Online Mapping

Introduction

The City of Castlegar began its program to develop an internet based Geographic Information System (GIS) in 2000. The objective was to provide simplified access to the property and infrastructure data that is important to staff, developers, realtors, and residents. Recognizing that accurate base mapping was essential to develop an effective GIS, the City compiled its cadastre (land parcels), infrastructure, and planning mapping to a standard that exceeded that in many larger municipalities. During this time, the City acquired high-resolution aerial photography, contours, and a digital elevation model. Once all of the data was in place, the City developed a website to deliver the information to staff and the public.

Building the Base

Much of the information a municipality uses and provides on a day-to-day basis pertains to land parcels, represented by cadastre maps. Global Positioning System (GPS) surveying techniques were used to help create a spatially accurate cadastre map that could be linked to the City’s corporate databases. This link would provide the internet end-user with access to ownership, address, assessment, and legal information for land parcels.

In addition to the information in the corporate databases, developers and realtors frequently require planning related information for land parcels. Zoning, land use, and development permit mapping was created so that it could be overlaid on the parcels. This was to provide developers and real estate professionals the means to view a parcel’s current zoning designation and see how that particular parcel fit into the City’s long term planning objectives.
Knowing the location and details of the City’s water, sanitary, and storm utilities is essential. In 2003, the City partnered with the newly created Selkirk Geospatial Research Centre and secured a GIS co-op student through to 2007. Each summer, the students used GPS surveying to georeference the City’s utilities. To date, mapping of the City’s water and sanitary infrastructure is complete and is an integral component of the City’s Online Mapping.

To provide a real-world backdrop for the cadastre and infrastructure data, high-resolution aerial photography was acquired in 2004. This was to enable the Online Mapping user to view the location of lot lines and infrastructure relative to features on the ground, a powerful tool for making informed planning decisions.

At the same time the aerial photography was flown, the data required to build contours and a digital elevation model was collected. Given that much of Castlegar’s future development will occur in steeply sloped areas, this information provides developers and planners the ability to determine a parcel’s development potential, the best location for future infrastructure, and environmentally sensitive areas.

**Castlegar Online Mapping**

As the base data was being collected, the City was investigating ways to bring the data together and deliver it to stakeholders via the internet. Autodesk MapGuide software was selected as the most appropriate internet mapping software, and was customized by in-house staff over a period of several months. Much attention was given to making site navigation intuitive, with tools and features designed to simplify the retrieval and display of multiple mapping layers and associated attribute information. Please see the Online Mapping Tour presented at the end of this report.

To date, the City’s GIS program has been a tremendous success and has changed the way that the City’s Development Services and Civic Works departments do business. Online Mapping simplifies access to complex information, and enables better communication between City staff and the public. It provides the ability to interactively view mapping information while speaking to someone in another city or province, someone who is at there desk viewing the same information.

Castlegar’s Online Mapping is not viewed as a project, but instead as a long-term program. We are currently researching new mapping software that will provide even greater functionality. We are also investigating ways to provide internet based GIS to our Civic Works crews so that they are able to access essential information on site, saving them time and the taxpayer money.
Summary

The City has worked diligently over the last seven years to build an online Geographic Information System (GIS) that benefits staff, the development community, and residents. The City is consistently improving its delivery of Online Mapping to the end-user and has made budgeting for data capture and the necessary software a priority. We are committed to the ongoing development of the site in order to provide the public, and staff, the comprehensive tools they need to make informed planning and development decisions.
Navigation and Search tools help the user locate the area of interest

Map Tips are used to interactively display attribute information
Selecting land parcels displays related information

**Local Government GIS**

Selecting Land Parcels:

Thematic maps show planning related mapping

**Local Government GIS**

Zoning and Land Use Mapping:

Data source: City’s corporate databases – ownership, financial, assessment, legal, taxation

Thematic maps show planning related mapping
Scanned subdivision plans are available for many parcels

Mark-up tools enable the sharing of ideas and information
Buffer tools simplify notifying the public for zoning amendments

Buffer and Notification Tools:

Measuring the distance from a residence to the property line helps staff determine the potential for an addition to this house