Proposal for a Canadian Historical GIS Network

CARTO 2013
June 14, 2013
Edmonton, Alberta

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Abstract

Historical GIS Projects are gaining in popularity across Canada. Later this year a book will be published by the University of Calgary Press featuring fourteen such projects spanning the entire country. With this increase in use in historical geospatial data, comes the impetus to ensure that nobody is reinventing the wheel, or better yet re-digitizing the wheel. Historical census polygons, historical urban street and building data, historical national infrastructure data such as the building of the railway and the highway networks, historical topographic map layers - these are data layers that have been created and recreated by numerous projects. They should not have to be re-created anew every time researchers in a different part of the country start an historical study. Without a set of standards and protocols for creating, sharing, distributing, crediting, and archiving these data however, it is difficult to rationalize this process. We look at some examples which may be useful models for such a system, and hope to inspire debate on potential methods for development and funding.

Intro

One of the challenges associated with this presentation is a basic one… what to call it… We still haven't decided on the appropriate name for this idea… Canadian Historical GIS System? Or Network? Or Infrastructure? Whatever we call it, we are talking about the creation of basic resources, an enabling infrastructure, to allow and empower people to do Historical GIS in Canada.

Considering this is a cartographers and map librarians conference we have seen a huge proportion of presentations this week using Historical GIS – just look at the program – Morgan Hite, Rebecca Bartlett, David Malaher and Andreas Korsos, Frank Tough, Kisha Supernant, and others – clearly there is a lot of work being done using HGIS in Canada, even within this small group.

Wouldn't it be great if, as a group, we could help provide these and many other researchers with the basic resources to help them do this work more easily, efficiently? And if these researchers, after creating new resources – digitizing historical road networks, georeferencing old maps – could contribute them back to the community for others to use in the future? That's the idea.

Click on Bubble at top left to view Speakers Notes

What is Historical GIS? it's more than:

- Scanned maps
- Thematic maps
- Conventional GIS

HGIS is

"…new knowledge and new scholarship about the geographies of the past."

Ian Gregory, 2008

HGIS is

GIS resources designed for doing history

- Time, space, data, documentation, visualization

But…

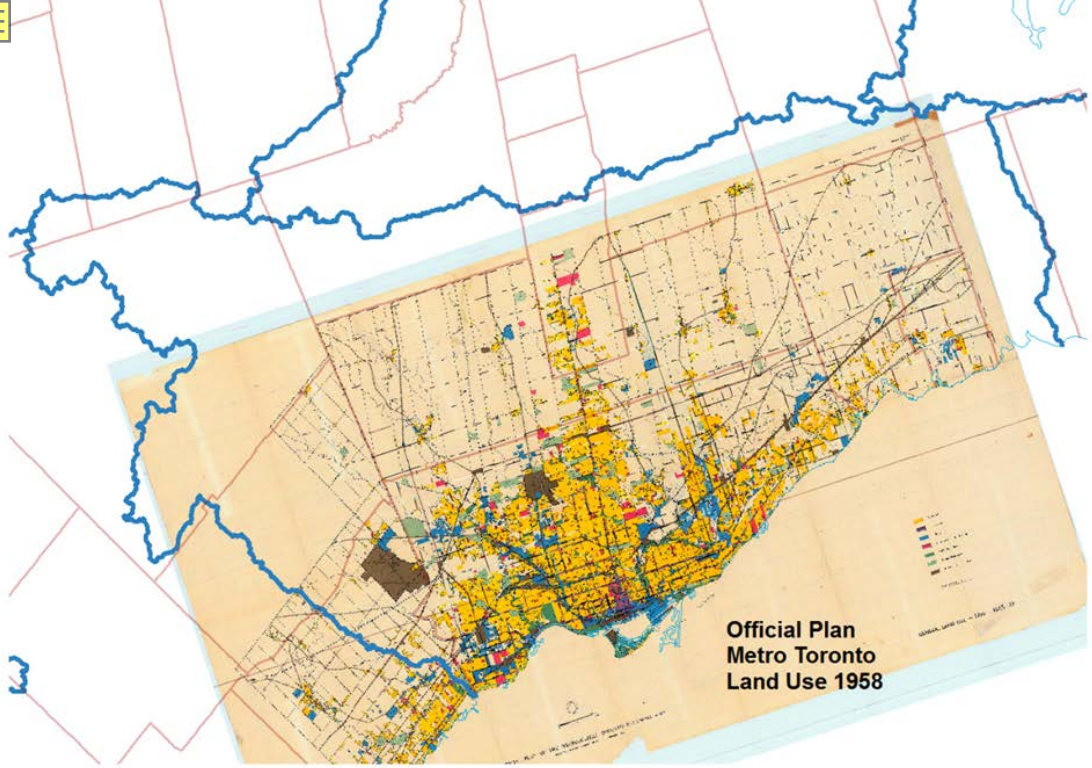

BELL ST.
TERRACE
DON
RIVER
CRAWFORD
HAMILTON
MUNROE
MILL ST.
TORONTO

Historical GIS question?

[someone]... suggested you may have datasets for the Greater Toronto area relevant to research I am undertaking on hydrologic response to land use change and associated aquatic biodiversity decline. I am interested in GIS files that provide current and historic land use information in the Humber and Don watersheds...

Data on road density or land use change (e.g. proportions of forested, wetland, agricultural, residential, industrial, etc) would be very relevant. I am working with a hydrologic-climatic dataset that spans from mid-century to the present. So land use or road density information dating from the 1950's to the current day is of interest.

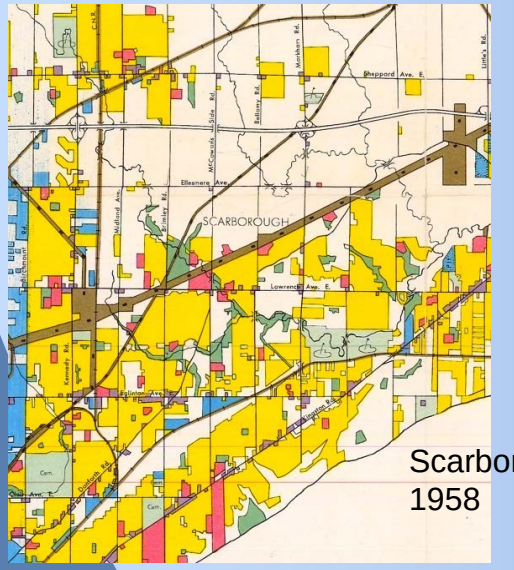
Historical Land use from Official Plans



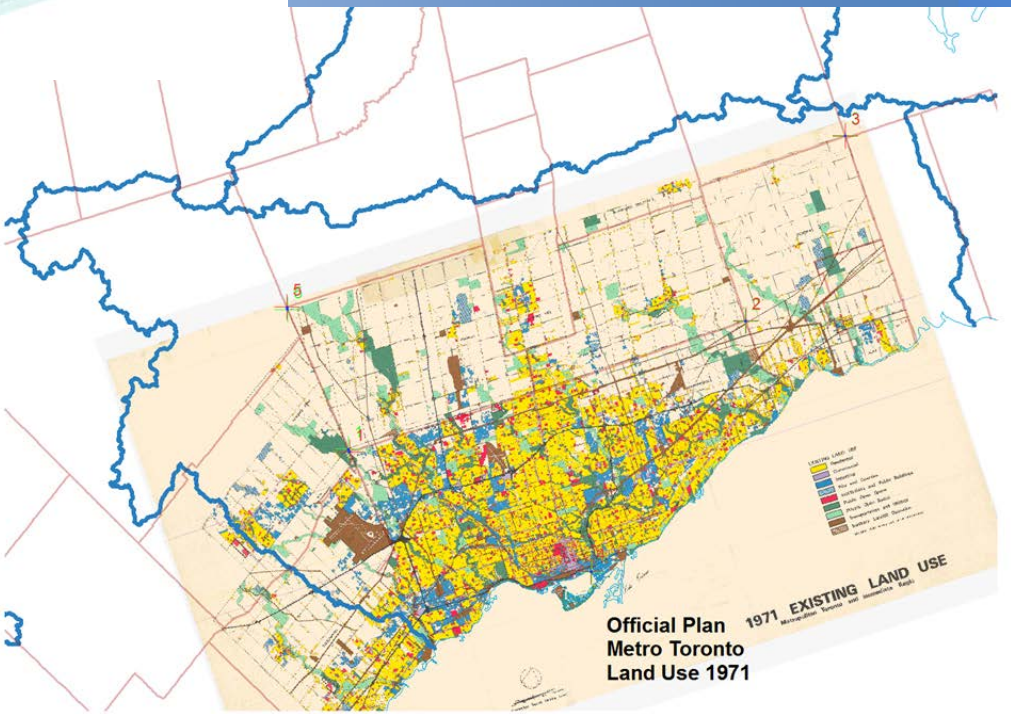
EXISTING LAND USE

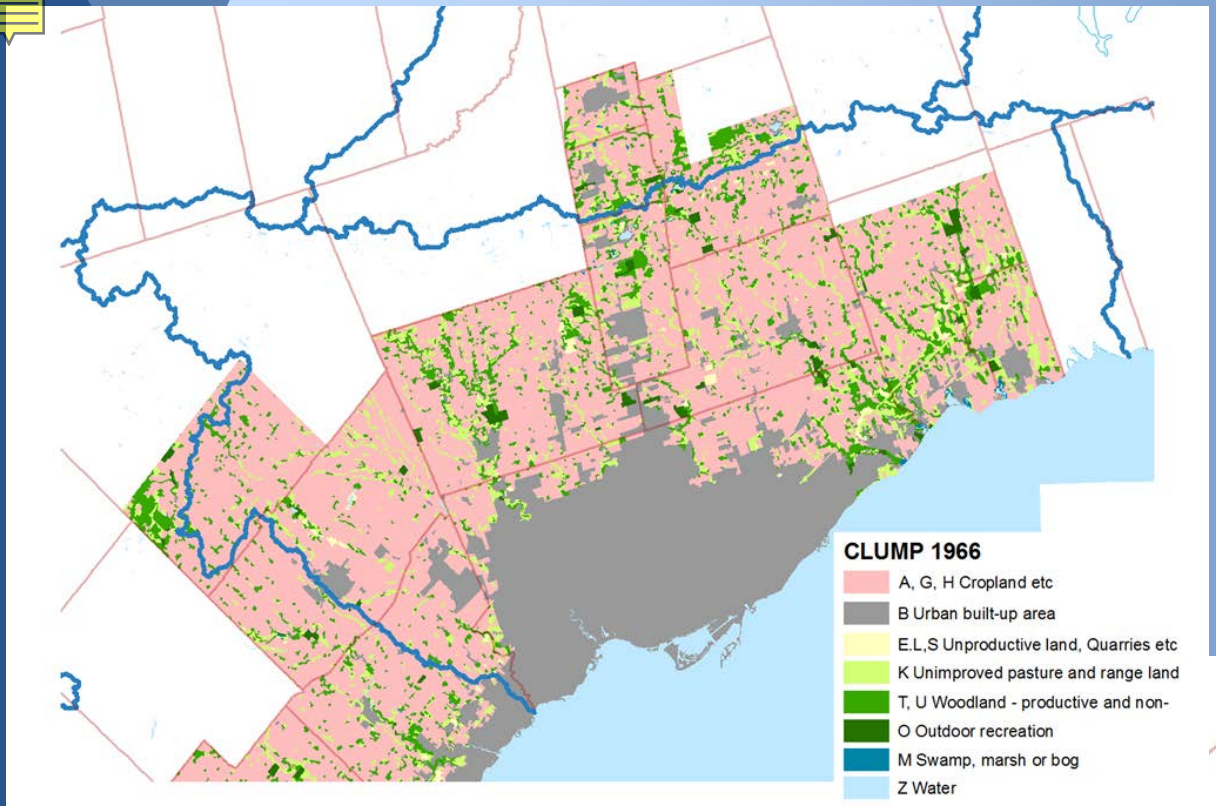
- Residential
- Commercial
- Industrial
- Pits and Quarries
- Institutions and Public Buildings
- Public Open Space
- Private Open Space
- Transportation and Utilities
- Sanitary Landfill Operation

SOURCE: Field survey and aerial photography



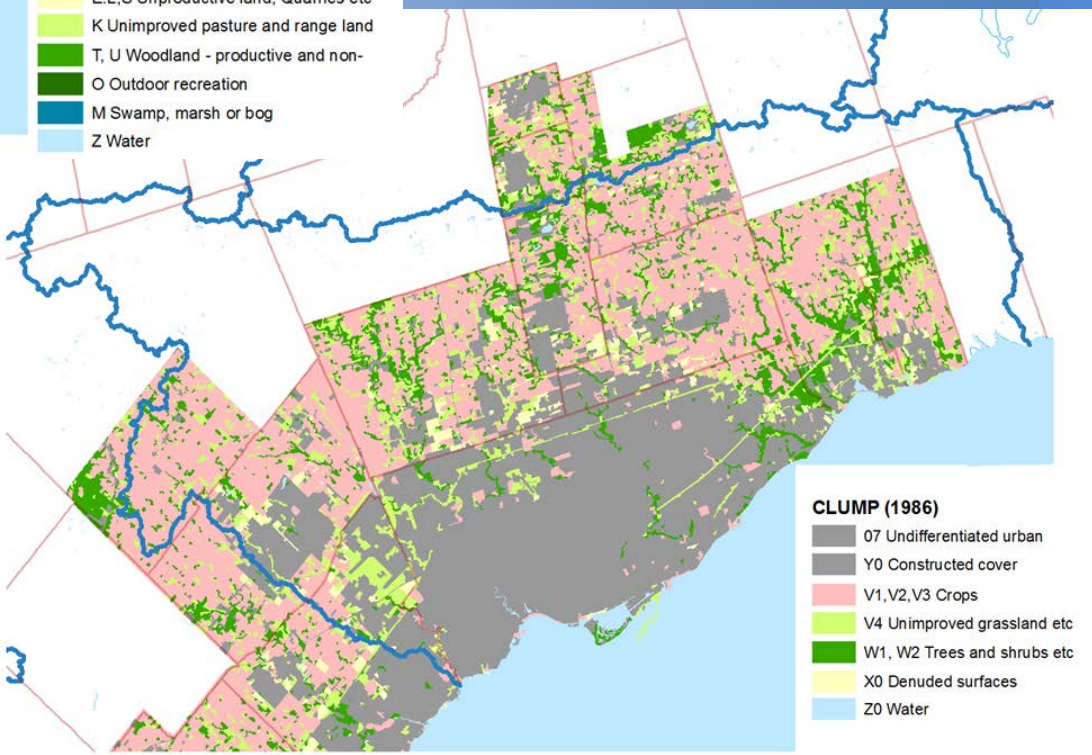
Scarborough
1958

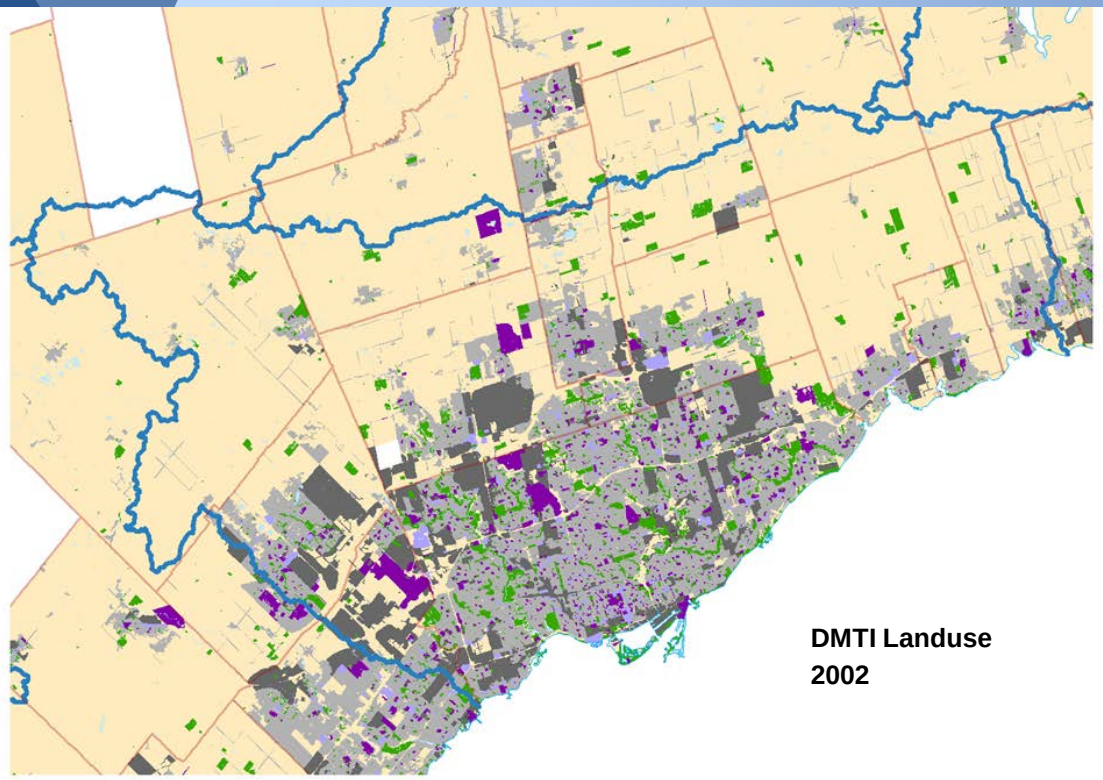




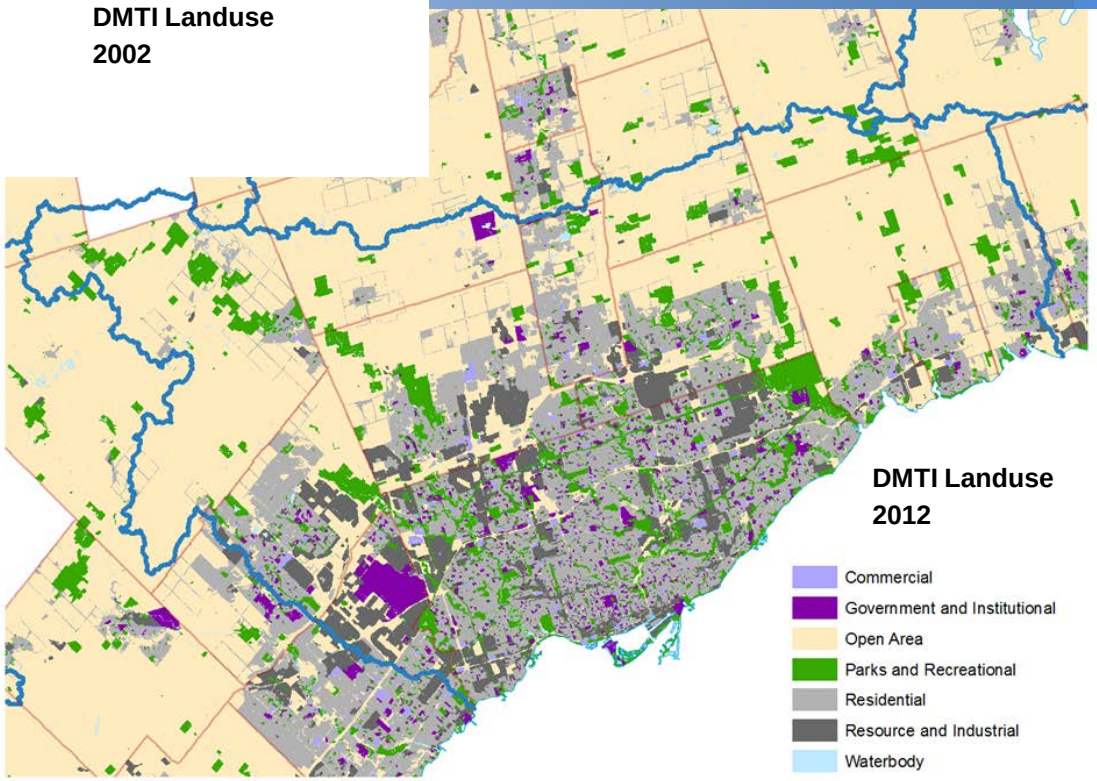
CLUMP
Canada Land Use Monitoring Program

Methodological changes after 1981





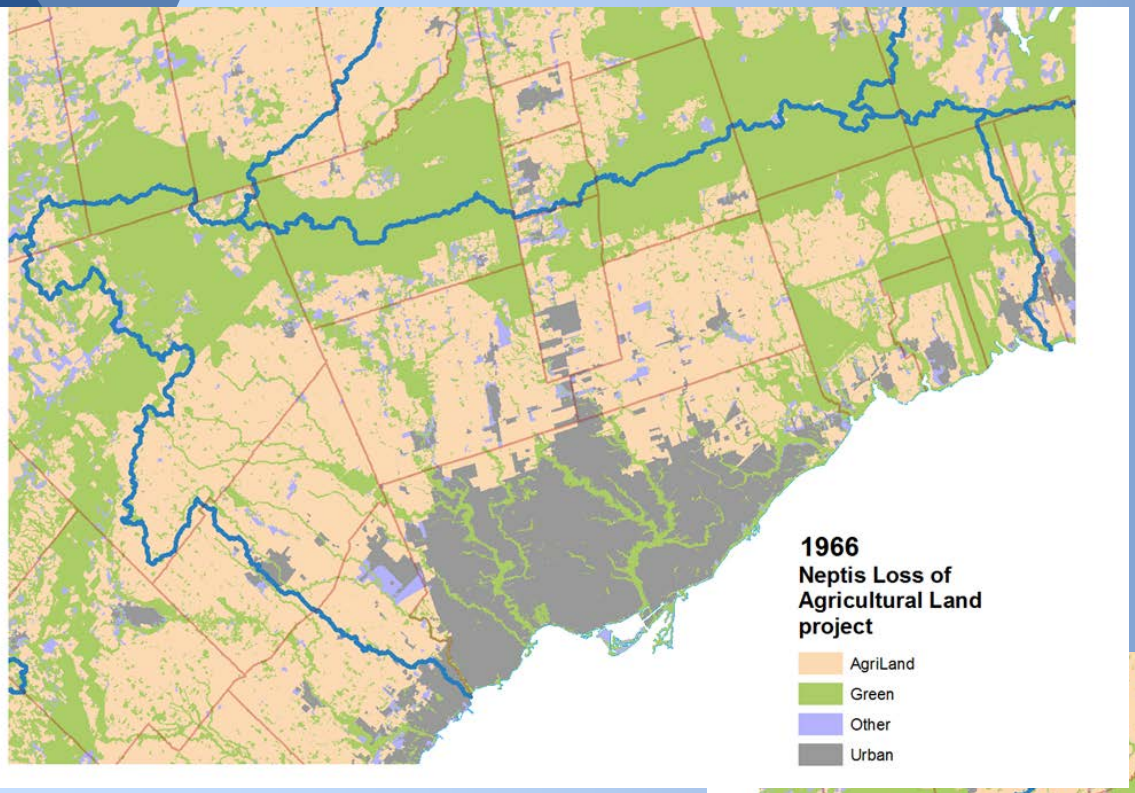
DMTI Landuse
2002

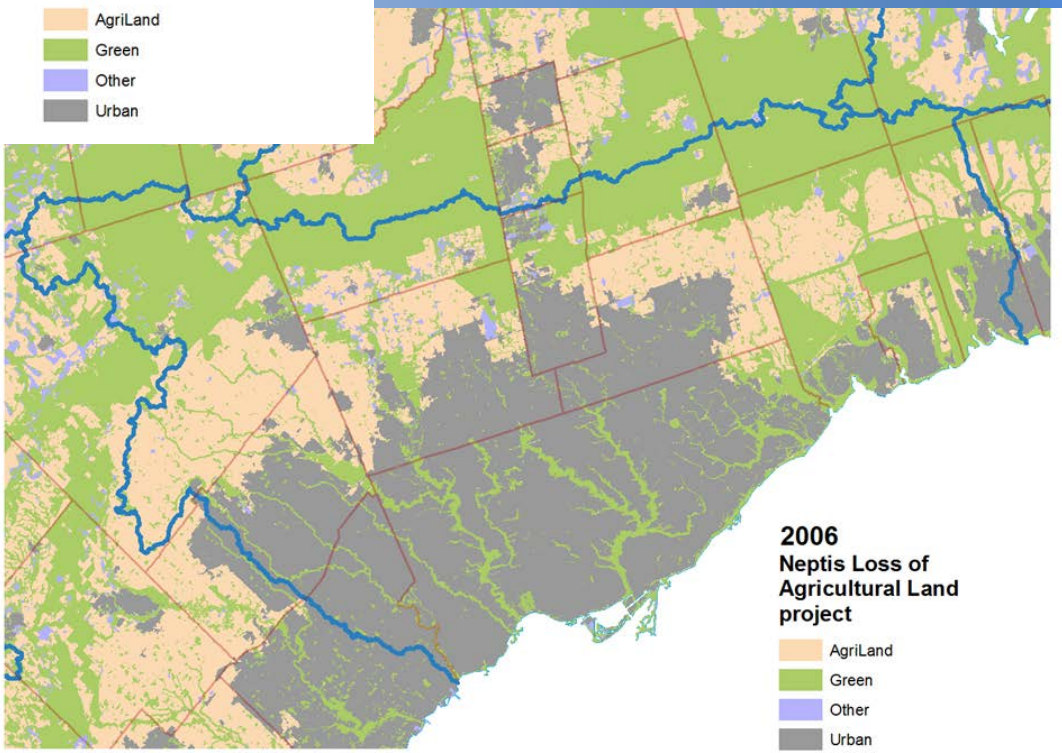


Landuse from DMTI or other commercial data provider

Remote sensed imagery and analysis

Project-based research results





CUrLUS Canadian Urban Land Use Survey

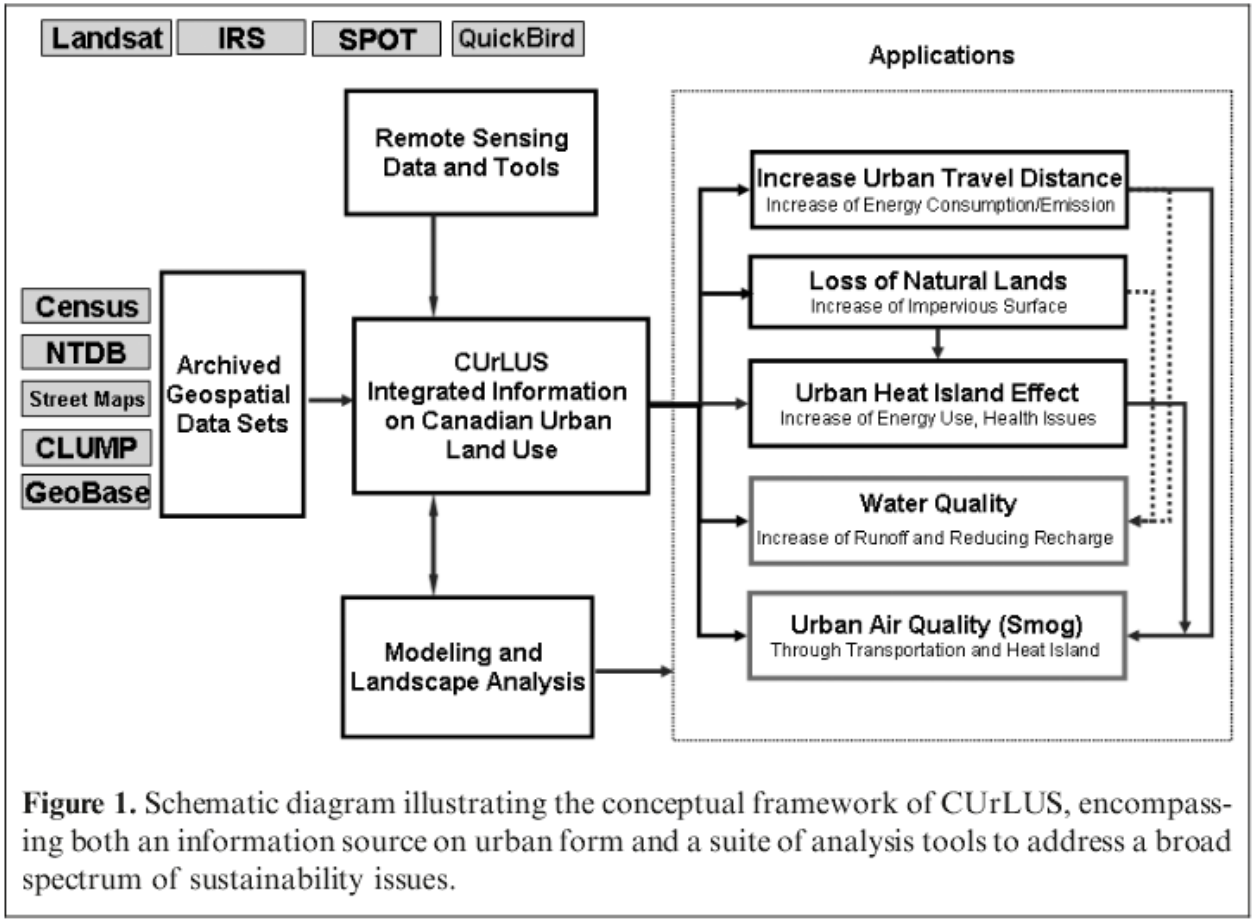
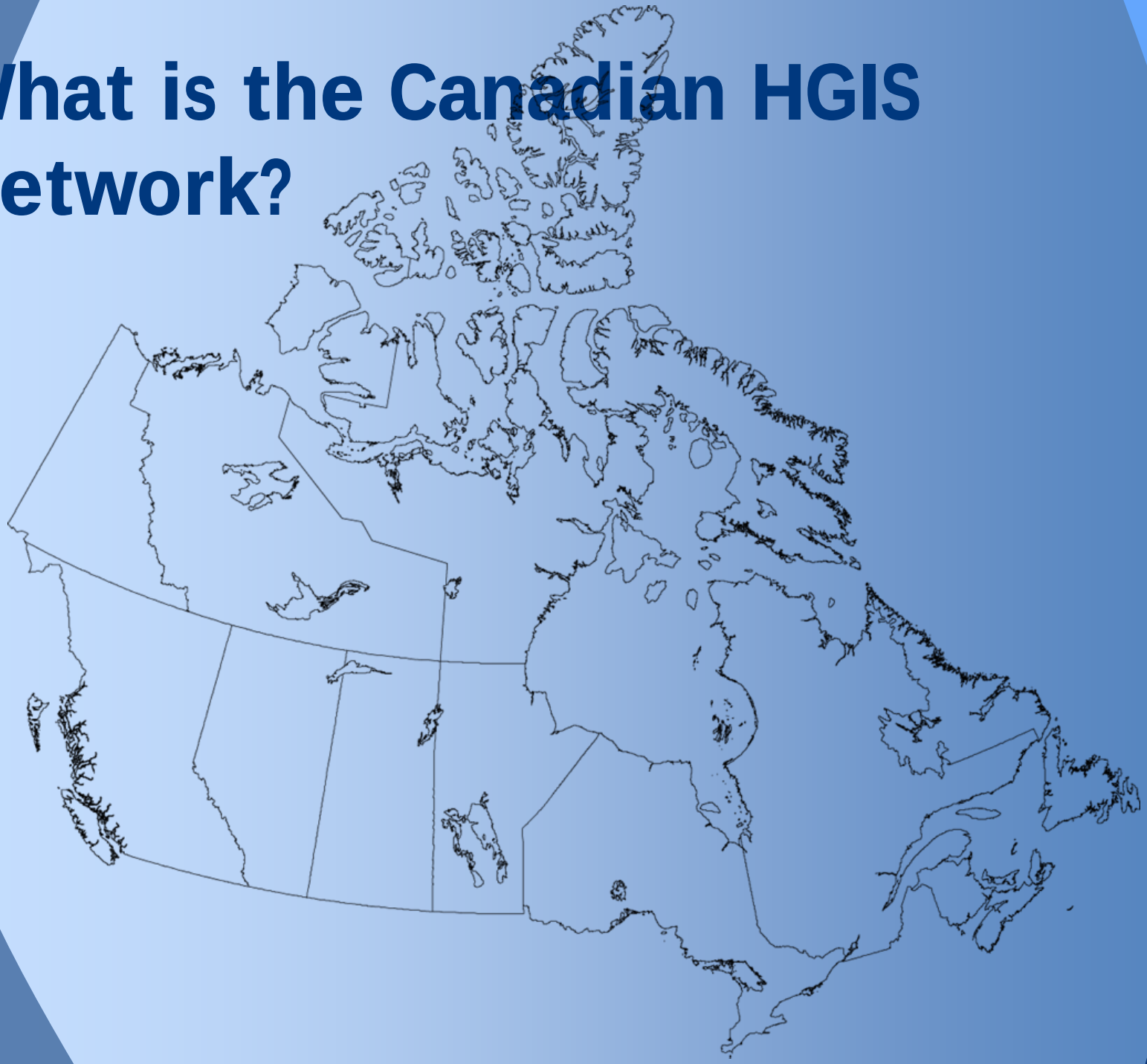


Figure 1. Schematic diagram illustrating the conceptual framework of CUrLUS, encompassing both an information source on urban form and a suite of analysis tools to address a broad spectrum of sustainability issues.

Concepts and application of the Canadian Urban Land Use Survey
Can. J. Remote Sensing, Vol. 36, No. 3, pp. 224-235, 2010
Y. Zhang, B. Guindon, K. Sun CCRS/NRCan

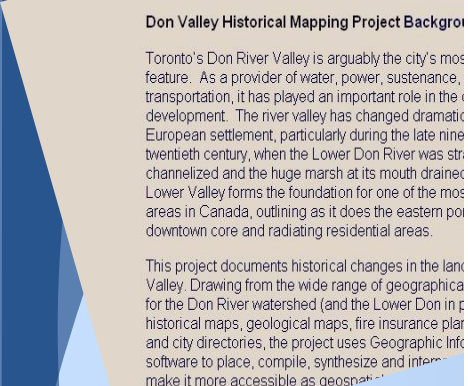
What is the Canadian HGIS Network?

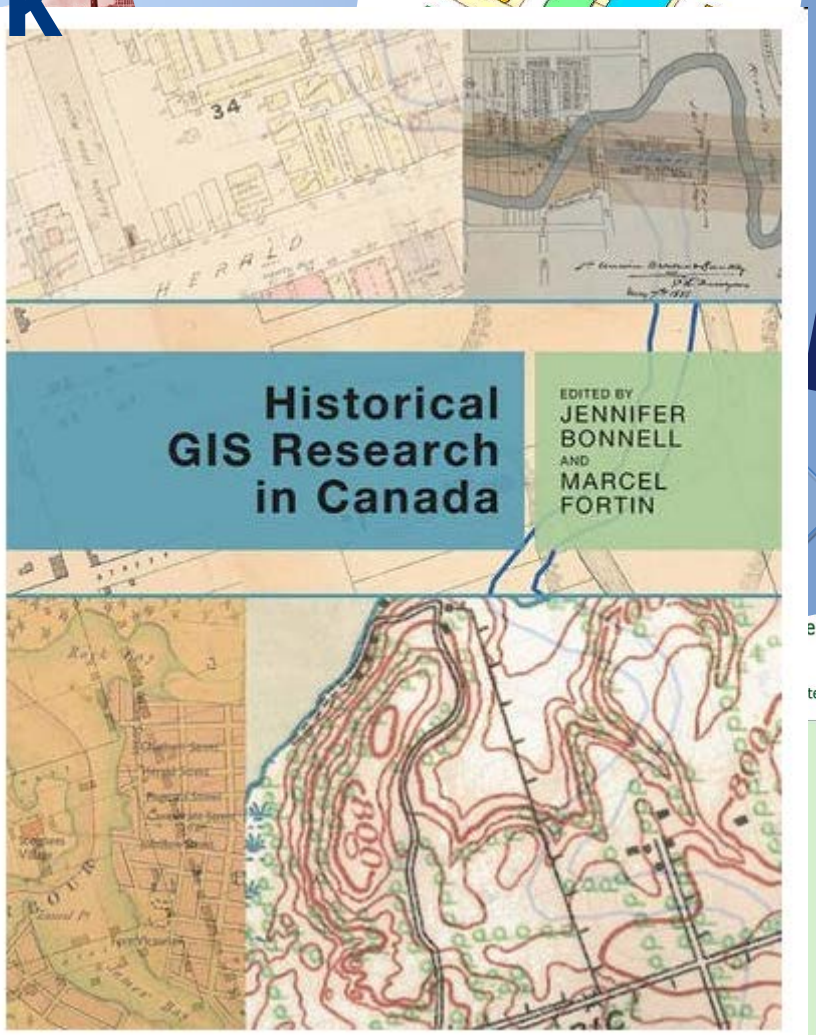


Goals of a Canadian Historical GIS Network?

- enable research and communication (between researchers and public)
- share resources
- avoid duplication / “re-digitizing the wheel”

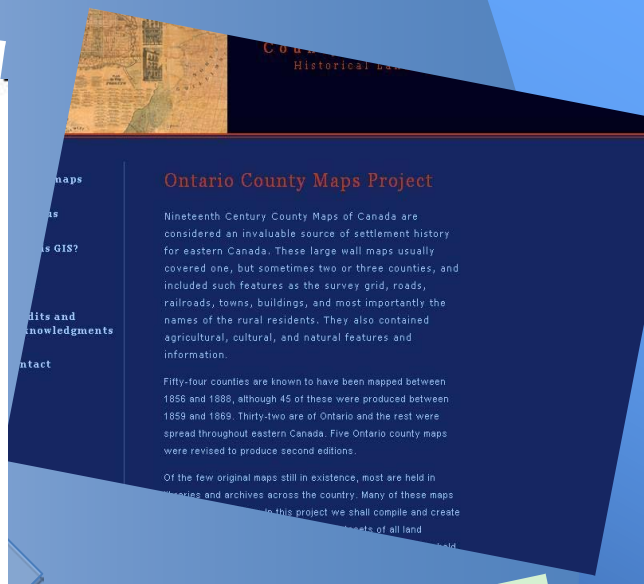
Goals of a Canadian Historical GIS Network



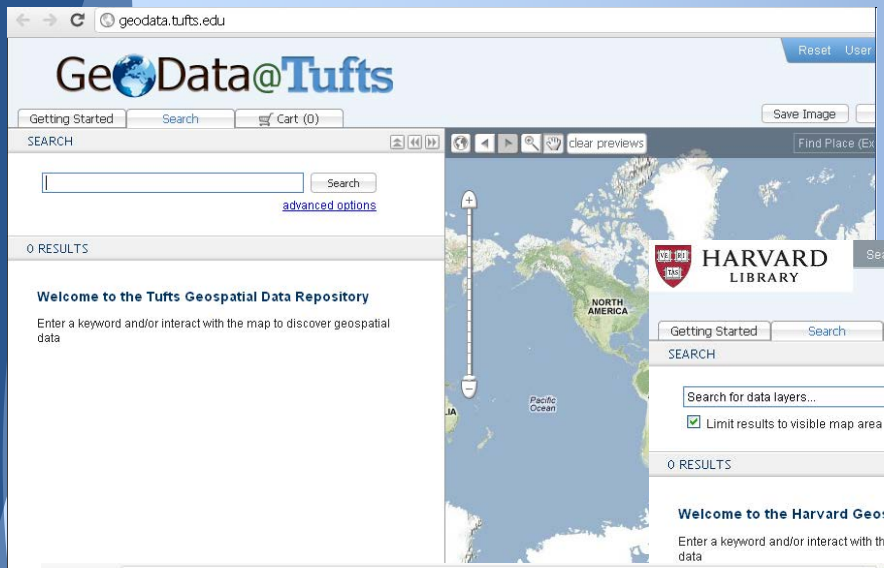


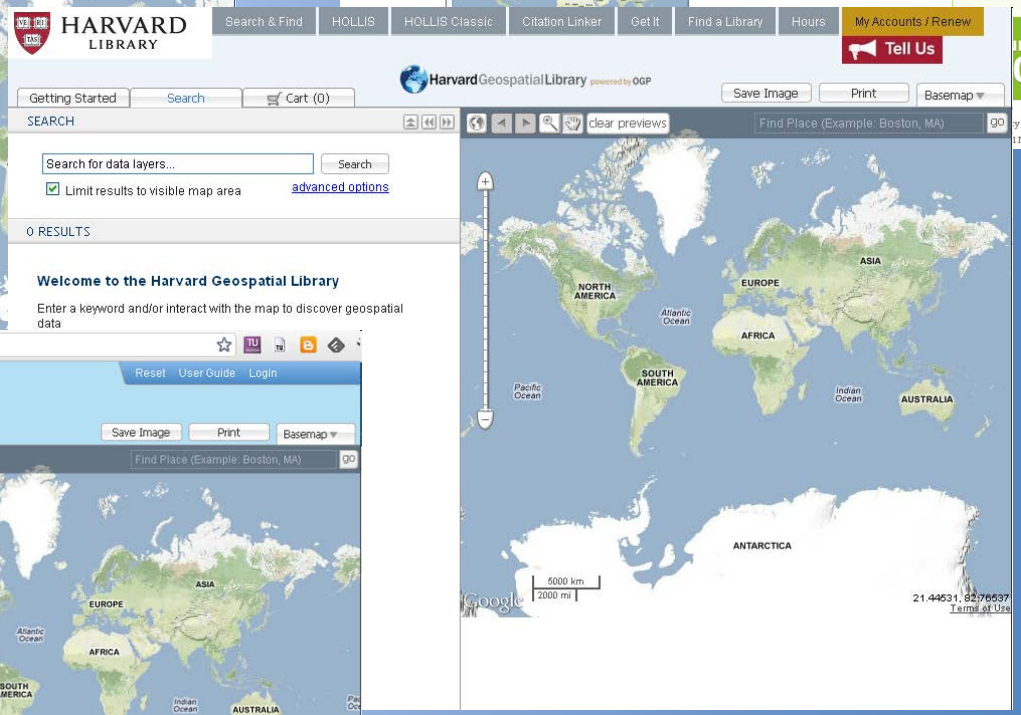
* A few of our recent historical GIS projects are described below.
Contact Dr. Gilliland if you would like to learn more about how you
might work with us.

FIRE AND URBAN MORPHOGENESIS
The built environment of a city is extremely durable and

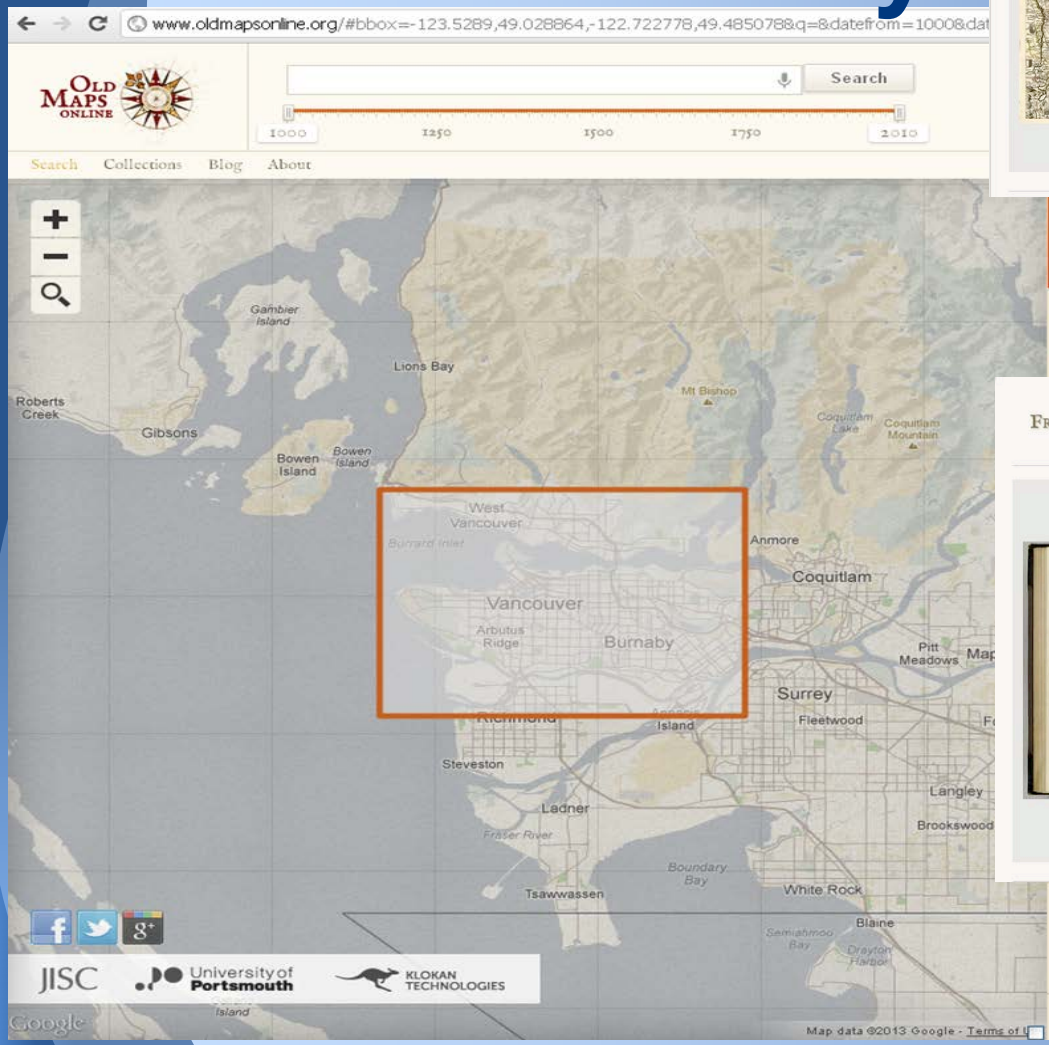


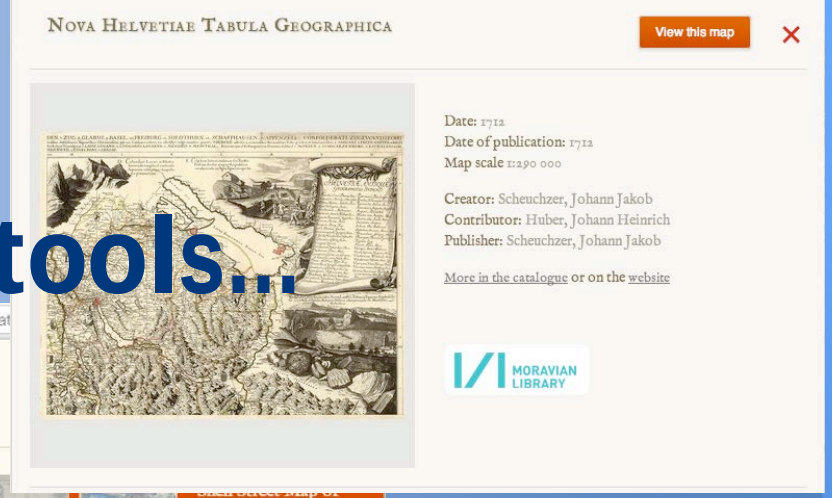
Shared Data discovery tools

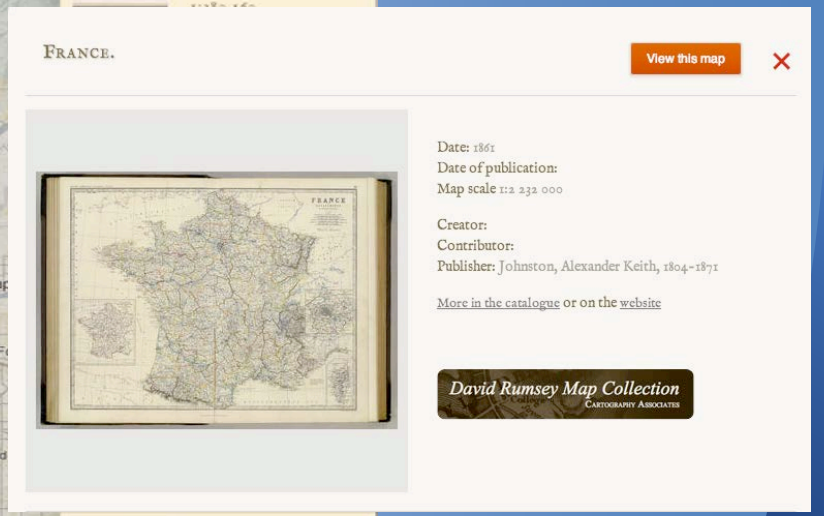




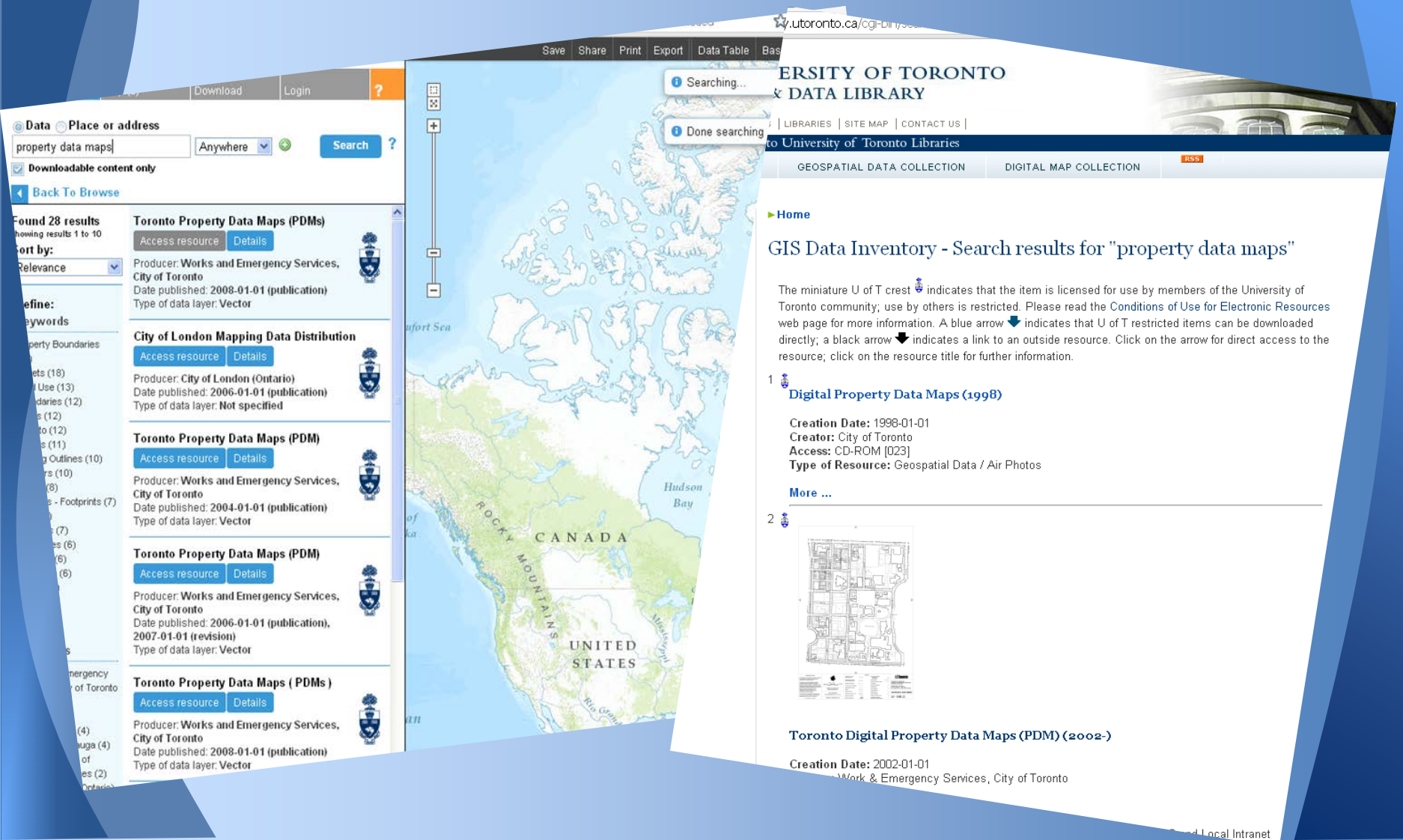
Shared Discovery tools...







Tying in existing systems



Standards


www.opengeospatial.org
Have an Idea?
INSPIRE
What is the OGC?
OGC
Making location count.
Home
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Programs
Participate
News & Events
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Built Environment & 3D
Business Intelligence
Defense & Intelligence
Emergency Response & Disaster Management
Geosciences & Environment
Government & Spatial Data Infrastructure
Mobile Internet & Location Services
Sensor Webs
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Earth Observation
Analysis
Crowdsourcing
Navigation
CAD
BIM
Open Source
Proximity
Global
GIS
Place
Spatial Policy
Open
Points of Interest
Where
Monitoring
Location
Hydrology
Sensor Web
Linked Data
Geoweb
Map
Interoperability
Share
Open Data
Shared Understanding
Geosemantics
Information Integration
Time
Planning
Geosynchronization
SDI
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Visualization
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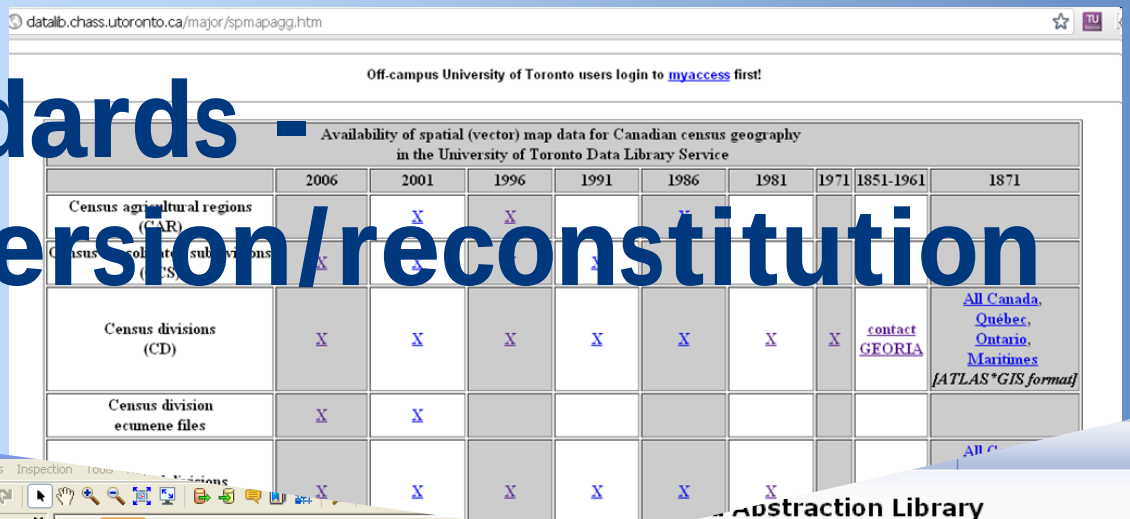
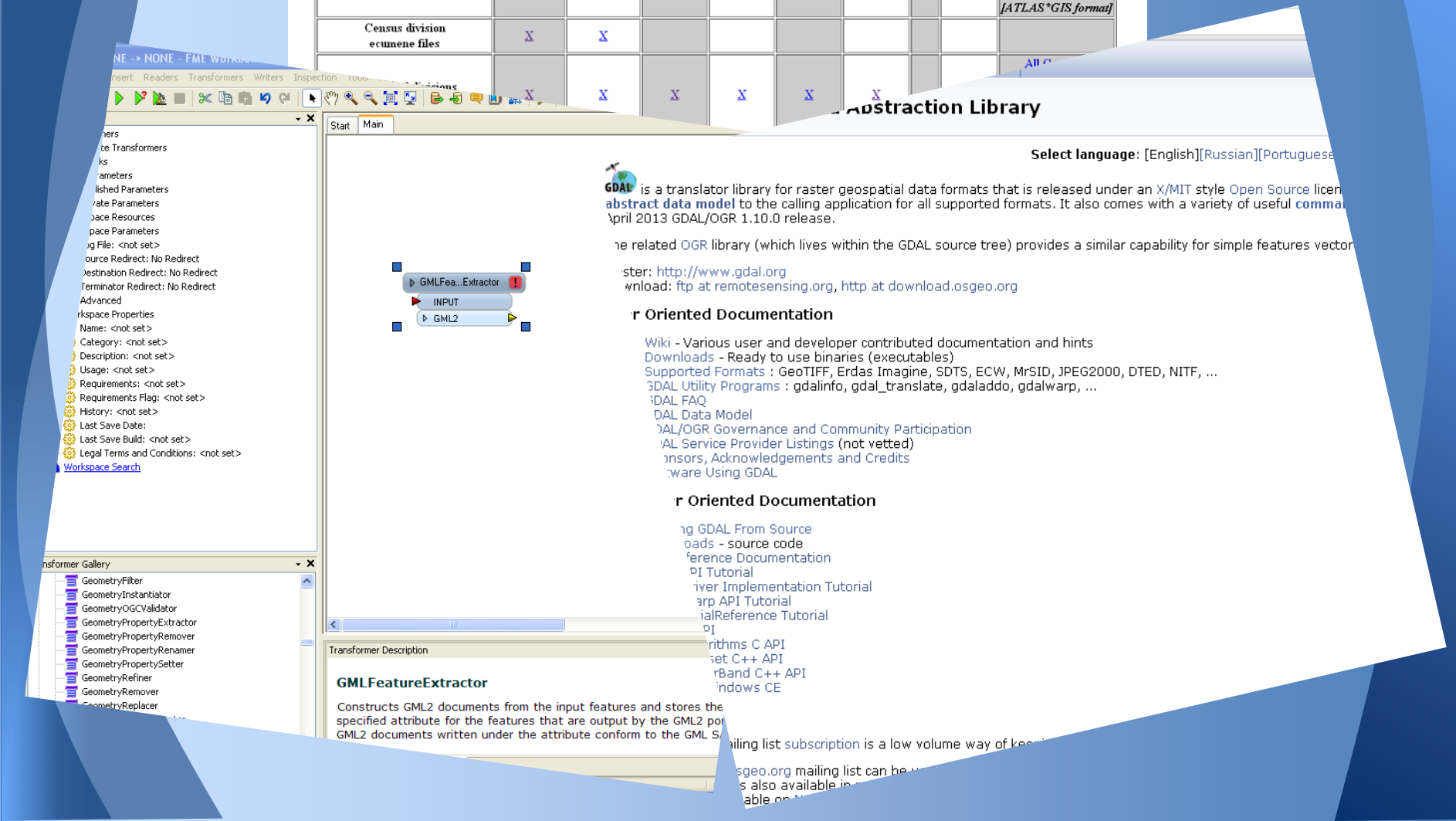
Standards - Metadata

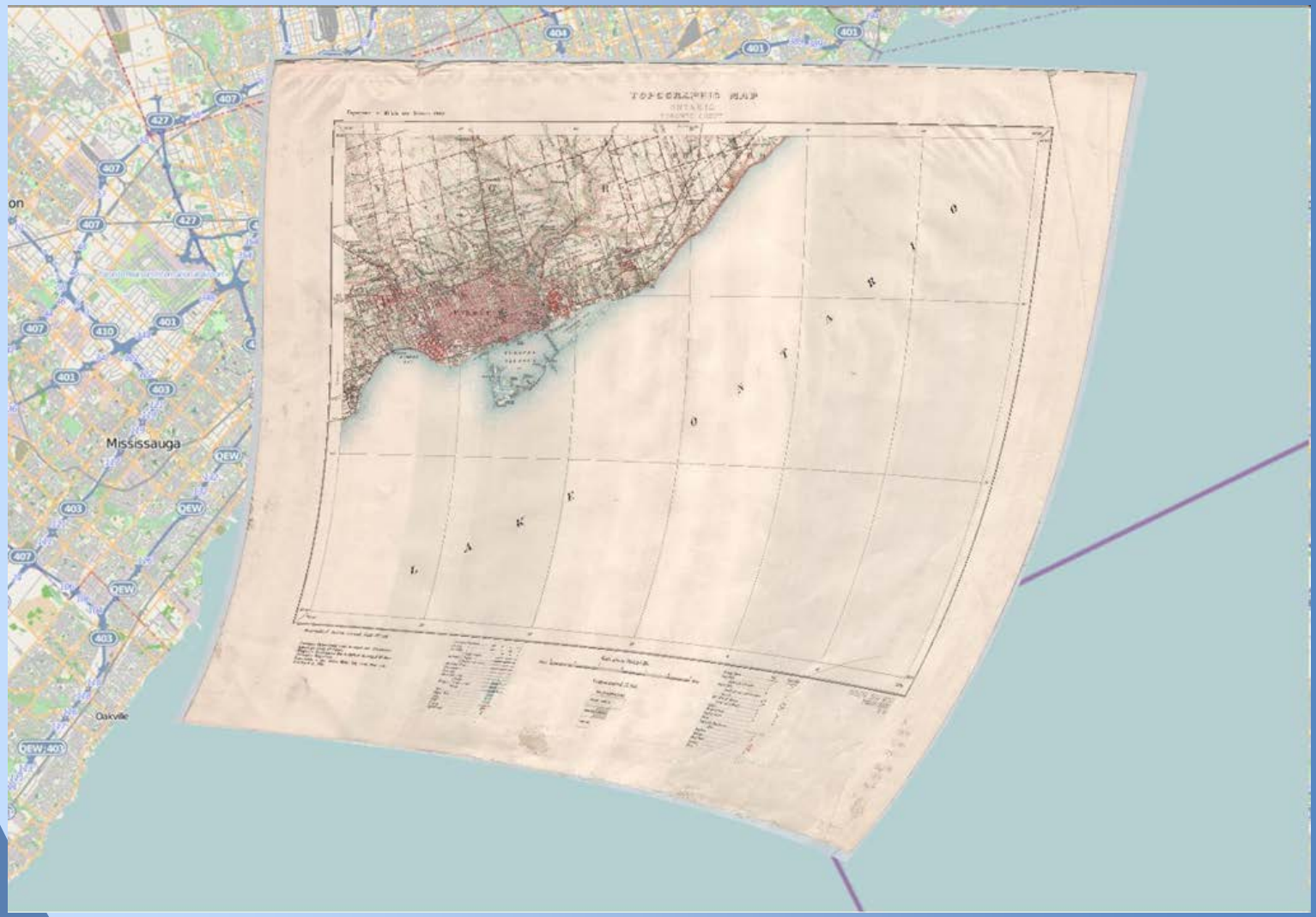
Standards - conversion/reconstitution





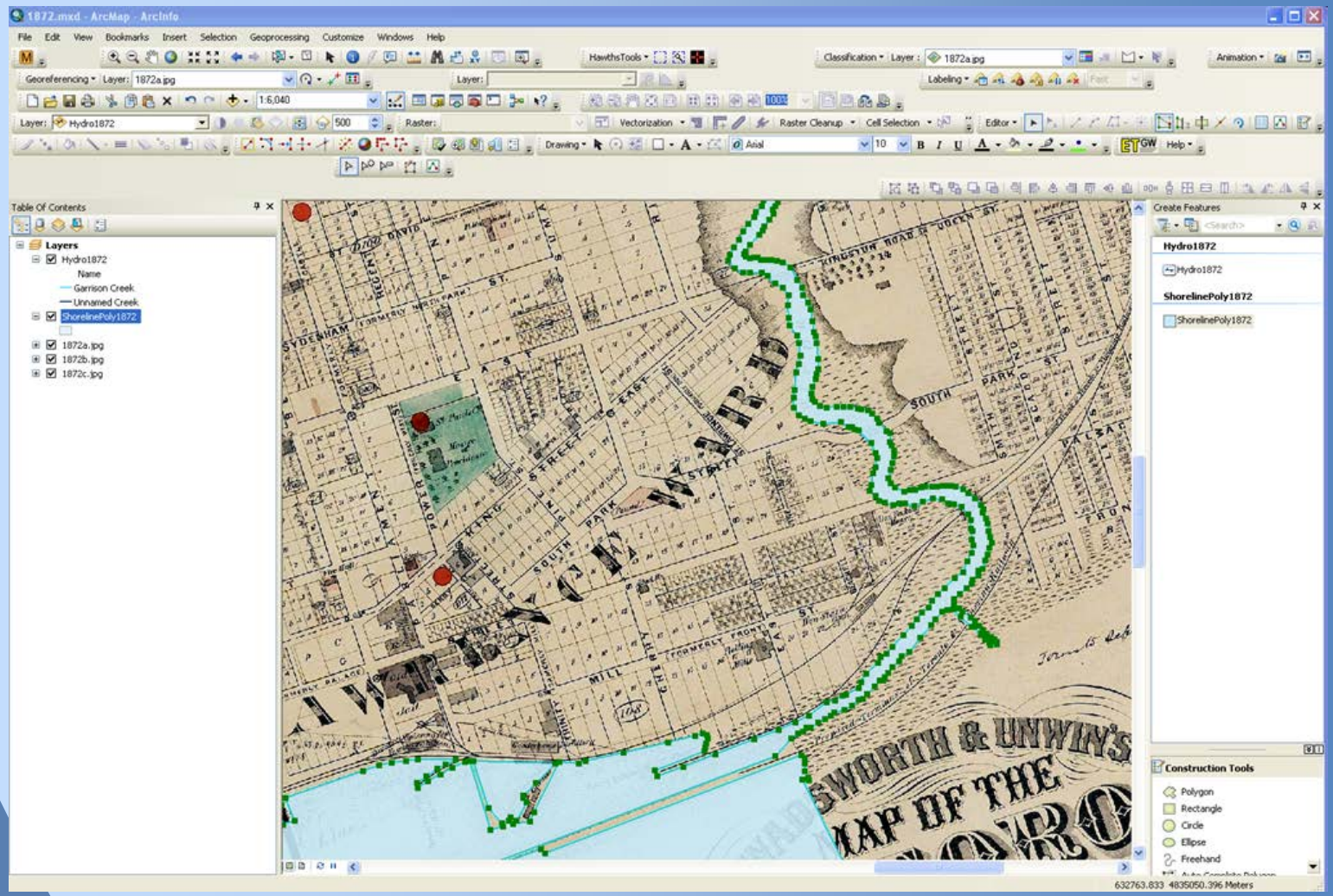
Standards - Licensing

Best Practices - Georeferencing

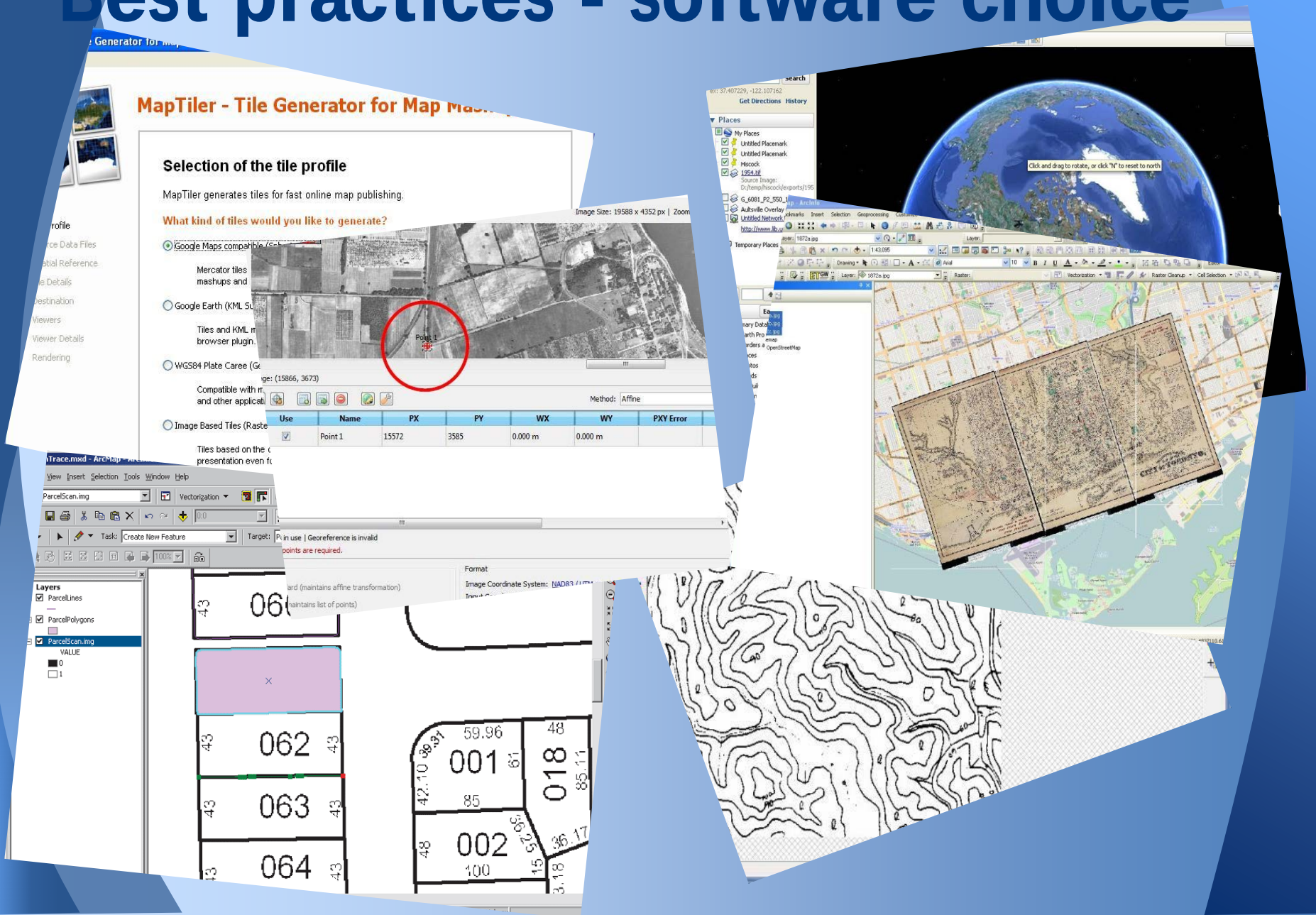


Best practices - mosaicing

Best practices - vectorization



Best practices - software choice



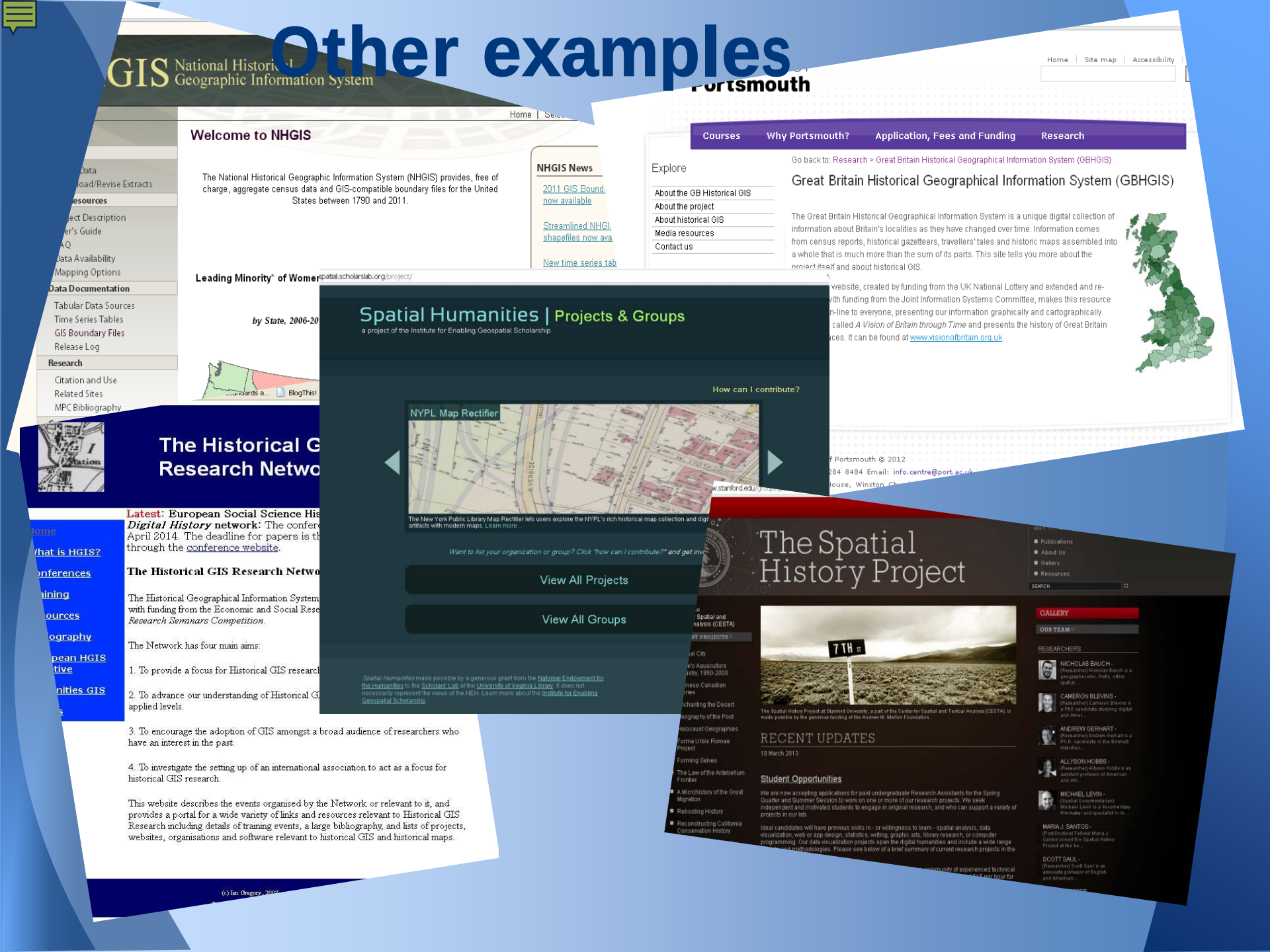
Best practices - Data Curation

Project data dissemination for "Orphan" data, lost, or inaccessible

Other Goals and Objectives

- Create a community
- Foster conversations
- Prevent duplication
- Promote literacy
- Build teaching tools

Other examples



Next steps

- Community creation (librarians, archivists, historians, geographers, cartographers, etc.)
- Assembly of collaborators (pitching in)
- Discussion of terms of reference

Next steps - collaborator decisions

- data portal?
- discovery?
- data archive?
- best practices / knowledge base?
- data creation / enhancement?

Next Steps

- Funding
  - SSHRC - Partnerships/Dev't Program?
  - SSHRC - Connections Program?

    "Guidelines and support for tools for research and research-related activities are under development, to be announced during fiscal year 2012-13."
  - Canadian Foundation for Innovation (CFI) - Research Infrastructure Development?
  - Joint applications with Partners?

Potential collaboration / partnerships?

- NRCan
- Statistics Canada
- Provincial agencies
- NiCHE
- OCUL Scholars Portal
- Library and Archives Canada

- Individual HGIS researchers

Canadian Historical GIS Network so far

http://www.hgis-sigh.ca

Canadian Historical GIS Network so far

hgis-sigh-l@listserv.utoronto.ca

subscribe by sending email to:
listserv@listserv.utoronto.ca

“subscribe hgis-sigh-l
yourmail@youraddress.ca
Firstname Lastname”

What's missing?

Let us know what you think of the concept, and let’s start the conversation.