the online Property Search to include more localised information – clubs, events, services.
Preventing duplicate requests	e.g. Prevent customers reporting duplicate faults/ service requests for issues already reported.
Increase customer self help	e.g. publish more GIS data layers and create useful links that will answer frequently asked questions.
Increase customer reporting	e.g. Improve customer fault reporting. Make it easy to report faults directly from a mobile device.
Better management of assets	e.g. Implementing both an effective Land Terrier System and capturing Highways Land boundaries would bring huge benefits to staff and the public in resolving ownership issues.
Efficient data sharing	e.g. Better use of WMS (web map services) for sharing data with external Authorities and agencies, for instance, in an Emergency Planning scenario. This would negate the need to share data on CDs, prevent inaccurate copies being stored and thus avoid ambiguity.
Better exploitation of the NLPG	e.g. Linking business data with the NLPG is a turn key solution for visualisation and analysis of that data in GIS.
Efficient routing of vehicles	e.g. Optimise routes and reduce costs when managing contracts and checking staff mileage claims.

8. Recommendation

- 8.1 The Resource Management Working Group notes the ongoing work of the ICT service in developing GIS.

Appendices

There are no Appendices to this report.

Consultees

Local Stakeholders: Councillor David Betts, Kevin Griffin, Matthew Scalpello

Officers Consulted:

Trade Union: