

**GeoConnections**

LOCATION-BASED INFORMATION ONLINE

INFORMATION GÉORÉFÉRENCÉE EN LIGNE

**GéoConnexions**

# GeoConnections Performance Evaluation of the CGDI

May 2007



Canadian  
Geospatial  
Data  
Infrastructure



Infrastructure  
canadienne  
de données  
géospatiales

Canada

## ➤ Outline

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  - The CGDI
  - New mandate
- Government of Canada reporting and evaluation requirements
  - RMAF
  - GeoConnections Logic Model
- Rationale for the performance evaluation approach
- Matching performance indicators to objectives
- Developing performance metrics
- Evaluation methodologies
- Challenges & opportunities
- Findings so far

# ➤ About GeoConnections

## History

- First funding Cdn\$60M over 5 years allocated in Federal Budget 1999
- Mandate to make Canada's geographic information accessible online by building the Canadian Geospatial Data Infrastructure (CGDI).
- Phase I (1999-2005) focused on:
  - Building the CGDI,
  - Developing examples of how it could be used to benefit Canadians (pilot projects), and
  - Some capacity-building with Aboriginal communities
- Accomplishments of phase I included:
  - Developed advanced technologies / applications, databases, and portals of core operational infrastructure
  - Delivered a common agreement on data licensing
  - Created standardized framework data
  - Strengthened Federal-provincial-territorial collaboration (First ever Ministerial Canadian Geomatics Accord with provinces/territories)

# ➤ About GeoConnections

## The CGDI

- A **distributed** data base – data providers and custodians keep control of “their” data
- Built on the **principle** that data should be:
  - Collected once,
  - Maintained closest to source, and
  - Shared widely.
- **Standards-based**
- Based on strong **partnerships** across levels of government and with private sector and academia
- A “**system of systems**”, including several National Information Systems:
  - National Forest Information System
  - National Land and Water Information System (agriculture)
  - RésEau (water quality information)
- Multiple points of entry (portals)



## ➤ About GeoConnections

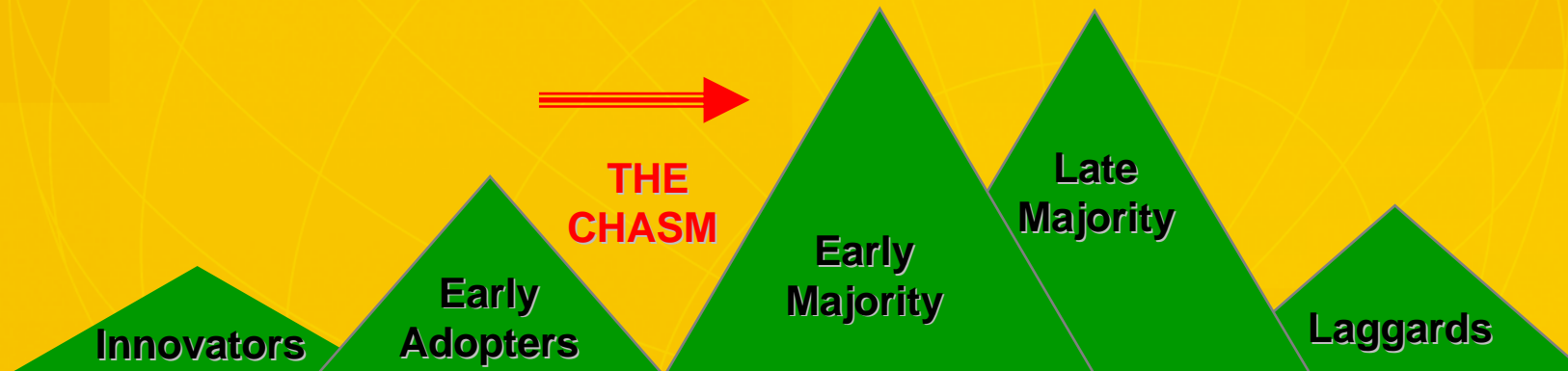
### New Mandate

- Another Cdn\$60M over 5 years – 2005-2010
- From Federal Budget 2005:  
*“Under the program, governments, the private sector, academia and non-government organizations have partnered to develop the Canadian Geospatial Data Infrastructure, bringing together data previously held by different organizations and orders of government. Budget 2005 provides **\$60 million over five years for GeoConnections to continue this work and to support decision making on a broader range of issues, particularly health, public safety, sustainable development, the environment and issues of importance to Aboriginal people.**”*

# ➤ About GeoConnections

## What the new mandate means

- Four new priority audiences / partners
  - Public health
  - Public safety / security
  - Environment and Sustainable Development
  - Matters of importance to Aboriginal Canadians
- Focus on users' needs
- Bridging the innovation gap



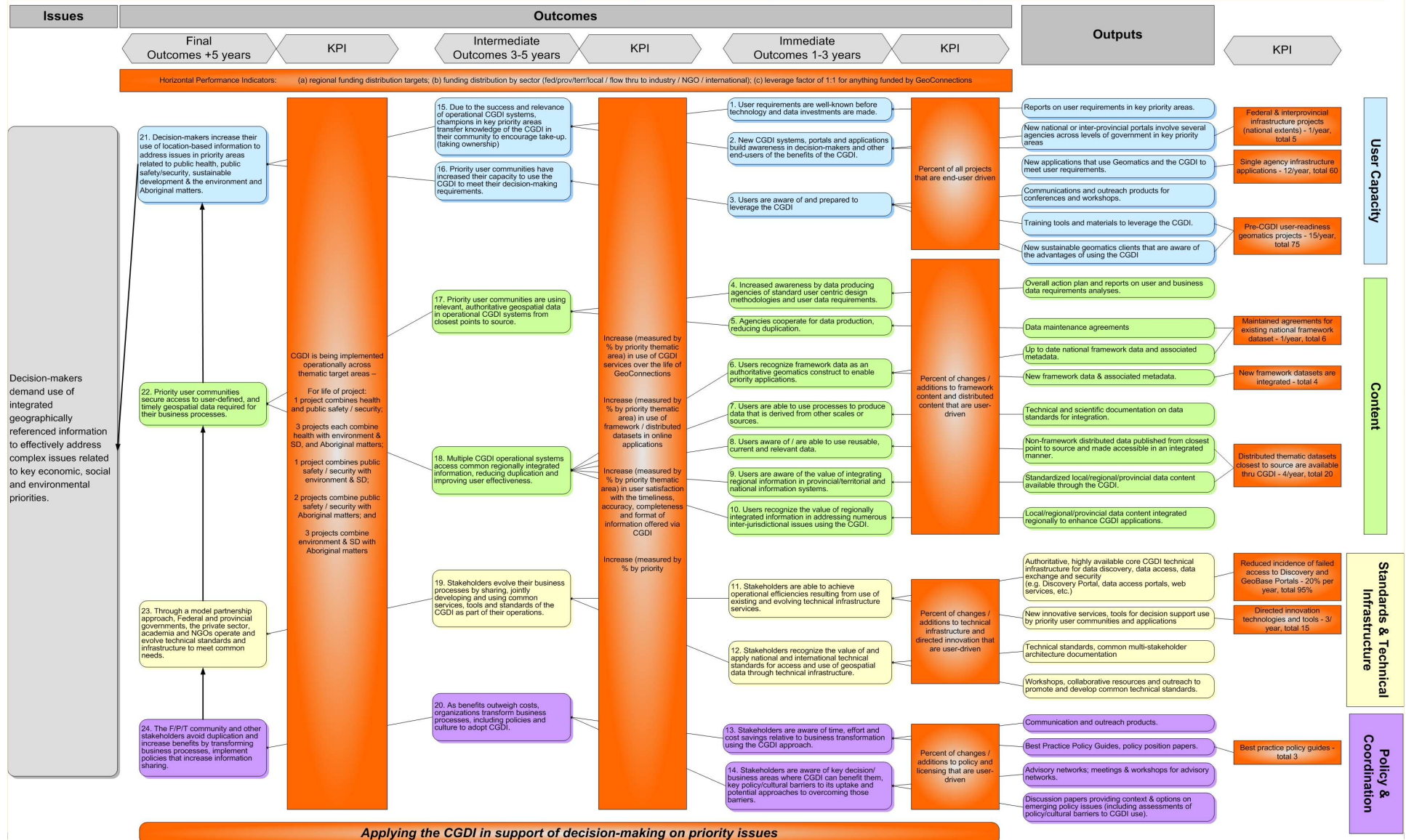
## ➤ GoC Reporting and Evaluation Requirements

### Results-based Management Accountability Framework (RMAF)

- A requirement of all GoC funded programs, including GeoConnections
- Defines strategic outcomes for the program
- Establishes foundation for strong commitment to **results for Canadians**
- Components of an RMAF include:
  - A sound governance structure
  - A results-based logic model
  - Sound performance measurement strategy
  - Evaluation work
  - Adequate reporting (annual for GeoConnections)


# GeoConnections' Logic Model

## GeoConnections II: Program Logic Model with Key Performance Indicators (KPI)





## ➤ GeoConnections' Logic Model

Funded Program Areas 	User Capacity	Content	Architecture	Policy & Coord
<b>Outputs</b>	6	8	4	4
<b>Outcomes:</b>				
<b>Immediate (1-3)</b>	3	7	2	2
<b>Intermediate (3-5)</b>	2	2	1	1
<b>Final (+5)</b>	1	1	1	1
<p><b>ISSUE:</b> Decision makers demand use of integrated geo-referenced info to effectively address complex issues related to key economic, social and environmental priorities.</p>				

## ➤ Rationale for Performance Measurement

- Nature of information economics – does not behave like other economic goods and services
- Unpredictability of costs (e.g., leverage factor from partners' contributions)
- Unpredictability of benefits
- Intangible nature of benefits – how much is better decision-making worth?

# ➤ Matching Indicators to Objectives

## **RMAF Indicators**

- 1 horizontal indicator (3 three parts)
  - Leverage factor
  - Regional distribution of funded projects
  - Thematic distribution of funded projects
- 1 indicator for outputs (9 parts – specific targets for numbers of outputs)
- 1 indicator for immediate outcomes (4 parts)
  - Percent changes to aspects of infrastructure
- 1 indicator each for intermediate and final outcomes

## **Challenges:**

- Focus on outputs, not outcomes
- Baseline measures are not known in many cases
- Some measurements pose significant challenges

## ➤ Developing Performance Metrics

- Expanded indicators for outputs – developed 3-4 per output and suggested performance metrics for each indicator (Giff)
- Explored available baseline data from:
  - Web use statistics (multiple portals)
  - Formal user needs assessment survey
- Reduced number of indicators to one per output based on:
  - Availability of baseline data
  - SMART criteria
- Refined evaluation methodologies to three basic ones
- Grouped outputs according to evaluation method
- Currently testing with staff



## ➤ Evaluation Methodologies: Consultations

### User / Stakeholder Consultations

- Results may be quantitative or qualitative
- May take the form of:
  - broad-based, national scale surveys, which can provide data suitable for quantitative analysis; or
  - qualitative discussions in a formal focus group; or
  - informal discussions with specific stakeholder groups, including GeoConnections' Thematic Advisory Committees.
- Three broad-based, national surveys are planned for GeoConnections II.
  - First survey (Summer 2006) provides baseline data
  - Follow on survey's planned for Fall-Winter 2007-08, and Winter-Spring 2009

# ➤ Evaluation Methodologies: Case Studies

## Defining Case Studies

- based on one or a few projects
- will provide qualitative indication of progress
- exploring experiences of project proponents in detail

## Criteria for Selecting Case Studies

- willingness of project proponents to tell their story
- relevance of project to the outcome being measured
- project success / quality (need range of “good, bad, ugly”)
- temporal (i.e., compare results over time)

## ➤ Evaluation Methodologies: Analysis

### Program Analysis

- Seeks quantifiable data from within program operations
- Examples include:
  - web use statistics,
  - numbers of new subscribers,
  - data from SmartSimple, and
  - participation in GeoConnections' events

### Project Analysis

- distinct from case studies
- seeks quantifiable data from the aggregate of all projects
- Examples include:
  - the number and distribution of funded projects (e.g., geographically, by thematic area), and
  - characteristics of funded projects (e.g., # of projects using closest to source data sets)

## ➤ Challenges & Opportunities

### Challenges:

- Identifying exclusive categories of outcome
- Some outcomes are not quantifiable
- Multiple opportunities for evaluation and measurement could take on a life of their own

### Opportunities:

- Data can be sliced and diced multiple ways
- Case studies can tell a compelling story
- Multiple measurement opportunities permit selectivity



## ➤ Findings So Far

### Examples from Phase I

- **Case study:** In 1999, 8 separate fed./prov. agencies held parts of national road network data. By 2005, only two agencies maintained road network data, significantly reducing duplication.
- **Project / program analysis:** Cdn\$60M in program funding resulted in Cdn\$170M in program activity – a leverage factor of almost 2:1.
- **Stakeholder / User Consultations:** Annual consultations with Geomatics Industry Association of Canada.

# ➤ Questions? Discussion?

## The GeoConnections Team

