THE FEDERAL GEOSPATIAL PLATFORM

The Government of Canada's source for geospatial data

Canadian Polar Data Workshop
30-31 May 2017

David Harper, Executive Director

Federal Geospatial Platform

Presentation Objectives

➢ To provide an overview of the Federal Geospatial Platform

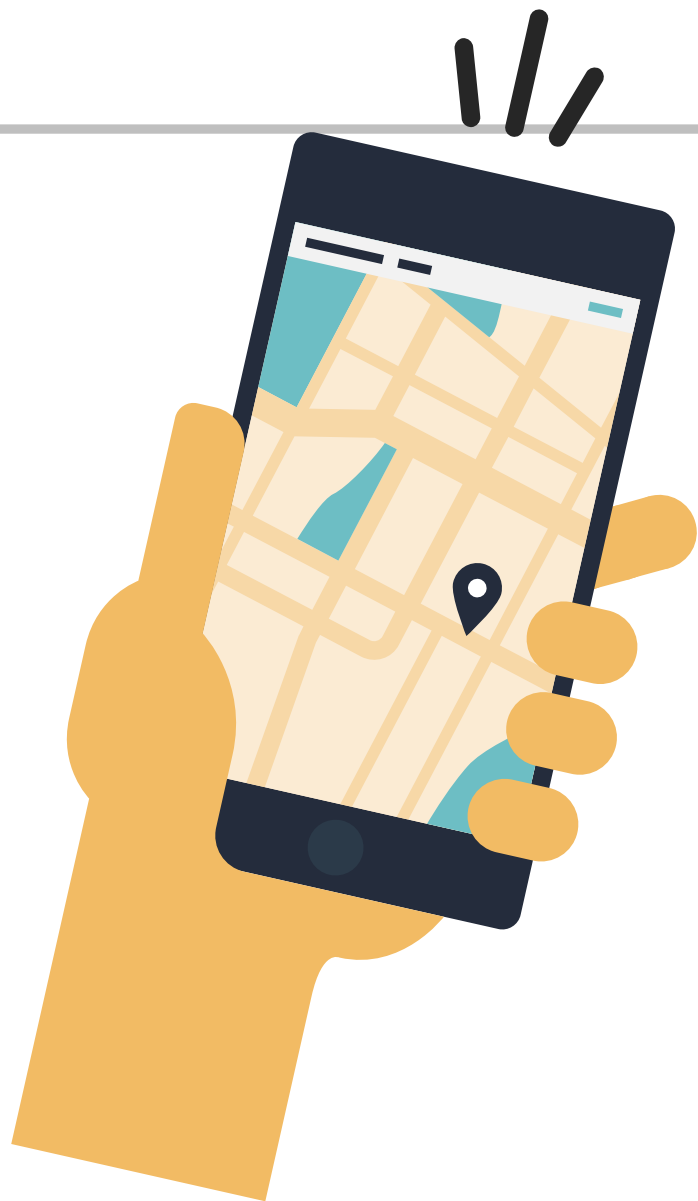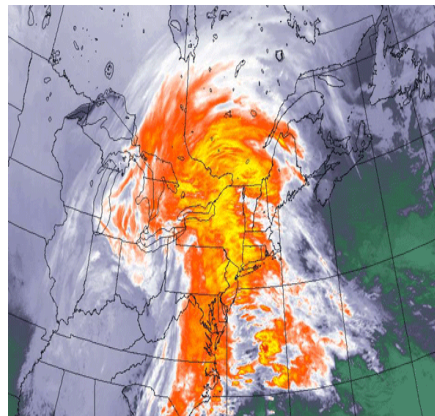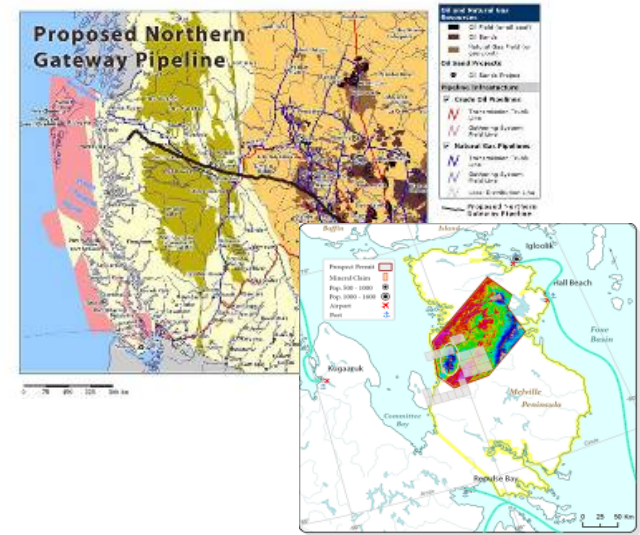➢ To highlight FGP accomplishments and lessons learned to date, specifically as it relates to collaboration

Government of Canada Gouvernement du Canada

Canada

Geospatial data are widely used across the federal government...
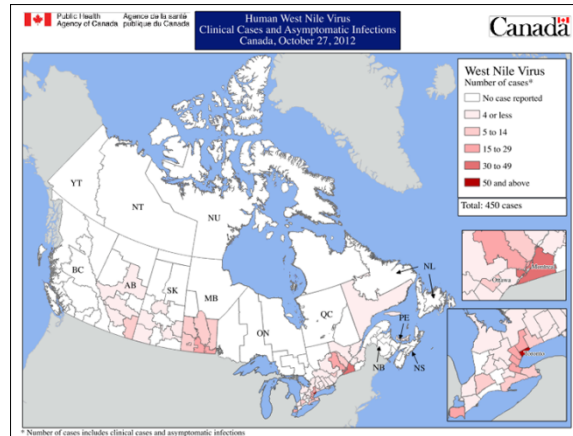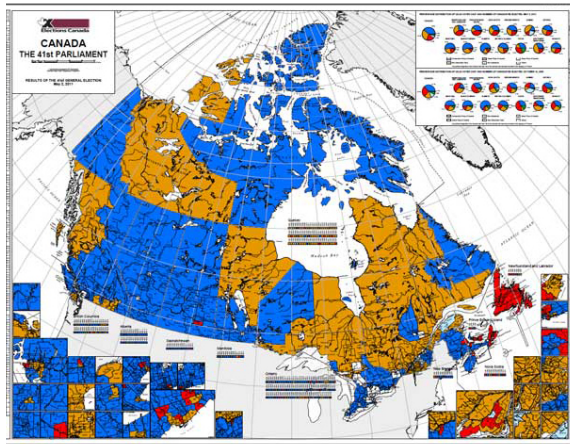
...to support broad national objectives such as economic growth, social cohesion and well-being, and environmental management

...but we were faced with many challenges in realizing the potential of one of our best assets...

➢ no single source to view and analyze federal geospatial data together

➢ sharing, and integration of "trusted" data across the federal family and Canadians <u>was limited</u> – technology, standards, licensing barriers

➢ acquisition and use of geospatial information, services, technology, and expertise by departments and agencies was not well coordinated

➢ difficulty in meeting the rapidly evolving demands of Canadians and industry, within a tight fiscal context, aging infrastructure and public service demographic – innovation and efficiency was required

The Growing Need...
❖ 94% of Respondents reported increasing <u>demand for</u> and <u>use of</u> geospatially related data to meet business requirements.   *Source: FCGEO Survey, May 2012*

...requiring horizontal transformation to provide more integrated, decision support for policy priorities and citizen-centred services

To meet these challenges, FCGEO was established in January 2012…

- to provide proactive, whole-of-government leadership in geomatics and earth observations to better support government priorities

- to collectively enhance the responsiveness, efficiency and sustainability of the federal geomatics and earth observations infrastructure

- to improve access, sharing and integration of geospatial data at all levels (F/P/T and international)

The Federal Committee on Geomatics and Earth Observation (FCGEO)

AAFC	ISED
CanNor	NRCan
CFIA	PC
CSA	PHAC
DFO	POLAR
DND	PS
Elections	RCMP
ECCC	SSC
Health	StatCan
INAC	TBS
	TC

…and launched the Federal Geospatial Platform initiative to capitalize on the full potential of our geospatial assets

The Federal Geospatial Platform was proposed as an enterprise solution that provides…

➢ Comprehensive collection and sharing of **authoritative data**

➢ Search, discovery, access, and visualization tools that are **built once and reused many times,** and enable the user to **search once and find what you need**

➢ Common web-based environment that enables **data integration, analysis, and visualization** to support informed decision-making

➢ **Shared governance and management** of geospatial assets and capabilities, through operational standards and policies, for Canadians

Online Access, Viewing & Analysis enabling easy-view and analytical tools for non–technical users, enabled by web services

gcgeo.gc.ca

open.canada.ca/en/open-maps

fgp-pgf.maps.arcgis.com

FGP Catalogue organizes the information for easier searching

Data Repository stores data from multiple departments

IT Supported by SSC servers and networks

…resulting in operational efficiencies, increased internal productivity, and improved services and value to Canadians

Two years of planning set the stage for project approval…

2012

2013

2014

| Jan 12th | May-June | Oct 11th | Dec-Mar | April | May | July | Sept | October | February | May |

Business Case

FCGEO Survey

Project Charter Data + Tech Teams

Refined Costing Process

TB Submission

FCGEO Inaugural Meeting

Architecture V2

May 1st

Final Project Charter

Data and Technology Integration

Implementation Planning

Readiness Assessment

Presentation to Clerk's BoMR

Departmental Impact Assessment

Architecture V3

Architecture V4

Governance

Project Charter Phase

The Project Charter provided a framework for action...

FGP Distilled Project Charter

Vision

"GEO-ENABLING THE FEDERAL GOVERNMENT"

Business Drivers

- Break down barriers related to technology interoperability, differences in the implementation of standards and licensing
- Timely sharing and integration of geospatial information across the federal family
- A comprehensive inventory of federal geospatial data and information holdings
- Unlocking the potential use and reuse of existing federal government geospatial assets
- Efficient use of decreasing resources while demand for geospatial data is increasing

Goals

1. Better support for decision making
2. Stimulate innovation
3. Increase efficiency and effectiveness in program delivery
4. Support the Open Government Initiative
5. Sound information management

Objectives

1. Provide decision-makers with the capability to visualize multiple layers of integrated, authoritative, cross-disciplinary geospatial information on a common base map, in a timely, efficient manner.
2. Encourage the use of geospatial information and data for product and business process innovation across all sectors, including the public sector, to fuel productivity and growth.

3. Facilitating a coordinated approach to Geomatics thereby reducing duplication of efforts in acquisition and management of geospatial data, tools and services.
4. Supporting Canada's Action Plan on Open Government along the three streams of Open Information, Opens Data and Open Dialogue.
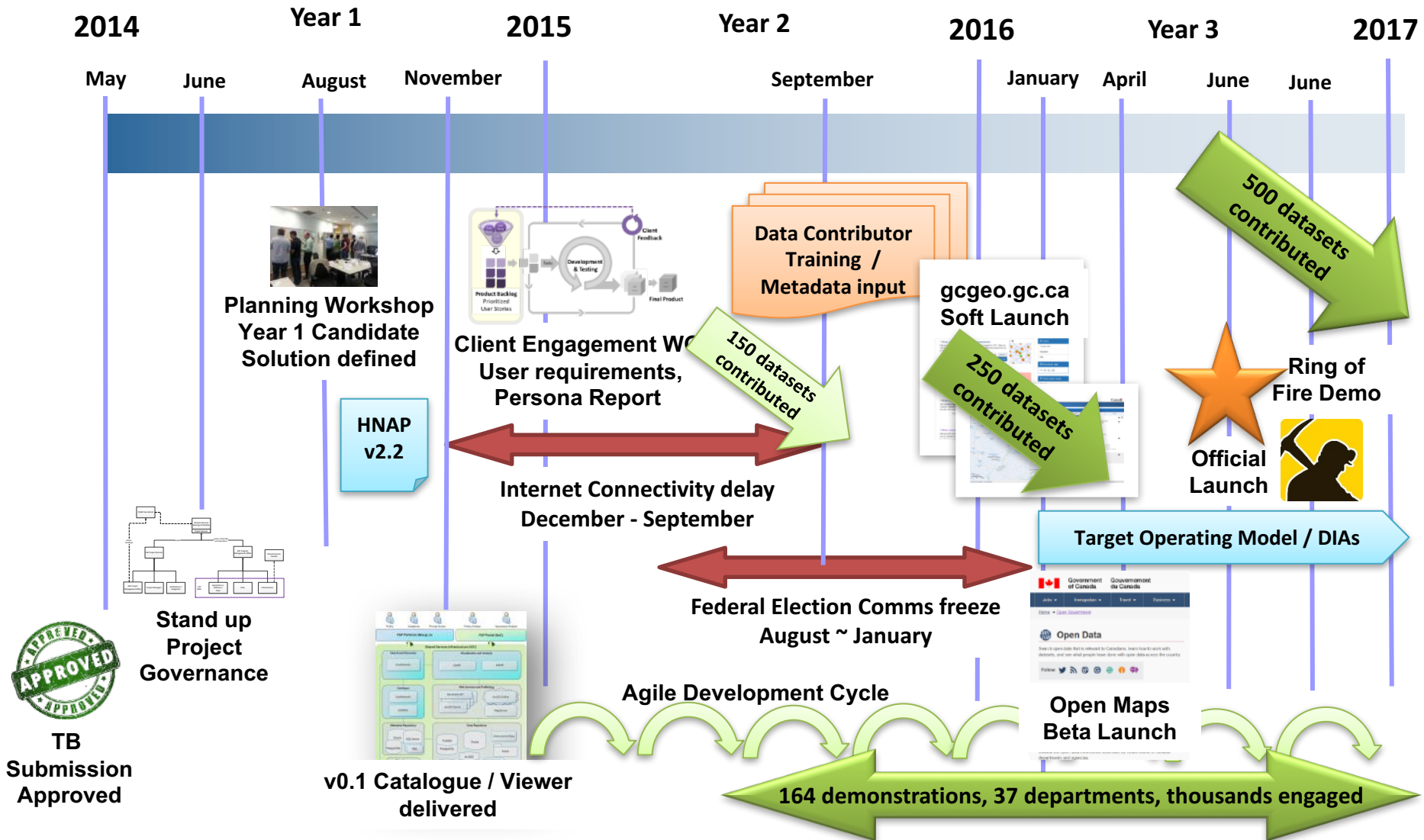5. Design and implement user-centric applications and systems for geospatial data visualization and access.

Outcomes

1.1. Increase number of users of geospatial data,
1.2. Provision of an environment capable of visualisation and analysis,
1.3. Ability to compare/share common datasets across department.
2.1. Increased usability and capability of geospatial data to non-traditional users to create value-added products.
3.1. Standardized sets of business processes, policies and governance on geospatial data and information
4.1. Provision of raw data in machine-readable formats,
4.2. Seamless integration of services,
4.3. The utilization of common architectural components.
5.1. Increase internal and external efficiencies through common streamlined processes and shared services.

Scope

The FGP will build common geospatial capabilities that span departments, enhance interoperability and facilitate decision making. These capabilities will include the integration with the open.canada.ca website as well as other applications, data, services and associated tools. Policies and technical solutions will be put into place to reduce or eliminate duplication and to coordinate purchasing or producing geospatial information.

...to accomplish several milestones over three years...

2014 — **Year 1** — **2015** — **Year 2** — **2016** — **Year 3** — **2017**

May | June | August | November | September | January | April | June | June

Planning Workshop Year 1 Candidate Solution defined

Client Engagement WG User requirements, Persona Report

Data Contributor Training / Metadata input

gcgeo.gc.ca Soft Launch

500 datasets contributed

150 datasets contributed

250 datasets contributed

HNAP v2.2

Ring of Fire Demo

Official Launch

Internet Connectivity delay December - September

Stand up Project Governance

Target Operating Model / DIAs

Federal Election Comms freeze August ~ January

Agile Development Cycle

Open Maps Beta Launch

TB Submission Approved

v0.1 Catalogue / Viewer delivered

164 demonstrations, 37 departments, thousands engaged

...leading to a project that...

➢ Was completed on time and under budget and met/exceeded its targets

➢ Has over 700 datasets, of which over 500 are available on Open Maps
  – Over 100 with data in northern Canada

➢ Has an integrated suite of tools and technologies that enable citizens, business, academia, and government employees to access, view, and analyze the federal collection of accurate and authoritative geospatial information

➢ Supports evidence-based decision-making on a range of complex issues, including:
  – E.g.: Ring of Fire, Water Strategy, Arctic Policy Framework, Cumulative Effect Assessment, Pan-Canadian Framework for Clean Growth and Climate Resilience, Oceans Strategy, Joint UN Declaration on Harnessing Data Revolution for Climate Resilience, OGP 16 Paris Declaration on Open Government in Sustainable Development and Climate Resilience, Integrating Geospatial and Statistical Standards

➢ Has a sustainable operating model for the next two years of platform operations
  – 12-15 federal departmental partners

An overview of FGP components and web presence...

PUBLIC

Targeted Users
Canadians, Academia, Industry

Public - Internet

GC - Intranet

FEDERAL GOVERNMENT

Targeted Users
Policy / Data Analysts
Geo-Professionals
Managers
Researcher
Subject Matter Expert

Open Maps
open.canada.ca/en/open-maps **2**

Collaborative Mapping Environment
fgp-pgf.maps.arcgis.com **3**

Authenticated Access
Map / App development
Spatial analysis tools

ArcGIS Online

Catalogue and Viewer Applications

Common Service Desk

Data / Metadata publication processes

GC Intranet
gcgeo.gc.ca **1**

Catalogue

Metadata management

Data Repository

Centralized Data / Web Service Access

Departmental Data Contributors:
- Data Stewards
- Researcher
- Subject Matter Expert

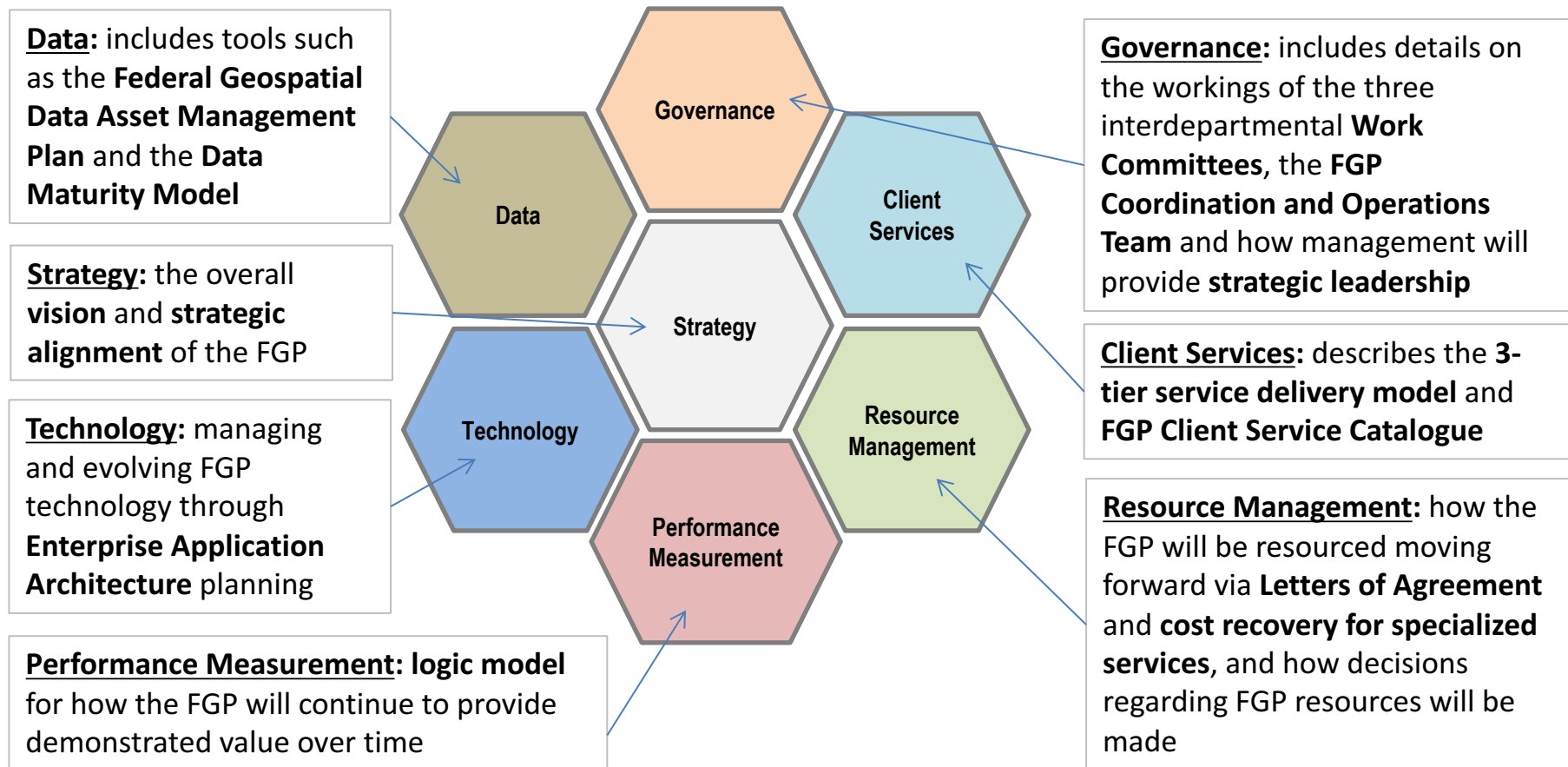# Lessons learned leading a collaborative initiative...

➢ People are the biggest obstacle to collaboration

➢ Communicate, Communicate, Communicate

➢ Organizational change is hard

➢ Number one thing that makes a project work: Leadership

Lessons learned leading a collaborative initiative...

➢ Quality over quantity

➢ Buy once, use many times

➢ Don't move at the pace of the slowest collaborator

➢ Put the user first

Our response to the collaborative woes:
A Concept of Operations

The Concept of Operations articulates the concept model for the FGP as we transition from project top operational status:

Data: includes tools such as the **Federal Geospatial Data Asset Management Plan** and the **Data Maturity Model**

Strategy: the overall **vision** and **strategic alignment** of the FGP

Technology: managing and evolving FGP technology through **Enterprise Application Architecture** planning

Performance Measurement: logic model for how the FGP will continue to provide demonstrated value over time

Governance: includes details on the workings of the three interdepartmental **Work Committees**, the **FGP Coordination and Operations Team** and how management will provide **strategic leadership**

Client Services: describes the **3-tier service delivery model** and **FGP Client Service Catalogue**

Resource Management: how the FGP will be resourced moving forward via **Letters of Agreement** and **cost recovery for specialized services**, and how decisions regarding FGP resources will be made

Governance
Data
Client Services
Strategy
Technology
Resource Management
Performance Measurement

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FGP Concept of Operations: Principles...

Governance is inclusive and distributed:

➢ ensures that all partners play a role in the operation and strategic direction

➢ provides avenues for input from partners, supporters, clients and stakeholders

➢ allows for effective decision making, and provides the necessary channels to communicate these decisions to partners

Data and Technology is collaboratively managed:

➢ through collective governance and shared standards

➢ interoperability is assured through shared requirements

➢ originating organizations are accountable for data stewardship

Federal Arctic / Northern Data in the FGP

Natural Resources Canada:

➢ Canada Lands, Inuvialuit lands, Inuit Owned Lands, Yukon FN lands

➢ Major Projects Inventory, Top 100 Mineral Exploration Projects, Indigenous Mining Agreements, North American Cooperation on Energy Information

➢ Canadian National Fire Database, Fire Season Length

➢ High Resolution Digital Elevation Model - *coming December 2017*!

Indigenous and Northern Affairs Canada:

➢ Inuit Regions, Inuit Communities, Community Well-Being Index, Targeted Investments in FN Community Infrastructure, Aboriginal Agreements, Oil and Gas Rights, Mineral Tenure

Fisheries and Oceans Canada:

➢ Ecologically and Biologically Significant Areas, Oceans Act Marine Protected Areas and Areas of Interest, Federal Marine Bioregions

➢ Critical Habitat of Species at Risk, Sea pens, gorgonian corals, sponges

Environment and Climate Change Canada:

➢ Arctic Drainage Areas, Active discharge stations

Canadian Northern Economic Development Agency:

➢ Northern Major Projects Inventory
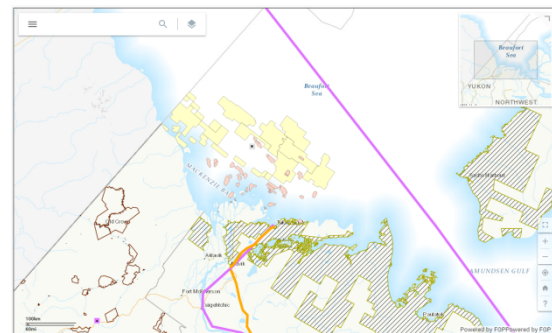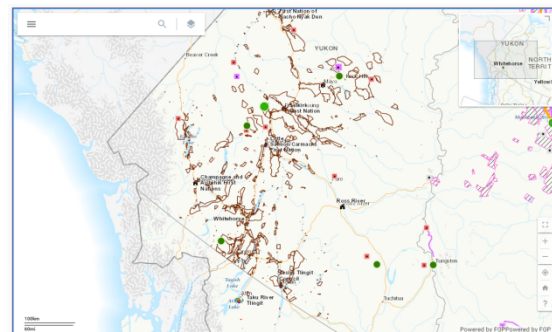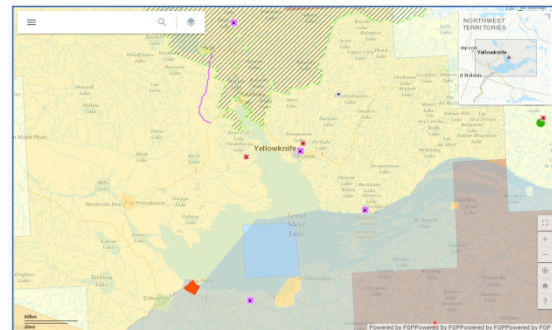
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# ANNEX A: The FGP in a live demonstration

The Situation:

➢ November 2016 - The Clerk of the Privy Council and several federal Deputy Ministers met with their Government of Ontario counterparts to discuss the Ring of Fire, a proposed mining project in northern Ontario

FGP Integration:

➢ The discussion, which was focused on resource development opportunities in the region, was supported by geo-data displayed through the FGP and using the FGP as a decision tool.

➢ The FGP leveraged its governance to engage existing and new partners (e.g. HC, ESDC, INAC, the Government of Ontario, etc.) to make relevant data available.

➢ The FGP interactive demonstration provided situational context for senior-level decision-making

Results:

➢ The Clerk of the Privy Council recognized the significant value of the Platform and asked that additional layers of socio-economic data be made available through the FGP

➢ This prompted the addition of new data layers to FGP

➢ This also opened the door to discussions with other departments, with socio-economic data, resulting in new partnerships (Stats Canada, PHAC, etc.)
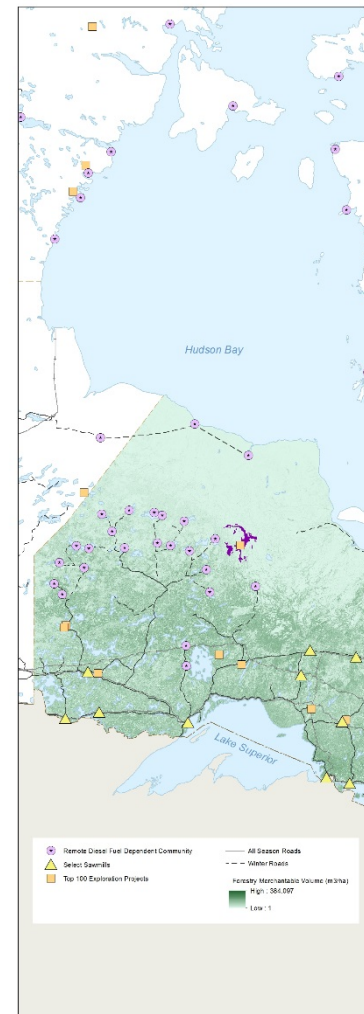
ANNEX B: Budget 2017 - Data Initiatives

- ➢ Canada's Innovation Economy
  - Establishing a Clean Technology Data Strategy and the Clean Growth Hub
    - **Create a clean technology data strategy ($14.5M /4yrs-NRCan)**
    - **Establish a clean growth hub ($12M /4yrs-ISED)**
- ➢ Create Canada's Clean Growth Economy
  - Delivering Results with the Canada Infrastructure Bank ($35B 11yrs)
    - **Better Decisions Through Better Data** (to be developed in coming months, StatCan with F/P/T)
  - Celebrating and Protecting Our Natural Heritage
    - **Completing the Trans Canada Trail ($30M/5yrs-PC)**
    - **Protecting Canada's Marine and Freshwater Ecosystems (i.e. Oceans Protection Plan; $1.5B announced Nov. 2016-TC/CCG)**
  - The Pan-Canadian Framework on Clean Growth and Climate Change
    - Adaptation and Climate Resilience
      - **Canadian Centre for Climate Services ($55.5M/5yrs-ECCC)**
    - **Policy, Communications and Engagement ($135.4M/4yrs-ECCC and NRCan)**
- ➢ Building an Inclusive National Housing Strategy
    - **Strengthening Housing Research and Establishing a Housing Statistics Framework ($39.9M/5yrs-StatsCan)**
- ➢ Delivering Better Transportation to Support Trade
    - **Trade and Transportation Information System ($50M/11yrs-TC)**

The FGP enables geospatial data and metadata to be made available to the public via Canada's Open Government Portal

- ➤ Canadians can search for and view geospatial data on a map
- ➤ Mechanisms and sign-off protocols comply with the requirements of the Directive on Open Government

open.canada.ca/en/open-maps

Open Data

Public

Search / Discover
L2 approved metadata
via Open Data Web page

Publication L2

Workspaces

FGP-
Internal

Create / Load
Metadata

GcGeo.gc.ca

Search / Discover
L1 approved metadata
via GCGeo Web page

Government
employees

Publication L1