DISTRICT of NORTH VANCOUVER

SATELLITE IMAGERY

Located against the backdrop of BC’s Coast Mountains, the District of North Vancouver is home to over 80,000 citizens who work and live in B.C.’s lower mainland. The diverse geography and undulating terrain make this large area a popular outdoor destination for many of Vancouver’s residents. Making North Vancouver a liveable region requires many resources.

In 2000 and 2001, the District’s GIS Department purchased imagery captured by the IKONOS satellite. IKONOS was the first commercial high-resolution imaging satellite, offering multispectral data with a resolution of 4-meters and black and white imagery of 1-meters. The District of North Vancouver orthorectified imagery from Sept. 24, 1999 from Vandenberg Air Force Base, California by Space Imaging of Denver, Colorado.

The colour, or “multispectral” sensor onboard the IKONOS satellite captures images in four image bands. Similar to the human eye, the sensor records the red, green and blue wavelengths, but it also senses infrared (IR) information. Analyzing the infrared bands is useful in identifying impervious surfaces, vegetation health, trees species, and man-made features, for example.

In 2002, the GIS Department created a variety of fly-through movies that allow the user to experience a virtual flight through the North Shore mountains, its rivers and the community. The movies can be viewed on GeoWeb, the District’s GIS website, at www.geoWeb.dnv.org. In addition, the use of 3D models derived from satellite imagery brings remote areas immediately to the desktop, thereby aiding planners and engineers to help shape our community.

In 2001, the District of North Vancouver GIS Department successfully orthorectified and enhanced the IKONOS satellite imagery. Once the IKONOS imagery was orthorectified, or “stretched and draped” over the digital elevation model, the imagery was then used by the District GIS Department to create a virtual warehouse of possibilities and through the process of site planning and classification GIS Analysts could begin to interpret the potential of various areas to determine if land uses to a wide variety of Classification of tree species, vegetation coverage, and land-use was immediately beneficial to the District’s Forestry Management Program. Using the newly obtained raster satellite imagery along with a five-year spatial database of inspected trees across the entire municipality.

Moreover, the satellite imagery not only provided a rich base for classification and identification of geographic features but also led to producing high-quality visualization products.

In 2010, the GIS Department created a variety of high-resolution movies that allow the user to experience a virtual flight through the North Shore mountains, its rivers and the community. The movies can be viewed on GeoWeb, the District’s GIS website, at www.geoWeb.dnv.org. In addition, the use of 3D models derived from satellite imagery brings remote areas immediately to the desktop, thereby aiding planners and engineers to help shape our community.

As new satellites become operational greater imagery resolutions will offer even greater detail. The District of North Vancouver GIS Department will in time develop a temporal database that can be used for long-term change detection. The more towards merging raster spatial data with vector data has leveraged the corporation’s GIS to new levels by providing products for staff and the community alike.

More Information
District of North Vancouver
GIS Department
355 West Queens Road,
North Vancouver, B.C. Canada V7N 4N5
(604) 990-2450
WWW.GEOWEB.DNV.ORG

Population: Over 80,000
Area: 16,461 ha
Number of Properties: Over 26,300
Percentage of Parks: 62% Park Land
Average Rainfall: 260 - 270 cm
Average Temperature: 13°C
Total Length of Road: 453 km
Length of Water Network: 486 km
Total Length of Sidewalks: 278 ha

3D VISUALIZATION of NORTH VANCOUVER