



GeoNOVA PROGRAM 2004-2005 ANNUAL REPORT

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BACKGROUND

GeoNOVA is the name given to the Province's corporate geographic information management system. GeoNOVA is guided by a set of principles, and includes all facets of geomatics. The GeoNOVA concept implies that government will take a "corporate" approach to the creation, management and dissemination of all geographic information within the Province of Nova Scotia. Simply stated, this concept recognizes the mandates of each provincial government department and agency to carry out its individual mandate, but requires that these efforts be directed towards the creation of a corporate resource of geographic data. The information is collected, maintained and disseminated to mutually accepted standards and shared with a broad user community in order to support decision making and to reduce or entirely eliminate duplication of effort. A fundamental principle of GeoNOVA is to create data once, as close to the source as possible, and to use it many times.

1. INTRODUCTION

Under the GeoNOVA Governance Model, an annual report must be prepared by the GeoNOVA Steering Committee and presented to the Deputy Minister of Service Nova Scotia and Municipal Relations. This report represents the second year of the renewed GeoNOVA Program and outlines the accomplishments for both the GeoNOVA Steering Committee¹ and the GeoNOVA Secretariat² and some of the GeoNOVA stakeholders during fiscal 2004-2005.

The first part of the report provides an overview of the many accomplishments for the past year. The second section of the report outlines the work program for 2005-2006 and what we expect to initiate and accomplished throughout the year.

Below is a brief synopsis of important accomplishments during fiscal 2004-2005:

- Recognition by our Government (All Deputies' Committee), the Federal Government (GeoConnection Program) and the international community (open GIS Consortium) of the GeoNOVA Program and the GeoNOVA Portal³ as two industry best practices;
- The establishment of partnerships with both the Federal Government (GeoConnection

¹ The GeoNOVA Steering Committee is a ten member, interagency committee with representation from the Provincial and Municipal governments as well as Academia.

² The GeoNOVA Secretariat reports to the Director of Geographic Information Services within Service Nova Scotia and Municipal Relations and consists of a three person team of senior technical, program and policy coordinators.

³ The GeoNOVA Portal is an internet based solution to address the geographic data access needs of the geomatics community of Nova Scotia. It allows users a one stop access point for all geographic data about Nova Scotia. It is also a key contributor to a national network of geographic data, service and applications known as the Canadian Geospatial Data Infrastructure. The GeoNOVA Portal can be found at <http://geonova.ca>

Program ⁴) and Municipal Governments (both individually and within the municipal node) and within the Provincial Government, through assistance offered to several departments on technical issues as well as technology/knowledge transfer;

- Discussion with various provincial government departments, the private sector, and the municipalities on finding more opportunities to partner in the update and maintenance of the Province's primary databases;
- In June 2004, the launch of the GeoNOVA Portal providing a consolidated access point for geographic data about Nova Scotia, designed for a broad stakeholder/user community;
- A data catalogue documenting more than 300 geographic data sets as well as detailed cataloguing of more than four thousand data products, all in support of a data discovery (metadata/data indexing) project ⁵;
- Alignment with the Canadian Geospatial Data Infrastructure ⁶ and the Canadian General Standards Board thereby placing Nova Scotia in a sound position in dealing with Federal/Provincial/Territorial geomatics issues.

Fiscal 2004-2005 was both positive and productive. Stakeholder consultation and program promotion continue to be seen as critical and thus partnership development, data access and discovery and program enhancements were the main focus for this year.

II. SUMMARY OF ACTIVITIES 2004-2005

There are five key areas upon which to report GeoNOVA activities for Fiscal 2004-2005:

- A. Delivering a well defined and secure support system in the form of the GeoNOVA Program;
- B. Establishing and sustaining partnerships;
- C. The establishment of an infrastructure that allows the work resulting from the GeoNOVA efforts to be delivered to the geomatics community;
- D. Improvements to data access and data discovery; and
- E. Growth of the provincial base mapping (i.e. the Primary Databases ⁷).

⁴ GeoConnections is a federally lead geomatics initiative, focused on the development of policies, standards, technologies and partnerships, necessary to build the CGDI. GeoConnections was originally a five year program that ended March 31, 2005, however has recently receive funding for an additional five years

⁵ The Data Discovery Project entails the development of internet based search and edit facilities. The search component is to target the public and is meant to assist them in locating data they may wish to use. The edit facility meanwhile is to assist providers of data in managing the records within the catalogue with the ultimate aim of ensuring the catalogue is sustainable.

⁶ The Canadian Geospatial Data Infrastructure makes Canada's geographic data, applications and services readily accessible on-line for decision making and business planning.

⁷ The Primary Databases of the Province include: aerial photography, the coordinate reference system, the topographic series (land based and coastal), the property mapping service, the civic address file. All government departments and agencies are to build their subject matter data on top of this base information.

A. Delivering the GeoNOVA Program

In addition to seeking out data access opportunities, and subsequently partnerships, the Secretariat has also assisted agencies by lending them geomatics knowledge and experiences so as to address their business requirements. For example, the Secretariat assisted the Office of Health Promotions in scoping out a data collection effort whereby all recreational facilities might be identified and geo referenced. As well, the Secretariat assisted the Department of Transportation and Public Works in screening for and securing GIS technicians.

The GeoNOVA Program resources have also assisted in areas such as working with the Registry 2000 Project⁸ to ensure that the new land registration system business requirements are aligned with the business practices of the municipalities. GeoNOVA's strong working relationships allows quick and easy access to resources for projects such as Registry 2000, without having to break new ground. GeoNOVA is a conduit to such organizations and a means by which efficiencies might be gained.

Included in the Registry 2000 effort, GeoNOVA assisted in establishing twelve business arrangements with municipal units and allowed the Registry 2000 Project to build a business relationship specific to collection of outstanding tax balance and betterment charge information. This piece is an important part of the Registry 2000 vision of linking external data sets related to the real property process into one common access application - *Property Online* - which is used by all real property professionals to access land related information and to complete online transactions.

In fiscal 2004-2005, the GeoNOVA Program also received international exposure when it learned that its portal efforts had been recognized by the Open GIS Consortium⁹. The Federal Government also recognized the importance of the GeoNOVA Program and offered up the model to the other nine provinces and the Territories. Within the Province, the Program was recognized as a corporate "best practice" for other government departments to follow in areas of collaboration and partnership development.

B. Establishing and Sustaining Partnerships

Since 2003-2004, the GeoNOVA Program has been in a financial partnership with the Federal GeoConnection Program. Fiscal 2004-2005 was the climax year for this fiscal arrangement as two major funding efforts came to a close. A \$200,000 data discovery initiative (i.e. metadata / data indexing) as well as a \$900,000 GeoNOVA Portal Phase 1 development initiative. Both were 50/50 cost sharing arrangements with positive results.

In 2004, municipal consultation and partnership development was extremely productive. The Municipal Node met three times throughout the year, with the last meeting being held in March 2005 and was the first joint meeting of all the municipalities. Focus was on municipal successes in

⁸ Registry 2000 is a strategic initiative to modernize the Nova Scotia land registry system by guaranteeing basic ownership rights through a new land registration regime and by providing integrated access to all land related information through an electronic system which can be accessed remotely.

⁹ The Open GIS Consortium (OGC) is an International body responsible for the establishment of Open Standards for web mapping technologies

regard to GeoNOVA efforts and reporting back to them on subjects such as adoptions of new civic addressing processes and our new direction in large scale mapping. As well, the participating municipalities responded to two questionnaires providing feedback to the Secretariat, as to the data needs of the Municipalities as well as the types of data that municipalities could provide to the Province. The questionnaire also provided a picture as to the state of hardware and software and the need for upgrades and their technical capacity to address data access practices. Training needs were also explored. Some ten plus municipal data sharing agreements, were initiated in fiscal 2004-2005 with municipal units agreeing to contribute to the civic addressing initiative and in return gaining better access to critical Provincial base data sets so as to enhance their business practices.

Provincial consultations continued to be pursued. Provincial agencies have long been involved in GeoNOVA related activities, but do not always recognize the immediate benefits in aligning with the GeoNOVA Program. Awareness is the key to success. With the GeoNOVA Portal developments and the efforts under the metadata initiative, such awareness and education has been gaining momentum within government departments. In many cases fiscal 2004-2005 laid the ground work for new opportunities. The Secretariat has been in discussions with the Department of Environment regarding development of web mapping services for their Air Quality Monitoring (and reporting) efforts. As well, the Secretariat has been working with both Tourism and Heritage specific to making their geographically referenced information available to a broad stakeholder community and the general public. Both have been looking into web mapping technology and have made some gains in delivering their information to the public. The most recent discussions seek to broaden the access of their data to stakeholders such as municipal units or business development agencies.

C. Technical Infrastructure

A solid technical architecture is fundamental to ensuring that the Province is efficiently delivering its high quality geographic data sets as well as the tools for access (e.g. the GeoNOVA Portal and the data discovery services and catalogue). Nova Scotia is part of a broader national geospatial infrastructure and therefore must align itself to critical industry efforts such as developments within the Canadian Geospatial Data Infrastructure; the Canadian General Standards Board, etc.

The GeoNOVA Portal developments have promoted a distributed, service oriented architecture thereby providing data custodians and users alike with a level of independence in their geomatics efforts while contributing to the broader picture. The first developments inside the portal have focused on the deliver of the Province's base data. While the base data continues to be delivered in an effective manner, it was imperative that the delivery of this data be broadened so as to demonstrate the viability of this new architecture. Subject matter (or thematic data) can now be added to the base under this same architecture. This approach now allows GeoNOVA to address the past criticisms that thematic data is difficult to access. There are, as well, early wins in the thematic data delivery. Several subject matter data providers (Education, Environment and Elections Office) have delivered some of their data, to the public, under this new service oriented approach.

D. Improvements to Data Access and Data Discovery

For close to eighteen months GeoNOVA has been working with geographic data custodians in Provincial departments, registering descriptions of their geographic data within the context of a searchable data catalogue. This work was supported financially by both the Province and the

Federal GeoConnections program. During this time period in excess of 300 data collections, as well as more than 4,000 detailed data products were reviewed and catalogued. Throughout this period, not only were data holdings identified, but data providers became more aware of the benefits that metadata can provide to both the data custodian and the user.

The GeoNOVA Portal was a show case for the Program's data access focus. In June 2004 the GeoNOVA Portal was launched, providing a consolidated access point for geographic data about Nova Scotia and delivering generic web mapping applications and services for the user community. The portal has been designed with a broad stakeholder/user community in mind. As the Provincial Government moves to the full implementation of the SAP Enterprise Portal, role based access to geographic information will be made more available to the user. Secured access to the data, where security is required, will be ensured and public access will also be highlighted. At the close of fiscal 2004-2005 several enhanced web services and applications were delivered. Nine private sector firms were engaged in the portal developments along with the work of ten government agencies (federal, provincial and municipal). Additional details of the portal deliverables is provided in Appendix "B" attached.

E. Growth of the Province Base Mapping

"Collect data once, as close to source and share it many times" is the mantra and a critical guiding principle of GeoNOVA and is also a commitment which has been made by the Province in relation to geographic data. The most successful application of this principle can be seen in the development and application of the Province's base mapping products.

GeoNOVA Program efforts addressed four key areas related to the base mapping program. First, the GeoNOVA Secretariat assisted the Nova Scotia Geomatics Centre in discussions with key data developers such as Nova Scotia Power Inc. These discussions focused on partnership opportunities so as to support ongoing maintenance of the base data by liberating source data content into the base. Through such arrangements the base mapping efforts would see more timely updates to its data and the ability to turn attention to content that is perhaps more difficult or costly to collect. Negotiations with Nova Scotia Power Inc are still ongoing.

Meanwhile, the municipalities continue to be key contributors to the Nova Scotia Civic Address file. They are considered the definitive source for civic address based information. The GeoNOVA Program has been called upon to assist in securing data partnerships with municipal units. In fiscal 2004-2005, ten agreements were signed or initiated, further assuring the long term sustainability of the civic address file.

In early fiscal 2004-2005 the Geomatics Centre carried out extensive stakeholder consults specific to the Provincial coordinate reference system as well as large scale mapping. Within these two efforts new policies were identified as being required. The GeoNOVA Secretariat has worked with the Geomatics Centre to develop these policies and better define program deliverables.

III. 2005/06 WORKPLAN

The GeoNOVA Workplan for fiscal 2005/06 continues to place emphasis on making geographic data accessible from the desktop. The Program will focus on areas that not only physically liberate

data but also raise awareness with the data custodian regarding the opportunities afforded all geomatics practitioners when access to geographic data sets is made easier. The GeoNOVA Portal will see enhancements made to its existing implementations and the Secretariat will work with stakeholders in deploying new tools and data via the internet. The Program will introduce a new comprehensive data agreement model (called the GeoNOVA Exchange Agreement) for first time and renewable data partnerships. It will also increase its communications effort by developing a detailed communications strategy and implementation plan. Bringing together the geomatics community via a new initiative called GeoNOVA Days will allow the program to streamline its consultations with its users and provide focus to key program areas, such as the impacts the Freedom of Information and Protection of Privacy Act, as well as the Data Distribution and Pricing Policy, might have on both data providers and data consumers. Municipal, Provincial and Academic relationships will be key, and discussions with federal and non government organizations will also need specific attention.

Total work plan resource requirements for fiscal 2005-06 exceed 600 days of Secretariat effort. It is believed that these activities will assist the GeoNOVA stakeholders, emerging users and the citizens of Nova Scotia in improved data access and will move the GeoNOVA Program forward, resulting in broader partnerships, reduced duplication, as well as improved decision making and support tools.

Introduction

The presentation of the 2005/06 workplan for the GeoNOVA Program has been altered from previous years so as to better align the planned work efforts with the specific building blocks which support the GeoNOVA Program today. The vision remains unchanged.

GeoNOVA encourages the creation of corporate geographic information resources collected, maintained, and distributed to accepted standards and shared amongst all users within the Province to support decision making and to reduce duplication of effort. [GeoNOVA Vision, circa 1994]

The guiding principles for which the GeoNOVA Program holds itself accountable are also unchanged. They include:

- (1) Create data once, as close to the source as possible, and use it many times
- (2) Take a “corporate” approach to the creation, management, dissemination and use of geographic data and information
- (3) Share data and information freely among provincial government users
- (4) Adhere to the approved Standards for Geographic Information
- (5) Make Nova Scotia’s geographic data discoverable and ensure metadata is managed in a sustainable way
- (6) Maximize the use of partnerships to build collaborative working relationships and optimize the use of our collective resources

Since its inception, the GeoNOVA Program has developed in key areas in direct response to the ongoing engagement of the geomatics community here in Nova Scotia. Today, six basic elements are the corner stones of Nova Scotia’s commitment to a cooperative, coordinated, efficient and highly effective geomatics sector within the Province. These corner stones are:

- Establishment of Partnerships;
- A well defined and secure support system in the form of the GeoNOVA Program;
- Growth of the provincial base mapping (ie the Primary Databases);
- Improvements to Data Access and Data Discovery;
- Promotion of the Corporate approach to geomatics; and
- The establishment of an infrastructure that allows the work resulting from the GeoNOVA efforts to be delivered to the geomatics community.

These same corner stones further support the guiding principles that have made the GeoNOVA Program a geomatics best practice not only in Nova Scotia but also on the national geomatics scene.

As can be seen from the detailed work plan attached as Appendix “B”, within this framework specific building blocks arise as key areas of focus for the GeoNOVA program. The work plan for 2005-2006 targets many of these key areas with specific actions and accountabilities against them. In the remainder of this document, workplan actions, along with performance measures, are highlighted.

2005/06 Work Plan Impacts - Looking Ahead

In addition to the detailed work plan activities for fiscal 2005/06, it should be noted that in many instances the work defined this fiscal year will have a direct impact on the workload and future activities of the Program’s stakeholders and the GeoNOVA Secretariat.

GeoNOVA Exchange Agreements are a new tool introduced in fiscal 2005/06. It is estimated that this new tool will require dedicated attention for the next 4-5 years in order for it to be completely implemented with the main stakeholder community. As old agreements are up for renewal the new model will be put into place. In cases where agencies wish to have the new model deployed immediately, care will be taken to address the request. This exchange model will also play a key role in guaranteeing sustainability of the GeoNOVA Portal.

The data requirements and data sharing opportunities between all levels of government will also result in ongoing effort for the next several years. In fiscal 2004-2005 some of those opportunities were uncovered via a simple user consult/survey. Such tools must be used on an ongoing bases and emphasis must be placed upon matching user need with custodian availability. GeoNOVA is seen as a facilitator of such activity.


As the large scale mapping program becomes settled and business processes are put into place to address product development and maintenance, the product will become an important component of the provincial base mapping effort. Specific to the role of the GeoNOVA Secretariat, its involvement will be reduced simply to assisting with partnership development.

Promoting Government’s commitment to corporate geomatics will be ongoing. It will be imperative for the GeoNOVA Secretariat to continue to work with all levels of government so as to better data development, maintenance and access. However it must place a concerted effort specific to the opportunities within the Provincial government. As such it should be anticipated that in future fiscal years, promotion within the provincial system will be highlighted.


In line with the effort the Program must place within the Provincial system, it is also important to ensure resources are dedicated to overall promotion / communications. This year’s communications

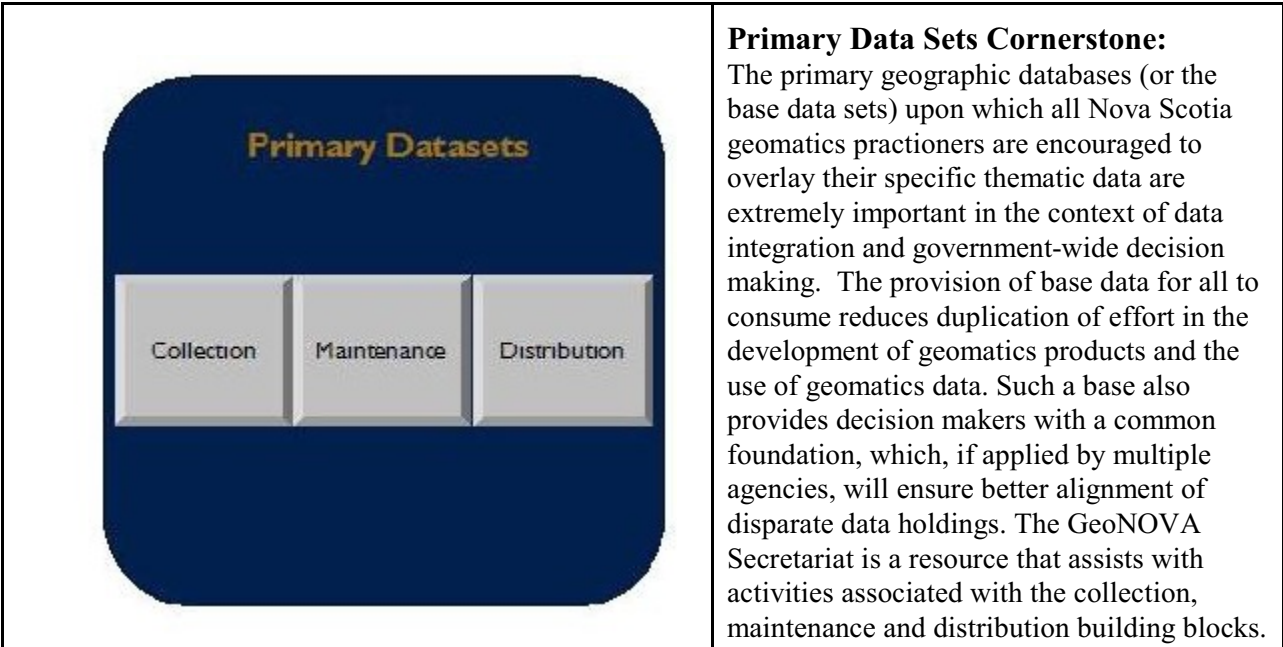
strategy will assist the Program in better understanding the depth and breadth of communications necessary for the coming years. It is safe to assume resources will be necessary so as to promote the successes and opportunities afforded all stakeholders who subscribe to the corporate vision and strive to collect data as close to source and share it broadly.

**APPENDIX A
GeoNOVA Work Plan for 2005-06**

	<p>Partnerships Cornerstone: Strong partnerships are needed to eliminate duplication of effort and prolonged decision making, which are symptoms of a lack of strong geomatics partnerships. The ability to come to quick, well informed, cost effective, efficient geomatics decisions is a reflection of secure geomatics partnerships. It is incumbent upon the GeoNOVA Program to act upon requested partnership arrangements as well as seek out partnerships that may otherwise have not been considered or acted upon. The GeoNOVA Secretariat must look beyond an obvious program and project need and seek out the potentials that may be afforded a specific geomatics effort(s) and further determine if the effort might be well served through partnership arrangements.</p>	
Building Blocks	Action	Measure
<ul style="list-style-type: none"> ✓ Agreements ✓ Private Sector ✓ Federal Agencies ✓ Provincial Agencies ✓ Municipal Agencies ✓ Academic Sector ✓ Non Government Organizations 	<p>Initiate GeoNOVA Exchange Agreement - a broad agreement model intended to consolidate best practices from past agreement models.</p> <hr/> <p>Using the results of the 2004-2005 municipal and provincial data access surveys, match municipal and provincial data needs with data availability.</p> <hr/> <p>Establish Partnership Agreements in support of Large Scale Mapping Program</p>	<p>(a) Initiate working version of GeoNOVA Exchange Agreement.</p> <p>(b) Development of an Exchange Catalogue.</p> <hr/> <p>(a) Resolve one Municipal Data need.</p> <p>(b) Resolve one Provincial Data need.</p> <hr/> <p>1 Agreement with pilot area (Town and serviced area within the District of Yarmouth)</p>

Building Blocks	Action	Measure
	Establish a working group to determine the viability of the Provincial Technology License (PTL) model.	(a) Formulate options regarding PTL effort. (b) Engaging: Office of Economic Development; Service Nova Scotia and Municipal Relations; Natural Resources. (c) Initiate further discussions with ESRI regarding model
	Promote the Government's commitment to corporate geomatics.	Discussions / Presentations with at least 2 line departments.
	Development of Service Level Agreements in support of the GeoNOVA Portal.	(a) SLA with NSGC (b) SLA with CITO
	Engage Municipal Units in corporate geomatics discussions	Conduct 2 sessions of Municipal Node meetings
	Establish Partnerships with Academic Community	Partnership with one academic institution


	<p>Program Cornerstone:</p> <p>The GeoNOVA Program is viewed by many as a best practice in implementing and sustaining the ideals related to “collecting data once closest to source and sharing it many times”. GeoNOVA touches many sectors of the geomatics community. Many people are involved in, or take advantage of, GeoNOVA Program efforts without knowing they are engaged in a corporate geomatics effort. Often stakeholders only recognize the need for a corporate initiative such as GeoNOVA when they can see it impacting their work directly. Because of this, the execution of corporate activities such as the GeoNOVA Program, requires the focus of a lead agency and dedicated resources. The GeoNOVA Secretariat provides the foundation for long term success.</p>	
<p>Building Blocks</p>	<p>Action</p>	<p>Measure</p>
<ul style="list-style-type: none"> ✓ Governance Model ✓ Secretariat Resources ✓ Service Level Support ✓ Special Projects ✓ Technology Transfer ✓ Training 	<p>Understand the depth and breadth of geomatics practices within government. Taking a look at the interrelationships, business models, etc. with a focus on defining what activities within an agency can be defined as core and what might perhaps be better defined as corporate.</p>	<p>(a) Plan related to investigative work. (b) Preliminary documentation of geomatics activities in Government</p>
	<p>Develop Training modules for key stakeholders</p>	<p>(a) GPS Training modules established (b) First series of training delivered to 10 municipal units. (c) Report on Training opportunities</p>
	<p>Property Data and XML Development</p>	<p>Property Data delivered to HRM in XML format</p>
	<p>Coordinate efforts under Land Development Office (LDO)</p>	<p>(a) User Needs Study for Generic Permitting System (b) Generic LDO Tool kit with training plan</p>



Primary Data Sets Cornerstone:

The primary geographic databases (or the base data sets) upon which all Nova Scotia geomatics practitioners are encouraged to overlay their specific thematic data are extremely important in the context of data integration and government-wide decision making. The provision of base data for all to consume reduces duplication of effort in the development of geomatics products and the use of geomatics data. Such a base also provides decision makers with a common foundation, which, if applied by multiple agencies, will ensure better alignment of disparate data holdings. The GeoNOVA Secretariat is a resource that assists with activities associated with the collection, maintenance and distribution building blocks.

Building Blocks	Action	Measure
<ul style="list-style-type: none"> ✓ Data Collection ✓ Data Maintenance ✓ Data Distribution 	Stakeholder consultation specific to the Large Scale Mapping Program.	(a) Formalize the Large Scale Mapping Program, (b) Approval of the Large Scale Mapping Policy
	County Boundary Definition: project re-initiation.	Recommendation as to the formal definition of counties.
	Provide advise re reconciliation issues facing Property Records Database.	Civic Address data flow within the Property Records Database and specific targets on Property Online application.

		<p>Data Access & Discovery Cornerstone: In 2002/03 the stakeholder community stated clearly that data access needed to be a key driver for the long term success of the GeoNOVA Program. The users want easier and more frequented access to geographic data holdings. In support of this requirement, users expressed concerns about not being able to easily locate (or discover) the data they require. Thus data discovery is an important part in the data access equation.</p>
Building Blocks	Action	Measure
<ul style="list-style-type: none"> ✓ GeoNOVA Portal ✓ Data Discovery Service 	Develop the GeoNOVA Data Discovery Service including the search and edit functionality.	Launch GeoNOVA Data Discovery Service within Portal.
	Develop metadata custodian relationships with Provincial agencies.	2 GeoNOVA Exchange Agreements
	Metadata collection with municipal units	Engage 5 municipal units (introducing as well the concept of the GeoNOVA Exchange Agreement).
	Initiation of long range plan for Portal Initiative	Draft plan
	Deliver next full release of GeoNOVA Portal	Deliver of V2.0 SAP Prototype

Building Blocks	Action	Measure
	Portal Workplan developments.	<ul style="list-style-type: none"> (a) GeoNOVA Portal Release 1.5 (b) Coordinate Transformation Web Service V 2.5 (c) GeoNOVA Portal Viewer (d) Metadata Integration (e) Municipal Web Map Service Development (f) Provincial Web Map Service Development (g) Target Nova Scotia Web Map Services (consult) (h) Municipal Services Application (i) Atlas of Nova Scotia Application (j) NSCAF Web Map Service (k) NSCAF Web Map Service - Map Integration (l) GML Conversion Service (m) Environment - Pollution Index



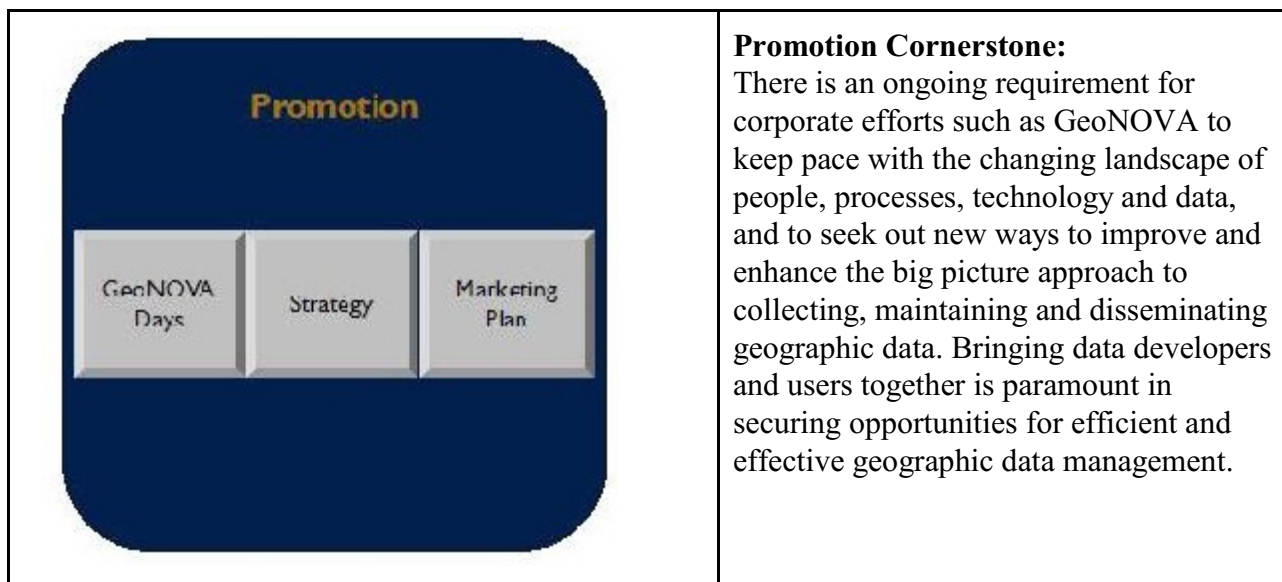
Policies and Standards Cornerstone:

Policies and Standards support the technical infrastructure and instills confidence in the users of the infrastructure. Policies and Standards are fundamental to ensuring the Province is delivering its high quality geographic data sets as well as the tools for access, such as the GeoNOVA Portal and the data catalogue, etc. The Province has both corporate and operational policies in place related to geographic data development and dissemination. The Data Distribution and Pricing Policy is perhaps the most notable and thus an important building block against this cornerstone.

Nova Scotia is a contributor to a broader, national geospatial infrastructure and therefore recognizes three additional national and international standards based building blocks:

- the Canadian General Standards Board (members of the GeoNOVA Secretariat are both subject matter experts as well as voting members);
- the Canadian GeoSpatial Data Infrastructure (Nova Scotia has modeled the GeoNOVA Portal efforts in line with the CGDI); and
- the World Wide Web Consortium (W3C) (because of Nova Scotia’s commitment to the CGDI we must also stay abreast of the developments under the W3C).

Building Blocks	Action	Measure
<ul style="list-style-type: none"> ✓ Data Distribution and Pricing ✓ CGSB Alignment ✓ CGDI Alignment ✓ W3C Alignment 	Review geographic data distribution and pricing policies and practice(s) within Nova Scotia.	Draft recommendations regarding Nova Scotia’s data distributions and pricing policy framework.
	Participation as voting member of the Canadian General Standards Board (CGSB)	(a) Stakeholder consultation related to CGSB issues.



Promotion Cornerstone:
 There is an ongoing requirement for corporate efforts such as GeoNOVA to keep pace with the changing landscape of people, processes, technology and data, and to seek out new ways to improve and enhance the big picture approach to collecting, maintaining and disseminating geographic data. Bringing data developers and users together is paramount in securing opportunities for efficient and effective geographic data management.

Building Blocks	Action	Measure
<ul style="list-style-type: none"> ✓ GeoNOVA Days ✓ Strategy ✓ Marketing Plan 	Assist in the promotion / education of the new Large Scale Mapping Program and its associated Policy (Secretariat not the lead agency, rather support for NSGC).	3 Partnerships built upon the new program being clearly articulated and Policy established. (See specific actions noted in Partnerships section above)
	Develop and Deliver on a communications strategy for GeoNOVA Program.	(a) Strategy Document, (b) Implementation Plan, (c) Communications Tools (including Trade Booth) (d) GeoNOVA Pamphlet (s) (e) Alignment with Brand Nova Scotia (f) Incorporate GeoBase Promotion
	Deliver ADM/DM Annual report	(a) Report (b) Presentation to SNSMR Executive (c) Distribution of Report to a broad DM audience
	GeoNOVA Days	(a) An event that incorporates at least two of GeoNOVA's major workplan components (e.g. Data Policy forum and FOIPOP Workshop) (b) Workshops attended by 75 people (c) Three day event (d) Visit 4 schools
	Coordinate Geomatics Atlantic 2006 event (scheduled for Spring/Summer 2006)	(a) Secure venue (b) Establish Planning Committee (c) Initiate planning
	Participation in Conferences and Workshops	Booth and or speaking engagements at 3 events

APPENDIX B

GeoNOVA Portal Developments 2004-2005

During the 2004 / 2005 fiscal year, the GeoNOVA Secretariat successfully completed five GeoConnections sponsored projects related to the GeoNOVA Portal. These projects totaled over \$650,000. GeoConnections is a national partnership initiative based in Natural Resources Canada with a mandate to make Canada's geospatial databases, tools and services readily accessible on-line.

GeoNOVA Portal Connectivity

Stakeholders used the GeoNOVA Portal Connectivity project as an opportunity to make their spatial data assets publicly available on the Internet. The Connectivity project allowed contributors to publish their data to the Canadian Geospatial Data Infrastructure. The CGDI is the technology, standards, access systems and protocols necessary to harmonise all of Canada's geospatial databases, and make them available on the Internet. Web Map Server (WMS) technology was used to publish stakeholder maps to the Internet. Software conforming to WMS can display and automatically overlay maps from different sources in a single Internet browser. Fifteen WMS' were delivered during this project from across provincial and municipal governments, providing access to dozens of maps.

The Municipal Services Mapping Application was also delivered under this project. The application provides an opportunity for municipalities to publish their maps and related information to the public. The Municipal Services Application is built on WMS architecture and consumes the services developed in the GeoNOVA Portal Connectivity project. To date, two municipalities have been full participants in this component of the project.

GeoNOVA Warehouse Application GML Schema

The Geography Mark-up Language, or GML project focused on different methods of extracting spatial databases on the Internet. While the Connectivity project delivered the ability to display and query maps on the Internet, the GML project enables users to extract and download features from spatial databases. Three distinct methods enabling data extraction were delivered in this project. An Internet-enabled order form allowing GeoNOVA clients to select individual spatial layers, such as contours from a topographic database was delivered. A Web Feature Service allows a user to query a server and extract spatial features across the Internet. The third method for data extraction was to write scripts that could extract spatial information to a series of files that would be available for direct download. Bringing all of these methods together is GML; a format used for modelling, transporting, and storing geographic information. The GML Schema describes the contents of a particular GML document.

Nova Scotia Civic Address Service

The Nova Scotia Civic Address File or NSCAF is the province's standard, provincial source for civic address information. The purpose of this project was to expose the civic address database to a broad community of developers using web services. Web services are software components that are accessible on the Internet. They are reusable and are available to applications and web-site developers. Two separate web services were delivered in this project. One web service allows the developer to query the NSCAF for an address and receive the co-ordinates of its location. The other web service returns a shortest path route between two known locations. Many departments and agencies will have the opportunity to leverage the NSCAF Web Service and consequently improve the quality of address information in their business applications.

Atlas of Nova Scotia

The Atlas of Nova Scotia is an online atlas offering a collection of maps and associated information about Nova Scotia. The Atlas supports WMS technology and consumes the deliverables from the GeoNOVA Portal Connectivity work delivering interesting, colourful maps that can be enjoyed by a wide range of people. The mapping application has a simple interface and is intuitive. The Atlas of Nova Scotia serves as an outlet for GeoNOVA stakeholders who wish to publish their WMS's through a clean, professional looking product.

Nova Scotia Web Co-ordinate Transformation Service

Service Nova Scotia and Municipal Relations has long been using custom, in-house software for transforming and projecting co-ordinate data. The Web Co-ordinate Transformation project has exposed those internal routines and programs through web services. The web service supports several common Nova Scotia reference frames including NAD83, ATS77, and NAD27. Additionally, many common co-ordinate types including Universal Transverse Mercator, Modified Transverse Mercator, and Latitude / Longitude are supported. An Internet application using the newly developed web service was provided as a deliverable to this project.