

Empowering a Geospatial New Zealand:

Government Geospatial Information Web Access Guideline

Version 1 - June 2008

ACKNOWLEDGEMENTS

This Guideline was prepared after extensive promotion among NZ GIS practitioners of a discussion draft on the Government Web Standards WIKI at http://webstandards.govt.nz/index.php/Home_page since December 2008.

It follows many of the principles established by the process leading to the present [New Zealand Government Web Standards and Recommendations v1.0](http://www.e.govt.nz/standards/web-guidelines/) at <http://www.e.govt.nz/standards/web-guidelines/>

This Guideline forms part of the response to the Digital Strategy, first released in May 2005, about which further information can be found at www.digitalstrategy.govt.nz

It also gives practical effect to some of the goals in the recently approved Geospatial Strategy at <http://www.linz.govt.nz/home/news/items/20070302-geospatial-strategy/index.html>

DISCLAIMER

Readers are advised to seek advice from a professional qualified in this subject area before undertaking any action in reliance on the contents of this Guideline.

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June 2008

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INTRODUCTION

The purpose of this Guideline is to unlock the government Geospatial Divide that is holding back NZ Inc.

Geospatial data is a key component of the governments Digital Content Strategy, and Geospatial Strategy, key initiatives of the Digital Strategy with its vision of *“New Zealand will be a world leader in using information and technology to realise its economic, social, environmental and cultural goals, to the benefit of all New Zealanders.”*

This Guideline focuses on the key questions of;

- What information to deliver
 - What web channels should be used to deliver that information
 - What web presence should be used
 - What information barriers should be used if any
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Information to deliver

The NZ and international community stands to gain immensely from having our publicly owned geospatial information made accessible to support our economic, social and ecological sustainability/development. What information should be made accessible under:

1. The Official Information Act (and the Local Government equivalent)
2. The Policy Framework for Government held Information
3. FRST and PGSF policies
4. The Geospatial Strategy, as a "fundamental" geospatial dataset
5. The Digital Strategy

Background

Geospatial information underpins our society. NZ Inc has a smaller population than the City of Brisbane and can not afford to squander resources, so it needs to share them among the community and make them accessible to support our economic, social and ecological sustainability/development

Economic benefits

In Australia it has been found that the geospatial industry contributes billions of dollars to the economy [\[1\]](#)

Social benefits

There are benefits to healthcare, environmental planning, policing and the provision of recreation. There can be disbenefits if the information is only available to economic development sectors by policy, or impeded by barriers such as pricing and lack of access to geospatial technology

Ecological benefits

There are benefits to the sustaining of biodiversity for its own sake, and the ability of it to provide clean air, clean water, sustainable fisheries, sustainable landuse, and protect us from flooding

Requirements for geospatial information to be made accessible

The Official Information Act (and in a similar manner the Local Government equivalent) has the purpose "To increase progressively the availability of official information to the people" following the principle that "the information shall be made available unless there is good reason for withholding it" with exceptions for "public interest and the preservation of personal privacy"

[The Policy Framework for Government held Information](#) requires that Government departments should make information available easily, widely and equitably to the people of New Zealand (except where reasons preclude such availability as specified in legislation. It also requires that Government departments should make the following information increasingly available on an electronic basis:

- all published material or material already in the public domain;
- all policies that could be released publicly;
- all information created or collected on a statutory basis (subject to commercial sensitivity and privacy considerations);
- all documents that the public may be required to complete;
- corporate documentation in which the public would be interested.

[FRST policy \(pdf\)](#) has designated 26 publicly funded databases as nationally significant

[The Geospatial Strategy](#), requires that agencies "Make fundamental geospatial datasets discoverable and accessible according to agreed policies and standards". It measures progress with the indicator "Fundamental geospatial datasets are easily obtained". The purposes of the Strategy include that "Fundamental geospatial datasets are easily obtained" and require adherence to the principle that "Discovery and access of geospatial information is easy". It does however describe what a fundamental dataset is.

The [Digital Strategy](#) provides for;

THE DESIRED OUTCOMES Content: Through the effective use of ICT, the social, cultural and economic value of New Zealand's stock of content will be unlocked, giving New Zealanders seamless and easy access to the information that is important to all aspects of their lives.

Good accessibility practice

Minfish - [NABIS National Aquatic Biodiversity Information System](#) (Appears dead - Anthony)

Kapiti Coast Public GIS - [Kapiti Coast District Council](#)

DOC - [DOCgis GeoSpatial Information Platform](#)

NIWA - [Free access to Nationally Significant Databases](#)

Napier City Council - Geonetwork discovery and delivery site - [\[2\]](#)

Recommended accessible fundamental information

Statutory data

FRST Nationally Significant Databases

Land interests held

Any required to understand a Policy

Topographic and bathymetric information

National datasets that the agency is the [custodian](#) of

Orthophotography

DEM's and TIN's and LIDAR

Consulting on

Administrative boundaries

Office locations

Event data - for events with an element of public safety, govt service disruption, or public participation

Historical data. All geospatial information provided shall comprise current data and any historical data that the agency has in digital form, This is to enable historical analysis of data.

Web channels to be used to deliver information

There are several web channels or technical ways to deliver accessible geospatial information

- File Downloads
- Web Image Services - Proprietary and Opensource
- Data Services - OGC WFS & WCS & WMS, and event feeds - GeoRSS
- Search Portals - GeoNetwork etc.

File Downloads

The current file formats that can be downloaded and read by most geospatial software are considered to be;

- Vector - ESRI Shapefile with projection file
- Image - TIFF with worldfile
- GRID - ESRI GRID ASCII format
- Tabular - CSV file

A good example of file download is [Geogratis](#)

While GML exists, very little geospatial software can read or write it at the moment, so its use is not common enough to adopt as a required format at the moment

Web Image Services

These only deliver imagery that can not be symbolised or analysed in geospatial software. For these reasons they are of limited use for geospatial information analysis and interoperability The Web Image Services are useful in that they can deploy geospatial information to a Web Browser and provide a universal access viewing channel

The types of Web Image Services are;

- Proprietary Web Image Services - e.g. ARC IMS, Map Extreme
- Opensource Web Image Services - e.g. Mapserver

They are only of universal use if they do not require a specific browser to operate within

Data Services

Data Services deliver information that can be combined with information so are considered more useful than Web Image Services

- WFS - OGC Web Feature Service
- WCS - OGC Web Coverage Service
- OGC Grid Coverage Service

Very little geospatial software can read or write these Data Services at the moment, so its use is not common enough to adopt as a required format at the moment, however it should be deployed where possible in the future.

- WMS - OGC Web Map Service

The Web Map Service has a different use, and is limited as it does not deliver information to geospatial software that can be symbolised or analysed

[GeoServer](#) is a complete OGC Service Channel

Event feeds can convey live event information such as road obstructions, earthquakes, fires, accidents etc.

A GeoRSS standard currently exists, but little use is made of this at the moment

Search Portal

There are no common practice Search Portals that use metadata to discover geospatial information that an agency is required to make accessible. [GeoNetwork](#) is widely regarded as a complete Opensource Search Portal

A good implementation of GeoNetwork can be found at [Napier City](#)

Recommended web channels

Immediate deployment of the 4 documented file download formats, any open browser Web Image Service, and GeoNetwork as a Search Portal

Future recommended practice should include GML for file download, all OGC Services with GeoRSS when approved, but only when these standards attain common practice

Web presence to use

There is a need to incorporate geospatial information into a web site in several ways:

1. A clear link from the home page
2. A standard namespace for a geospatial entry point
3. A standard geospatial home page content to index the geospatial information and services available

Namespace

Unless a standard is set, agencies are likely to use a variety of namespace names to locate geospatial information on web sites, creating confusion

A specific namespace should be used for the provision of geospatial information. It should conform to the following standard: "agency.govt.nz/geospatial/" e.g. <http://med.govt.nz/geospatial/>

Geospatial home page content

Agencies lack guidance as to what geospatial information they should include on any geospatial home page

An agency Geospatial home page should contain the following appropriate information:

- Title - "Agency Geospatial home page"
- File download link
- HTML Map Services links – e.g. ARCIMS
- OGC Image Map services - WMS
- OGC File Service URL's - WFS & WCS
- Inhouse geospatial tools for sharing
- Inhouse standards used
- Metadata search
- Feedback
- Further information
- Link to the SSC Geospatial shared resources web page (not yet implemented)
- Contacts

Agency home page geospatial link

It is often difficult to locate an agencies geospatial information services. Try locating the DOCGIS image map service on [\[1\]](#) using the menu, or likewise for NABIS from [\[2\]](#)

The home page of an agency website should have a "Geospatial" link to its Geospatial home page

Good web site practice

- [Canadian file download web page](#)
- [Canadian geospatial home page](#)
- [GNS web maps home page](#)
- [Napier City Council - Geonetwork discovery and delivery site](#)

Recommended web presence

It is recommended that an agency have a link from its home page to a geospatial namespace with appropriate information.

Information barriers should be removed

Barriers that should not be used

Barriers restrict geospatial information use in the following ways;

"I Agree" access contracts. No web pages require "I Agree" contracts so why should web access to geospatial information

Qualified Image Map Service output. Often Services carry the qualification "Not suitable for..." Is this acceptable

Copyright assertions. The Official Information Act makes no apparent provision for Crown Copyright. As [government policy](#) is to permit use of Crown Copyright, what is the point of asserting it in a way that is seen as restricting information reuse. A Creative Commons [Attribution-Share Alike license](#) is more appropriate.

Charging for access to public information. The Official Information Act makes no provision for charging for the supply of information through the web as no labour or materials are involved.

Purchasing information without securing the IP rights to ensure that the public can benefit from the investment

Not providing information in a file or service format that can readily be used by other government agencies, business and the public

Contracting 3RD parties to "sell" Official Information

License access to public information with restrictions. The Official Information Act makes no provision for license access to public information

Providing data through third parties that exercise IP restrictions, and charge for what is Official Information. This is not acceptable

Restraints

The Official Information Act is the primary restraint here - similar restraints are applied by the Local Government equivalent. Any request for government information is an Official Information request

Any web based actions such as a click or a URL entry are Official Information requests. If a web request is met then there is no apparent provision in the Official Information Act to;

Require "I Agree" contracts

Post "Conditions of Supply"

Restrict use of any data supplied

Charge for meeting the request

Assert copyright

Recommended open information practice

Any barriers to the use of public geospatial information should be removed, unless there is a legislative requirement to maintain a barrier.

A Creative Commons [Attribution-Share Alike license](#) is appropriate.
