

Barrodale's Digital Electoral Atlas and IBM® Informix® Dynamic Server empowers Elections BC's redistricting project

Comprehensive spatial data management solution integrates multi-data sources providing a high performance database for British Columbia's dynamic voting population



“Elections BC was impressed with the Barrodale Computing Services DataBlade technology and with Informix as a mapping solution and licensed these technologies. Elections BC then engaged Barrodale Computing Services to support the mapping systems at Elections BC”

Peter Gzowski,
Director, Voter Registration and Boundaries, Elections BC

Elections BC is a non-partisan, independent office of the Legislature, responsible for administering the electoral process in British Columbia, Canada. This includes provincial general elections, by-elections and provincial referendums.

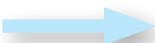
In recent years due to shifting socioeconomic patterns, the electoral boundaries within British Columbia have dramatically changed. A new set of voting areas have been established, respecting the dynamic nature of the population and their accessibility to voting stations. Elections BC had to undertake the task of re-assigning voters to their new voting areas and voting stations based on residential location. To achieve this they needed to re-map the entire province respecting the new voting districts and assimilate fresh voter lists in each area. Not only would this satisfy Elections BC's internal redistricting requirements, it would also equip external organizations such as political parties and polling companies with updated accurate data.

Three key objectives were established in order to undertake this project in a timely fashion. The voter area redistricting had to be complete within 100 days. Each voter had to be assigned their correct voting area at the time they registered, and all maps and lists had to be produced within a further 100 days after the redistricting was concluded.

High volume complex data stretches resources

The size and mobility of the population and the vast geographic area and complex infrastructure of British Columbia combined to produce an overwhelming volume of data. This stretched Elections BC's manpower and processing resources beyond the point where they were able to deliver the project on time.

Elections BC turned to IBM Business Partner Barrodale Computing Services (BCS), a company familiar to the provincial government, for the solution. Known for providing highly effective and efficient software solutions to technical problems involving complex data, BCS proposed their proprietary TerrainWorks DataBlade product and Integrated Digital Electoral Atlas (INDEA) combined with IBM Informix object relational database technology. This high performance solution would swiftly process the large volumes of data and produce a mapping system that would support the nature of the complex queries needed to complete Elections BC's redistricting project.



10,000 addresses now integrated monthly

Business Challenge

The scale and complexity of data put undue strain on Elections BC's capacity to complete the project on time. Inability to link textual and numeric data (roads, areas and addresses) with geospatial locations (voter areas), created a disconnection between the business area that managed voter registrations (non-spatial data), and the business area that produced the maps and lists (spatial data).

In addition all new data such as updated addresses, new roads and amended boundaries was adding to the burden, as Elections BC had no effective and efficient means of integration.

The Solution

IBM® Informix® Dynamic Server products for industrial-strength, embedded computing, providing rapid online transaction processing (OLTP) performance, renowned reliability and nearly hands-free administration to all business sizes.

TerrainWorks® DataBlade for database applications involving storage and manipulation of geo-spatial and attribute data that describe objects such as roads, legal boundaries, and streams; it stores groups of point, line, and polygon data in a compacted form that facilitates fast searching.

Integrated Digital Electoral Atlas (INDEA) Data Manager provides an integrated network of roads, municipal boundaries, as well as electoral districts and voter areas. This data allows Barrodale Computing Services to develop a comprehensive set of facilities for geocoding, data management and map production of any given area.

Business Transformation

The combination of BCS's DataBlade, INDEA and IBM's Informix object relational database technologies has revolutionized Elections BC data handling and processing capacity. The sophisticated spatial data management system supports high volumes of data required to undertake complex queries, involving an array of geographical determinants (such as points, lines, arcs and text). Elections BC is now fully equipped to execute their redistricting project on time.

What was previously a highly labor intensive and time consuming activity, is now a highly automated process capable of integrating and updating 10,000 addresses and 1,000 roads per month.

Implementation

The implementation centered on achieving three key objectives:

- The ability to integrate spatial with non-spatial data
- A framework for integrating new forms of spatial data (e.g. houses and roads) as they occurred
- An addresses registry that can be accessed by other parties and other software platforms.

Elections BC director Peter Gzowski sums up the value of the BCS contribution: "Barrodale Computing Services has proved to be a reliable provider of sophisticated and inventive tools that meet our needs."

"The vast size of British Columbia (BC is larger than the States of California, Oregon, and Washington combined) poses unique challenges to Elections BC. A new set of Electoral Districts will be in place for the next election, and voting areas will need to be substantially altered to reflect significant shifts in population."

Michael Dunham-Wilkie, Senior Database Analyst, BCS

For more information on how **Barrodale Computing Services** can help your organization, contact us at **(250) 704-4428** or visit our Web site at **www.barrodale.com**

Business Benefits

Elections BC now has a fully integrated and highly automated database on which to base its management of provincial elections now and in the future.

- Fast new address process using a comprehensive address registry
- Full spatial/non-spatial data integration speeds up redistricting process
- Low maintenance database requires minimal administrative resources
- A single solution providing editing facilities for a wide range of geospatial factors
- A locally sourced solution providing experienced software development and rapid response capabilities

Confidence in technology...

As an IBM Informix database user Elections BC enjoys the benefits of superior support combined with BCS's local presence and vast technical experience.

Future shifts and changes in geography, infrastructure and population will no longer cause undue constraint on British Columbia's voting process.

With the INDEA Data Manager in place BCS's Michael Dunham-Wilkie concludes that Elections BC "...will be able to continue to carry out their mandate in a highly efficient, economical and effective manner."