

# Lay of the land

by Robert Portelance

**Open-source GIS technology promotes community engagement in sustainability and lowering costs. Whistler, BC applies geospatial technology to developing more sustainable, eco-friendly and socially responsible practices.**

**L**OCATED IN THE HEART of British Columbia's ski country, the resort municipality of Whistler is home to more than 9,500 people and attracts more than two million visitors each year. Whistler's economy depends on tourism, which makes maintaining its beautiful surroundings a key priority for the municipality.

To ensure its continued success as one of Canada's premier resort destinations, Whistler has introduced Whistler2020, a visionary plan that is committed to minimizing impacts on the environment through more sustainable, eco-friendly and socially responsible practices. The Whistler2020 plan is a comprehensive effort that adopts a methodological approach to making step-by-step strategic decisions ensuring its long-term environmental, economic and social sustainability.

Geospatial technology helps municipalities better plan for and fund their development and infrastructure needs, thus safeguarding the environment. A system like MapGuide Open Source provides municipal planners with a comprehensive, accurate, map-based view of their environment to rely on while reviewing residential and commercial development proposals, as well as handling all aspects of integrating and preparing geospatial data for distribution on the Internet.

For Whistler, geospatial data within the municipality's geographic information system (GIS) plays a critical role in achieving Whistler2020's long term municipal planning goals. To implement this plan, Whistler chose MapGuide Open Source to both build maps and transparently engage the public through the provision of a database outlining the community's development activities. By using an advanced, real-time mapping system to display valuable spatial data, municipal decision makers can access information and communicate sustainabil-

ity priorities to citizens, visitors and staff through a dynamic, online interface. Many citizens now use the mapping interface provided to prepare their presentations to municipal council.

## The challenge

An early innovator, Whistler began sharing GIS data online in the early 2000s with Autodesk MapGuide software ([www.autodesk.com/mapguide](http://www.autodesk.com/mapguide)). The solution worked well, providing citizens with fast access to public maps and enabling public employees to find and use location-based information quickly. As Whistler's needs evolved, so did their need for a solution to allow them to build more intricate and highly customized mapping applications.

Two key events prompted Whistler to turn to open technology. First, municipal planners wanted to make the benefits of online maps available to more citizens as a part of the Whistler2020 plan. Second, Whistler will host the world during the Olympic and Paralympic Games. In support of their planning efforts leading up to the games, Whistler will use powerful GIS technology for a comprehensive, online mapping system. Whistler is using geospatial technology to help achieve its long-term sustainability objectives and to meet the demands of an international audience.

To effectively conduct sustainability planning and analysis, sharing information with stakeholders and community partners was critical. With so much on the line, municipal staff were tasked with creating a solid foundation based on accurate information for planning and development. The plan encompasses monitoring for indicators of environmental changes, i.e. the presence of endangered species in particular areas, as well as growth.

"When people have convenient access to data and maps, they are better informed

and engaged in the decision-making process," says Dan Griffin, GIS coordinator for Whistler. "We wanted to make data from more sources conveniently available. At the same time, we did not want to increase our costs or dedicate additional resources to developing web mapping applications. In MapGuide Open Source and Autodesk MapGuide Studio, we found technology to fit our needs."

## The technology behind the solution

Municipalities run on tight and often, inflexible budgets and Whistler was no exception. With so many ambitious goals to achieve, decision makers were concerned with choosing an economically feasible solution that could be used for years to come.

Whistler selected MapGuide Open Source for its platform neutrality, which meant that it integrated well with their existing hardware and software systems, enabling GIS data to be distributed across the organization. MapGuide Open Source is cost-effective to implement and allows developers to create custom applications over time. These features add value to Whistler's investment.

"Autodesk has really done the GIS world a great service by making the software available to the open-source community" says Griffin. "We like the fact that it's highly scalable and easily integrated with other municipal systems."

Whistler is highly engaged in the open-source community. Continual enhancements to the technology will mean that the GIS system is a sound long-term investment for the municipality. With MapGuide Open Source, Whistler was able to meet their departmental needs within a limited budget.

"Autodesk MapGuide Studio provides an easy-to-use interface and you can see the results immediately," explains Griffin. "It does not require advanced authoring expertise. Anyone familiar with GIS can use it to build and publish great looking maps for use over the web."

## Saving time and reducing errors

MapGuide Open Source includes feature data objects (FDO), another open source technology contributed by Autodesk, which Whistler is using to its advantage. FDO data access technology links data from a variety of sources – saving time and reducing the need for translation.

FDO enables Whistler to blend multiple pieces of information on maps without having to translate the massive amounts of underlying data. That means a user can create a map that includes raster photographic imagery, utility information created with AutoCAD Map 3D software, and environmental data stored in ESRI Shapefiles, a geospatial vector data format for geographic information systems software files. The process is entirely seamless from the user's perspective, and because there is no data translation, there is no risk of data conversion errors.

"FDO provides us with the ability to quickly and seamlessly add all types of data sources to our maps," reports Griffin. "We have a variety of customers who use our

maps. FDO allows us to bring together reliable data in a single map and gives us flexibility. For example, we can use FDO to incorporate data from sites maintained by other municipalities or provincial agencies."

Whistler's MapGuide Open Source website has been well-received by the staff, who depend on it to help them serve residents.

According to Griffin, "It used to take about two days to assemble community notices for projects like zoning amendments. Our mapping site can create address lists in seconds. Of course, citizens save time and are better informed because they can access the information they want from home. And because our GIS department is no longer fielding ad-hoc map requests, we can devote even more time to system enhancements."

Griffin notes that his department's time savings are being used to serve the community and enhance visitors' enjoyment of Whistler.

"We're working with the local historical society and community-based environmental groups to build dynamic maps that highlight points of interest and biodiversity in Whistler," he says. "Thanks to online

mapping, we have more time for special projects. Projects like community mapping and the Whistler2020 sustainability vision and plan have greater returns with MapGuide Open Source. Not having to download a viewer means a hassle-free experience for tourists and other casual site visitors."

Whistler can now inform citizens and enable greater public participation in decision making. Map accuracy is increased with the ability to blend multiple geospatial data-types, without translation, using FDO technology, and the time public employees spend on key mapping and data tasks is reduced. Whistler is saving staff time, improving its levels of service while preparing to meet its 2020 sustainability goals, and it is also lowering costs with open source geospatial technology. 

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