

# **Large Scale Mapping Policy for the Province of Nova Scotia**

**December, 2005**

**Version 1.0**

## TABLE OF CONTENTS

PAGE

BACKGROUND .....	3
POLICY .....	5
Policy 1.0 Large Scale Mapping Program .....	5
Policy 2.0 Service Offering .....	5
Policy 3.0 Data Distribution .....	5
Policy 3.1 The Province's Role .....	5
Policy 3.2 The Partnership .....	5
Policy 4.0 Program Planning .....	6
Policy 5.0 Product Specifications .....	6
Policy 5.1 Vector Based Product Specifications .....	6
Policy 5.2 Orthophoto Product Specifications .....	6
Policy 6.0 Aerial Photography - Cost Sharing Model .....	6
Policy 7.0 Product Development - Cost Sharing Model .....	6
Policy 8.0 Metadata .....	6
Policy 9.0 Policy Review .....	7
SUPPORTING DOCUMENTATION .....	7
REFERENCES .....	7
APPENDIX A .....	8
COMPARISON MATRIX .....	8
APPENDIX B .....	10
GLOSSARY OF TERMS .....	10

## BACKGROUND

In fiscal 2003/04 Service Nova Scotia and Municipal Relations (SNSMR) initiated a review of the province's large scale mapping practices. The consultation process included a broad cross section of users including all three levels of government departments and their respective agencies, businesses, and general users. The purpose of this effort was to review the needs of the varying user communities specific to the offerings of this large scale mapping effort and to develop recommendations with respect to a move forward strategy. For this review 'Large Scale Mapping' was defined as the development of a vector based line map, at scales larger than the Nova Scotia Topographic Database (NSTDB) Series of 1:10,000.

This review identified that:

1. There is a continued requirement for a large scale mapping effort - the user communities have growing expectations to deliver large scale mapping products and services that are applicable to their business requirements;
2. A large scale mapping program should be led by the Province;
3. There is no consensus among the user communities as to the specific dominant mapping scale that should be used for a large scale mapping program;
4. Currency of information is more important than accuracy and accuracy of content can be variable, as long as such detail is evident;
5. A digital ortho product, with elevations would be a viable alternative to the existing program offering; and
6. Efforts should be made to keep the historical mapping files presently available from a variety of sources.

The following excerpt from the final report<sup>1</sup> coming out of the consultation and review sums up these points:

“...new policy must recognize the constraints on Provincial resources available to support large scale mapping, [and] it must also address the mapping aspirations of all communities, large and small. It is noted.... that in recent years, much of the financial burden for large scale mapping has already shifted to the municipalities, although the Province still contributes funding and normally assumes a leadership role in coordinating the program. As it is widely held that better geographic information serves to enhance the possibilities of a region to attract industry and growth, it follows that the Province must remain in the large scale mapping business.”

SNSMR's 2004-05 business plan emphasized the Department's continued commitment to collaborate with partners in the development and delivery of services, and to improve data collection and distribution. These commitments support the documentation of an approved set of policies for the Large Scale Mapping Program. SNSMR's 2004-05 Business Plan noted that it is responsible for ensuring results in the following areas:

- Collaboration with internal and external partners to evaluate and improve the

---

<sup>1</sup> *Mapping and Maintenance Strategies for the NSTDB Large Scale Map Program - Final Report* [March 24, 2004]

- quality and effectiveness of government services.
- Policy development for the Department in the areas of data privacy, security and access and integrity of data holdings.
- Customer and stakeholder satisfaction with SNSMR services.
- Effective and positive relationships with other levels of government, provincial departments and agencies and the private sector.

It is based upon these commitments that the large scale mapping policies contained within this document are presented.

As noted in the Final Report, in development and expansion of a Large Scale Mapping Program, the Department must ensure that all efforts are fiscally responsible and that the program is sustainable over the long term. It must also ensure that the large scale mapping product itself is high quality and capable of supporting a wide range of applications.

## POLICY

The policies related to large scale mapping fall into two categories:

1. Policies related to the overall direction of the program; and
2. Policies related to the technologies employed to deliver a large scale mapping product.

These policies come as a direct result of detailed consultation. During the consultation stakeholders indicated that policies are necessary and/or beneficial in some, but not all, of the areas reviewed. A review of reports and supplementary material, showed that some issues are not specifically of a policy nature, but rather are business process or strategic issues and should not be treated as policies; these issues have not been incorporated in this document. Please refer to Appendix A which correlates the policies presented here with the findings from the *Mapping and Maintenance Strategies for the NSTDB Large Scale Map Program - Final Report* [March 24, 2004].

### Policy 1.0 Large Scale Mapping Program

The Province of Nova Scotia is committed to providing a large scale map product for the foreseeable future. The Province recognizes that the technologies which may be deployed to deliver the large scale mapping program have changed dramatically in recent years. The Province is also committed to ensuring the appropriate application of such technologies in order to take full advantage of the fiscal and program requirements in support of such a product.

### Policy 2.0 Service Offering

The Province will provide contracting and quality control services in support of an ongoing Large Scale Mapping Program.

### Policy 3.0 Data Distribution

#### Policy 3.1 The Province's Role

The Province will provide data distribution services for all large scale mapping products and all associated by-products. In providing such services the Province will ensure the archival and security of this information and will also retain the right to use all large scale mapping products in the performance of its duties.

#### Policy 3.2 The Partnership

The Province and its partners will be permitted to distribute, sub-license, or create value-added information products from the Large Scale product. Both the Province and its partner(s) agree to not compete financially in delivery of Large Scale products. Specific distribution rights within the context of a partnership will be detailed in a GeoNOVA Exchange Agreement. Partners will enter into the GeoNOVA Exchange agreement.

#### Policy 4.0 Program Planning

Stakeholders wishing to enter into cost sharing opportunities for Large Scale Mapping must submit Expressions of Interest, in writing, to Service Nova Scotia and Municipal Relations by September 30th each year. Expressions of Interest must be forwarded to the Manager of the Nova Scotia Geomatics Centre and delivered no later than 4:00 pm on September 30<sup>th</sup>.

#### Policy 5.0 Product Specifications

##### Policy 5.1 Vector Based Product Specifications

Effective March 31, 2005 the Province, where requested by a stakeholder group, will provide a standard set of mapping specifications that support a vector based large scale mapping effort. The Province will continue to encourage the development of a common, uniform Vector Large Scale Mapping Product for the geomatics community.

##### Policy 5.2 Orthophoto Product Specifications

Effective October 01, 2005 the Province will offer Provincial, standards based, product specifications to support a digital orthophoto mapping product. <sup>2</sup>

#### Policy 6.0 Aerial Photography - Cost Sharing Model

For a two year period, commencing April 01, 2005, the Province will provide 100% funding for initial aerial photography scanning and control of photography supporting Large Scale Mapping products. This funding will be at the discretion of the Province. Effective April 01, 2007, the Province will provide financial support for aerial photography supporting Large Scale Mapping products based upon annual program plans and interests expressed by the stakeholder community (please refer to Program Planning Policy 4.0 above).

#### Policy 7.0 Product Development - Cost Sharing Model

Effective March 31, 2005 the Province will only generate Large Scale Mapping Products on a 100% cost recovery basis - excluding costs associated with specification development, aerial photography generation, and project management (quality control and contract management).

#### Policy 8.0 Metadata

Metadata (data about the data holdings) for all collection and product level large scale mapping products supported by the Province will be recorded within the Nova Scotia Geographic

---

<sup>2</sup> In the intervening period of April 01, 2005 and October 01, 2005 the Province will be involved in prototyping, testing and product specification definitions for the new digital orthophoto product.

Catalogue. All stakeholders completing other large scale mapping initiatives are encouraged to document and record their respective metadata in the Nova Scotia Geographic Catalogue. Metadata requirements, within the context of such a partnership, will be outlined in a GeoNOVA Exchange Agreement.

#### Policy 9.0 Policy Review

The Large Scale Mapping Policy will be reviewed, in consultation with the stakeholder community, on a five year basis.

#### SUPPORTING DOCUMENTATION

Conventional Large Scale Mapping Specifications prepared by the Nova Scotia Geomatics Centre are found at:

<http://www.nsgc.gov.ns.ca/mappingspecs/Specifications/Compilation/Urban/default.htm>

Softcopy Large Scale Specifications prepared by the Nova Scotia Geomatics Centre are found at:

[http://www.nsgc.gov.ns.ca/mappingspecs/Specifications/Compilation/Softcopy\\_Compilation/Urban/default.htm](http://www.nsgc.gov.ns.ca/mappingspecs/Specifications/Compilation/Softcopy_Compilation/Urban/default.htm)

Orthophoto Large Scale Mapping Specifications (internal working document - distribution pending.)

GeoNOVA Exchange Agreement Template are found at:

[http://gov.ns.ca/GeoNova/about/bustech\\_analysis.asp](http://gov.ns.ca/GeoNova/about/bustech_analysis.asp)

#### REFERENCES

Mapping and Maintenance Strategies for the NSTDB Large Scale Map Program - Final Report [Geoplan Consultants, March 24, 2004]

Service Nova Scotia and Municipal Relations Business Plan 2004/05 as found at [http://www.gov.ns.ca/snsmr/pdf/about/SNSMR\\_2004\\_05\\_Dept\\_BusinessPlan.pdf](http://www.gov.ns.ca/snsmr/pdf/about/SNSMR_2004_05_Dept_BusinessPlan.pdf)

Digital Orthophoto Quadrangles by the US geological Survey as found at [http://spatialnews.geocomm.com/education/tutorials/doq1/usgs\\_doq.html#doq1](http://spatialnews.geocomm.com/education/tutorials/doq1/usgs_doq.html#doq1)

APPENDIX A

COMPARISON MATRIX

The following matrix attempts to align the recommendations arising from the *Mapping and Maintenance Strategies for the NSTDB Large Scale Map Program - Final report* [March 24, 2004] with the policies the Province of Nova Scotia is hereby implementing :

Large Scale Mapping Study Recommendation	Policy Document Resolution
1. The Province should continue its current practice of providing leadership and consultation in large scale mapping	Addressed in several policies however specifically addressed in Policy 1.0, 5.1 and 5.2
2. The Province should approve a large scale strategy that separates recommendations for effective large scale mapping from the role of the Province in its delivery.	The actions of this document clearly address the concerns raised in this recommendation.
3. The Province should discontinue financing a large scale NSTDB mapping program, but should take part in large scale mapping efforts initiated by others.	See Policy 5.2, 6.0 and 7.0
4. The Province should approach COGS to acquire the datasets for the approximately 600 scanned and georeferences sheets that they have completed.	Not a Policy Issue rather an Operational Issue
5. The Province should undertake to scan and georeference those manuscripts of areas for which no large scale digital mapping was ever acquired.	Not a Policy Issue rather an Operational Issue
6. The Province should offer all the hardcopy map manuscripts to the relevant municipalities, and dispose of those not claimed.	Not a Policy Issue rather an Operational Issue
7. The Province should provide large scale image acquisition support, specifications maintenance, and inventory services for the [Nova Scotia Topographic Database - Large Scale] digital mapping, and in return, secure rights to the data and distribute it through the GeoNOVA [Portal].	See Policy 3.0, 5.1, 5.2, 6.0 and 8.0



<p align="center"><b>Large Scale Mapping Study Recommendation</b></p>	<p align="center"><b>Policy Document Resolution</b></p>
<p>8. The Province should continue to make freely available the latest features from the NSTDB resource mapping so that municipalities can make better use of that series.</p>	<p>Not a Policy Issue specific to this Policy document, rather a Policy issue which should be embedded in the NSTDB Resource Mapping Policy documentation.</p>
<p>9. A metadata standard that makes provision for the co-existence of data of varying degrees of accuracy should be adopted, and the supply of current and complete metadata with each file should be strongly encouraged.</p>	<p>See Policy 8.0</p>
<p>10. The Province should consult with the municipalities regarding issues such as cost, content, topology, accuracy and scale. These are matter for each organization to decide.</p>	<p>Not a Policy Issue rather an Operational Issue in developing the Large Scale Mapping Specification for Digital Orthophotos</p>
<p>11. The Province should offer technical support and guidance to the municipalities regarding the production of large scale mapping.</p>	<p>See Policy 2.0 and 5.1</p>
<p>12. The Province should obtain, where possible, digital copies of large scale maps produced by third parties, to complete its inventory of digital large scale topographic mapping. It is expected that this mapping will be made available through the [GeoNOVA Portal]</p>	<p>Not a Policy Issue rather an Operational Issue</p>
<p>13. The Province should continue to distribute existing data in the same formats as currently supported, and monitor mapping software use for possible additions to and/or deletions from its current list of formats.</p>	<p>The Province will address this recommendation as an operational concern.</p>
<p>14. The integrity of the existing NSGC translation processes for the [Nova Scotia Topographic Database - Large Scale] data among GIS formats should be verified.</p>	<p>This is an operational issue</p>

<b>Large Scale Mapping Study Recommendation</b>	<b>Policy Document Resolution</b>
15. The Province should provide consultative (non-funding) assistance, in municipal efforts to establish financing for large scale mapping initiatives.	As an Operational issue, the Province will lend whatever support it can in this area
16. 1:2000 should be promoted as the standard scale, using aerial photography at scale 1:10000 in built-up areas and 1:18000 elsewhere.	To be addressed in the Product Specification document
17. The current feature coding and grouping schema should be continued.	To be addressed in the Product Specification document
18. The thematic structure for large scale mapping should follow the feature grouping philosophy, i.e. each major feature group should be a separate theme.	To be addressed in the Product Specification document
19. The Province should allow in its specifications for the inclusion of data of varying degrees or accuracy, even within a feature grouping.	To be addressed in the Product Specification document
20. The practice of subdividing large scale data into map sheets (tiles) should be eliminated, and a file management strategy that uses only one, project-wide, geographic coverage should be adopted.	To be addressed in the Product Specification document
21. When new photography for large scale mapping is acquired, specifications should include the generation of orthophotos.	To be addressed in the Product Specification document

## APPENDIX B

### GLOSSARY OF TERMS

Collection Level Metadata - is a standardized description about the collection where a collection is a group of geographic products such as a series of map sheets. The Nova Scotia Topographic Database is a collection and the metadata documenting its content, purpose, accuracies, etc is considered to be collection level metadata.

GeoNOVA Exchange Agreement - A comprehensive agreement to encourage the establishment of strong data partnerships and further ensure data users and custodians have easier access to geographic data holdings.

Large Scale Mapping - refers to mapping at scales of 1:1000, 1:2000, and 1:5000

Metadata - the cataloguing of information related to a given piece of data or dataset.

Orthophoto - An aerial photograph having the properties of an orthographic projection. It is derived from a conventional perspective aerial photograph which is rectified so that image displacements caused by camera tilt and relief of terrain are removed.

Orthophotomap - A map produced by assembling orthophotos at a specified uniform scale in a map format, with contours and colour-enhanced cartographic treatment, presented in a standard quadrangle format and related to standard reference systems.

Orthophotomaps combine the image characteristics of a photograph with the geometric qualities of a map. They serve a variety of purposes, from interim maps to field references for Earth science investigations and analyses. The digital orthophoto is useful as a layer of a geographic information system They can be used as base maps in GIS, backdrops in vector maps, and more, making visual interpretation easier and more accurate because in essence you're still looking at a photograph. An enhanced photograph.

Product Level Metadata - specific information about a dataset(s) within a collection.