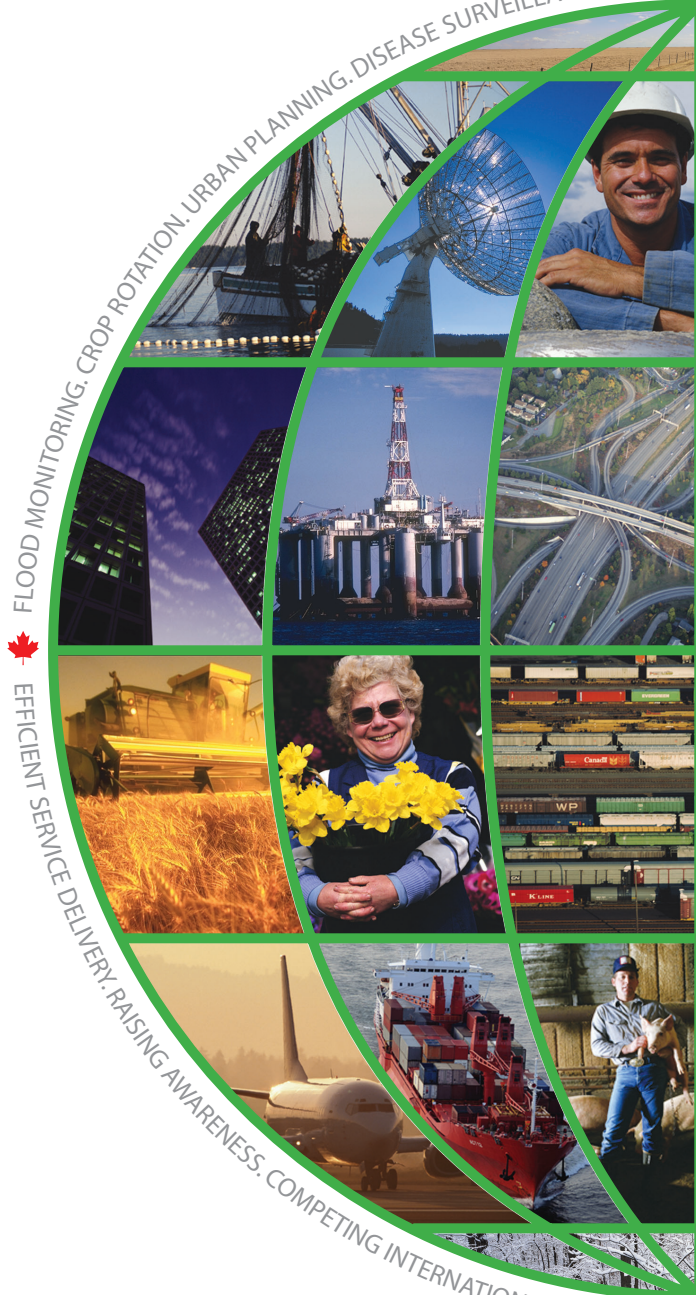


FLOOD MONITORING. CROP ROTATION. URBAN PLANNING. DISEASE SURVEILLANCE. FORESTRY MANAGEMENT. PUBLIC SAFETY. SHIPPING AND NAVIGATION. RECREATION. COMMERCIAL FISHING. ENABLING CITIZENS.



EFFICIENT SERVICE DELIVERY. RAISING AWARENESS. COMPETING INTERNATIONALLY. GROWING WORLD-CLASS EXPERTISE. SHARING DATA. SEARCH AND RESCUE. EMERGENCY PREPAREDNESS. POPULATION MODELLING.

Better knowledge means better decisions

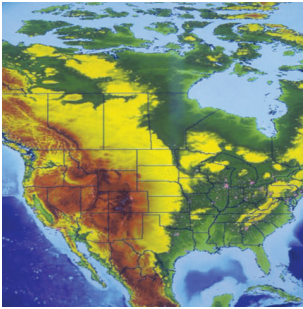
CANADIAN
GEOSPATIAL
DATA
INFRASTRUCTURE





BETTER KNOWLEDGE MEANS BETTER DECISIONS

SEARCH AND RESCUE. EMERGENCY PREPAREDNESS. POPULATION MODELLING. RETAIL PLANNING AND DEVELOPMENT. ENVIRONMENTAL PROTECTION. FLOOD MONITORING. CROP ROTATION.



What are geospatial data and geomatics?

Geospatial data is information that can be mapped or otherwise associated with a particular place, for example, the location of a river, crime statistics for a neighborhood, or the spread of infectious diseases.

Geomatics is the collecting, managing, analyzing and integrating of geospatial data. These activities and services enable Canadians to make better policy and business decisions.

The Canadian Geospatial Data Infrastructure equips Canadians to improve our international competitiveness, our environment, and our quality of life.



Today, the Canadian Geospatial Data Infrastructure (CGDI) provides us with a new resource (www.cgdi.ca) in our quest for knowledge and understanding. That's because the CGDI enables Canadians to use geomatics to make better decisions about how and where to live, learn, and work.

One of today's fastest-growing information technology sectors, geomatics is helping us deal with a host of important challenges: environmental protection ... disease surveillance ... emergency preparedness and public safety ... business growth ... municipal development ... and infrastructure creation, to name but a few.

And Canada is leading the way. Our advanced software, hardware, and services have elevated us to the fore of the geomatics sector worldwide.

CAPITALIZING ON THE CANADIAN GEOSPATIAL DATA INFRASTRUCTURE

The CGDI delivers geographic information content to the information highway. Composed of advanced technologies, standards, and access systems, the CGDI makes over 1400 geospatial database collections accessible on the Internet. These databases hold topographic maps, air photos, satellite images, nautical and aeronautical charts, census and electoral areas, and inventories of forests, soils, plants, animals, and marine life—a diverse treasure of geographic information.

And Canadians are richer for it. Our investment in the CGDI is already paying dividends, and yet we've only begun to tap the benefits that the CGDI promises ... for our economy, our communities, our environment, our safety, and our health.



URBAN PLANNING. DISEASE SURVEILLANCE. FORESTRY MANAGEMENT. PUBLIC SAFETY. SHIPPING AND NAVIGATION. RECREATION. COMMERCIAL FISHING. INFRASTRUCTURE DEVELOPMENT.

Stakeholders from all levels of government, the private sector, academia, and non-government organizations have each contributed to the growth and evolution of the CGDI.



GEOCONNECTIONS: A CATALYST FOR GROWTH

Led by Natural Resources Canada, GeoConnections (www.geoconnections.org) is a national partnership initiative to build the CGDI and make Canada's geographic data, applications and services accessible on the web.

HOW HAS GEOCONNECTIONS SUCCEEDED?

■ Supporting business innovation and development

Small- and medium-size businesses have received more than \$9 million in funding from GeoConnections to develop applications and services for the CGDI. Supplied through the GeoInnovations program, this funding has helped build a strong foundation for growth in the geomatics industry and create jobs in geomatics companies. Moreover, Canadian businesses are now leveraging their highly sought expertise to win geomatics contracts around the world and solidify their international market leadership. In short, at home and abroad, Canadian geomatics companies currently distinguish themselves among the world's elite.

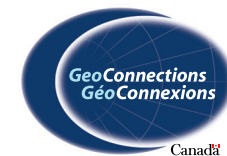
■ Promoting the efficient sharing of geospatial data

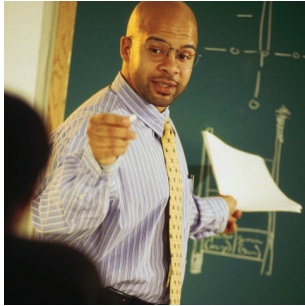
To fulfill its vast potential, the CGDI needs Canada's numerous diverse geospatial databases to work together. These databases include information on roads, rivers, city boundaries, census tracts, forest cover, and hundreds of other geospatial topics. GeoConnections encourages its partners to use international standards to link their databases to the CGDI in order to simplify data sharing on-line. As a result, Canadians can use this Internet resource to gain a more complete, revealing, and accurate picture of their environment.



Barrier-free data access

GeoConnections also strives to streamline data licensing, harmonize geospatial data-sharing policies, and promote free data usage. The goal is to reduce the barriers to distributing, accessing, sharing, and using geospatial data.





GIS A Geographic Information System (GIS) is the hardware and software used to input, store, manipulate, output and visualize geographically referenced data from one or more sources in fields ranging from resource management to municipal planning. The power of a GIS is in the analysis capabilities it provides for describing conditions at some point in time (e.g., maps of vegetation), predicting future scenarios (e.g., emergency planning for a flood), and defining courses of action that optimize several trade-offs (e.g., regional development planning).

■ Strengthening government cooperation and partnerships

GeoConnections brings federal, provincial and territorial government departments together to pool information resources and expertise. This collaboration encourages data suppliers to collect data once and share it with many other users. The outcome? Better and more current data, less duplication of effort, and more effective and cost-efficient service delivery for Canadians.

■ Empowering rural, remote, and Aboriginal communities

More than 100 rural, remote, and Aboriginal communities have received roughly \$30 000 each for geographic information systems (GIS) and global positioning systems (GPS) technologies, training, and data under GeoConnections' Sustainable Communities Initiative. Through this program, communities have learned how to use these geomatics assets to better manage their lands, their resources, and their futures.

■ Meeting Canadians' high demand for geographic information

Through the GeoConnections Discovery Portal and the Atlas of Canada, GeoConnections makes Canada's geographic information available on the Internet. From students to scientists, Canadians can quickly find and visualize on-line the geographic information that is important to them, be it maps, charts, satellite images, or databases.

■ Assisting geomatics students and industry to succeed

GeoConnections' GeoSkills program introduces students to exciting careers in geomatics and helps professionals in the industry to hone their skills and knowledge. By doing so, GeoSkills is supporting the continued growth of Canada's geomatics sector.

*CGDI technology is helping
Canada's government departments
work together.*





THE CGDI IN ACTION

STIMULATING INNOVATION. PROMOTING HI-TECH CAREERS. EFFICIENT SERVICE DELIVERY. RAISING AWARENESS. COMPETING INTERNATIONALLY. GROWING WORLD-CLASS EXPERTISE.

Here are a few of the ways that Canadians use the CGDI's technologies and services to better their lives and the world we live in. This section includes examples of geospatial projects or applications that GeoConnections has helped fund or support, either directly or indirectly.



Monitoring the environment

We can use the CGDI to better understand how to protect and sustain our resources and our environment.

For instance, CGDI technology is helping Canada's government departments work together to produce a national report on the status of our forests. The National Forest Information System (www.nfis.org) enables people to use the Internet to find, access, and integrate forest information held by different federal agencies, provinces and territories—a capability non-existent five years ago.

Foremost, NFIS will enable Canada to meet its international forest-reporting obligations. But the system promises numerous other benefits. For one, it encourages the country's governments to work together to capture, store, and report on forest data. The NFIS also promotes other partnerships and new applications. And finally, it helps Canada better monitor the management and sustainability of its forests.

Improving disease surveillance

Anything we can do to deliver better healthcare at a lower cost will benefit all Canadians. That's why Health Canada is using CGDI technology to help physicians and health professionals track flu activity across Canada on the Internet.

It wasn't always that simple. The department used to collect influenza activity from each province and territory. It would then produce a static flu-activity map, which the department would fax or email to doctors, labs, and health practitioners. Collecting and inputting the data took a lot of time, and the map was out of date almost before it arrived. As a result, the map offered limited value.

Today, physicians, health professionals, and members of the public can visit Health Canada's FluWatch site on the Internet (www.hc-sc.gc.ca/pphb-dgspsp/fluwatch) and get a weekly snapshot of flu activity across the country. They can see the hot spots immediately, and trace the flu's spread over time. It's more accurate. And it's more timely.



Although we may not be able to prevent natural disasters and emergencies, the applications and data services available from the CGDI can certainly minimize their damage, by equipping emergency response personnel and command centres to make quick-thinking decisions.



ENVIRONMENTAL PROTECTION. FLOOD MONITORING. CROP ROTATION. URBAN PLANNING. DISEASE SURVEILLANCE. FORESTRY MANAGEMENT. PUBLIC SAFETY. SHIPPING AND NAVIGATION.



Promoting recreation and healthy lifestyles

A national non-profit, charitable organization, Go for Green has a solution to Canada's growing obesity problem: get out and exercise. The organization operates a CGDI-based website called Trailpaq (www.trailpaq.ca) that describes some 3 800 trails across the country. Outdoor enthusiasts use the website to learn about a trail's location, length, flora and fauna, slope gradients, and terrain.

With this kind of in-depth trail information available on-line, Canadians have one more excellent reason to get fit ... and stay fit.



Canadian geomatics companies are capitalizing on CGDI standards to offer greater value to customers and to expand internationally. Small- and medium-size companies are equipped to compete more effectively in Canada and around the world.



Developing international business

Small- and medium-size Canadian geomatics companies are capitalizing on CGDI standards to offer greater value to customers and to expand internationally.

For example, one vendor can now develop a CGDI standards-based application that allows users to access data and view maps on a screen, while another company can provide users with that data without having to work with the first company—a big cost and time saver for both firms. As a result, smaller firms can now more easily create value-added applications.

This standards-enabled capability is also equipping small- and medium-size companies to compete more effectively in Canada and around the world.

One such company—Spatial Knowledge Engineering Inc. (SKE) of Toronto, Ontario—has developed CGDI standards-based software that the Food and Agriculture Organization of the United Nations (FAO) is relying on. FAO uses the SKE software to integrate data from different sources and provide it in map form, a capability that helps people in developing nations make land-use decisions locally.



Responding to emergencies

Over the past decade, Canada has experienced its share of natural disasters: floods in Manitoba, Quebec, and Newfoundland ... forest fires in B.C. ... tornadoes in Alberta ... ice storms in Ontario and Quebec. Add the threat of terrorist attacks and industrial accidents, and it's clear that Canadians live in a volatile environment.

And although we may not be able to prevent natural disasters and emergencies, we can certainly minimize their damage. By equipping emergency response personnel and command centres to make quick-thinking decisions, we can save lives and property. Here again, the CGDI shines.

For example, flood-rescue workers can rely on CGDI technology and data when riverbanks overflow. FloodTrack (www.floodtrack.ca/ftonline/ftonline.asp) offers on-line maps of flooded areas—a particular advantage when familiar reference points lie under water.



Building community capacity

“Give a community a map, and it can find its way today. Teach it how to make a map, and it can find its way forever.”

This twist on the adage about teaching a man to fish rather than simply feeding him underscores the value of GeoConnections' Sustainable Communities Initiative. This program helps equip and train rural, remote, and Aboriginal communities in using geomatics to manage their futures.

By creating and printing high-quality maps that present their sides of issues, communities can negotiate effectively with land developers, government departments, and associations. Communities can also solve problems faster and more effectively if they are able to generate high-quality maps that illustrate the “big picture.”

For instance, the Rural Municipality of Hanover in Manitoba is using geomatics to evaluate where to permit hog farm operations—a potential source of pollution. The community employs digital maps to reveal area watersheds, local hog farm locations, and residential zones. This insight enables the community to choose new hog-farm locations that best serve the community.



The data available through the CGDI allows Canadians to make decisions that affect our everyday lives in ways we often do not see. From urban development to the planning of recreational areas, we all benefit from the results of those decisions.



EFFICIENT SERVICE DELIVERY. RAISING AWARENESS. COMPETING INTERNATIONALLY. GROWING WORLD-CLASS EXPERTISE. SHARING DATA. SEARCH AND RESCUE. EMERGENCY PREPAREDNESS.



Empowering First Nations

The information offered by the CGDI enables community leaders to understand their development needs and solutions, to stimulate innovation, and to boost their economies.

Aboriginal people, as well as Canadians in rural and remote communities, can use the CGDI to access information and knowledge in the same way as Canadians in urban areas. Moreover, as First Nations assume more responsibility for managing their communities, the CGDI will greatly assist them to meet this challenge.

In one case, the Oromocto First Nation (OFN) in New Brunswick used CGDI technologies and data to study the Rusagonis watershed, a sub-watershed of the Oromocto river basin. Over the years, rural development, agriculture, and forestry had adversely affected many areas of the Oromocto river basin, and the OFN wanted to develop a strategic plan to restore and preserve the watershed.

With funding from the Sustainable Communities Initiative, OFN representatives were trained in using GIS. They then used their new found knowledge to collect field data, incorporate the data into the GIS, and then create and update working maps for the sub-watershed. These maps are enabling fisheries personnel to develop long-term plans for the area.

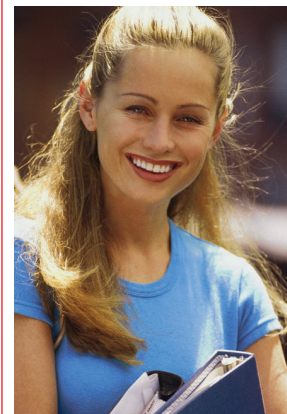
THE OPPORTUNITY IS OURS

The CGDI is proving to be an important resource for Canadians, and GeoConnections is instrumental to its continued growth.

GeoConnections is establishing partnerships ... training people ... fostering geomatics expertise ... promoting international data standards ... nurturing business growth ... building community capacity ... and supporting technological advances. Like the concrete pillars of a bridge, these roles support and strengthen the CGDI.

Where will this bridge ultimately lead? That remains to be seen. What is certain, however, is that the CGDI equips Canadians to confidently and wisely tackle a host of pressing challenges. By enabling us to make better, faster, and smarter decisions, the CGDI offers us an opportunity to improve our international competitiveness, our environment, and our quality of life.

If we choose to continue to enrich and develop the CGDI, we will capitalize on one of Canada's most important and promising technological resources.



FOR MORE INFORMATION

Visit the Canadian Geospatial
Data Infrastructure at

www.cgdi.ca

or contact us at

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