User Manual

Canadian Atlas Map Bundle

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About DMTI Spatial™

DMTI Spatial Inc. is Canada's leading spatial solutions provider. We enable users to understand their customers, optimize resources, realize opportunities, maximize profitability and make more informed decisions through accurate products and innovative thinking.

DMTI Spatial publishes precision built street map, rail and routing data (CanMap®), and innovative geocoding and address management software (GeoPinpoint™). In addition, DMTI Spatial publishes a full range of positionally accurate geospatial data products including: enhanced points of interest (EPOI), census data and boundaries, postal geography, topographic maps, and US mapping data. As part of a complete business geographic solution, DMTI Spatial offers a wide range of GIS services, consulting, and software training.

Established in 1994, DMTI Spatial is committed to setting the standard within the GIS industry for precision built spatial data and geocoding software products.

At DMTI Spatial, we believe that our true strength comes from working closely with our customer base and providing innovative solutions to meet their strategic business objectives. As Canada's premier spatial solutions provider we pride ourselves with having worked with North America's leading organizations to support their mission critical applications.

DMTI Spatial works with large and small organizations representative of a wide variety of industries:

- Agriculture
- Banking/Finance
- Consulting
- Education
- Emergency Services
- Engineering
- Environmental
- Forestry
- Government
- Health
- High Technology
- Insurance
- Manufacturing
- Media
- Mining
- Real Estate
- Retail
- Telecommunications
- Transportation
- Utilities

We are a member of the ESRI Canada Business Partner Program, and winner of the 2001 ESRI Worldwide New Business Partner of the Year Award. Strategic business partner of Tele Atlas North America, and winner of the Markham Board of Trade 2000 Award for Entrepreneurship and Innovation.

Really Smart Spatial Solutions™

Through the application of its products and services, DMTI Spatial has been involved with projects such as: location-based services, logistics planning, emergency dispatch, facilities management, data management, customer care, land base development in support of network planning, and marketing/demographic analysis applications.

DMTI Spatial can provide all of the components necessary for the acquisition, implementation, operation and maintenance of a successful GIS system within companies of all sizes. Through its product and service offering, DMTI Spatial can provide users with 5 key components:

1. Accurate, detailed and compatible data
2. Comprehensive maintenance program
3. GIS software
4. Consulting and services
5. Software training

DMTI Spatial™ Product & Service Portfolio

DMTI Spatial's product & service offering includes:

CanMap® - *Digital Map Data for Canada*
- CanMap® Streetfiles
- CanMap® RouteLogistics
- CanMap® Rail
- CanMap® Major Roads and Highways

MultiNet™ - *Digital Map Data for USA*
- Tele Atlas MultiNet™

Business & Recreational Points of Interest
- Enhanced Points Of Interest (EPOI)

GeoPinpoint™ - *Canada's Geocoding Solution*
- Windows Standalone Desktop Version
- ActiveX (DLL Version)
- UNIX, Java Wrapper

Topographic Data and Base Maps
- Canadian Atlas Map Bundle (CAMB)
- Populated Placenames
- National Topographic Data Base (NTDB)
- 30 & 90m Digital Elevation Models (DEM)
- Clutter Data

Postal Geography & Data
- Six-Digit Postal Code File
- Enhanced Postal Code File
- Forward Sortation Area (FSA) Boundary File

1996 Census Boundaries & Demographic Data
- Enumeration Area (EA)
- Census Subdivision (CSD)
- Census Division (CD)
- Census Metropolitan Area/Census Agglomeration (CMA/CA)
- Census Tract (CT)
- Federal Electoral Districts (FED)

2001 Census Boundaries
- Dissemination Area (DA)
- Census Subdivision (CSD)
- Census Division (CD)
- Census Metropolitan Area/Census Agglomeration (CMA/CA)
- Census Tract (CT)
- Federal Electoral Districts (FED)

GIS Software
- Contour Modeling and Display
- Demographic Profiling and Lifestyle Targeting
- Geocoding and Mapping Software
- Routing and Logistics

Consulting and Services
- GIS Consulting
- Application Development
- Database Marketing
- Data Conversion and Creation
- Database Scrubbing
- Geocoding Services
- Technical Support
- Training

Error Reporting & Wish List Services

DMTI Spatial is committed to building the best products possible for our customers. By using our data every day in your mission critical application you are our best product tester. Please let us know if you have found an error in any of our products so that we can make the correction for the next release.

This is your opportunity to provide feedback directly to the DMTI Spatial Product Development Team. Please be as specific as possible so that we can improve our products quickly and accurately. To access the Error Reporting Web page please visit: http://www.dmtispatial.com/error_reporting.html or send an e-mail to: fixme@dmtispatial.com

If you have an idea for a new product or an existing product enhancement, please submit your ideas to the Wish List Web page: http://www.dmtispatial.com/product_wish_list.html or send an e-mail to: wishlist@dmtispatial.com

Over the coming months DMTI Spatial will keep you informed of new product releases, enhancements and strategic alliances. Our goal is to provide you with powerful knowledge based tools to help you attain and maintain your competitive advantage.

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DMTI Canadian Atlas Map Bundle

Introduction

Thank you for purchasing our Canadian Atlas Map Bundle. The following documentation will provide you with a description of the map files included in the bundle as well as a description of enhancements we have made to the map files.

The Canadian Atlas Map Bundle consists of the National Atlas Information Service (NAIS) 1:2 million, 1:7.5 million, and 1:30 million scale digital maps created by Natural Resources Canada (NRCan) for the National Atlas of Canada publication. Also included are DMTI's Populated Placenames and Landmarks files which are based on the Canadian Geographic Names Database, also from NRCan. The NAIS 1:2 million scale dataset provides detailed provincial or regional maps. The 1:7.5 and 1:30 million scale digital datasets provide excellent map data at a national level. The Populated Placenames file provides a rich and extensive database of cities, towns, villages and hamlets across Canada. The Landmarks file includes the names and locations of named geographic features, such as lakes, rivers, mountains, parks and islands.

DMTI Spatial is dedicated to providing you with the most complete set of desktop mapping products and solutions available today. Whether you are performing in-depth analyses or creating powerful presentations, DMTI can provide you with the tools you need to get the job done.

If you require more information about this product, or if you would like more information on our other products and services, please call us at 1-877-477-3684.

Workspaces and Directories

For MapInfo and ArcView users, DMTI has organized the files into different workspaces and project files, making them simple and intuitive to use. For the NAIS 1:2 million files there is a separate workspace/project file for each region of the country. The 1:7.5 million scale map and the 1:30 million scale maps have been included in separate workspaces/project files covering all of Canada. For the Populated Placenames and Landmarks files there is also a separate workspace/project file for each region of the country. The workspaces/project files included on the CD-ROM are as follows:

Workspace/ Project Files	Description
province (e.g. Ontario)	This file consists of the NAIS 1:2 million map (by region) containing all layers found in that file with the addition of a new major highways layer enhanced by DMTI.
*prov*ppn (e.g. ONppn)	This file consists of the NAIS 1:2 million map (by region) containing all layers as well as the Landmarks file. DMTI's Populated Placenames have been added in addition to the enhanced major highways layer.
*prov*_all (e.g. ont_all)	This file contains all layers of the NAIS 1:2 million map as well as all layers of the entire Populated and Landmarks file (by region). Included in this workspace is the new major highways layer as well as DMTI's Populated Placenames.
nais75	This file consists of the NAIS 1:7.5 million map for all of Canada containing all layers found in that file.
sur75	This file consists of the NAIS 1:7.5 million map of areas surrounding the 1:7.5 million Canada file. It contains Greenland, Alaska, part of Russia, and the northern parts of the USA.
nais30	This file consists of the NAIS 1:30 million map containing all layers found in that file.

All of the files are organized into directories by regions. The directories and corresponding regions covered are:

NAIS FILES:

Directory	Region
AT	Atlantic
BC	British Columbia
TRS	Northwest Territories ,Yukon & Nunavut
ON	Ontario
QC	Quebec
PRA	Prairies
NAIS75	All of Canada
NAIS30	All of Canada
Surround	Surrounding Countries

Populated Placenames and Landmarks Files

Directory	Region
AT	Atlantic
BC	British Columbia
TRS	Northwest Territories ,Yukon & Nunavut
ON	Ontario
QC	Quebec
PRA	Prairies

Opening Project Files in ArcView

When opening the project files ("apr") in ArcView, you will be prompted to find some of the files before the apr opens completely. The reason is that various layers exist within different directories and ArcView cannot navigate within or between directories unless they all reside on the c: drive and the path is defined in the apr. In order to provide users with flexibility in storing CAMB and its layers, all pathways are removed from the aprs. For ease of access and organization, all of CAMB's aprs should

be stored at the root of the main CAMB directory and outside all of the file directories (ie. Nais, Placname, etc.)

Example : Opening atlantic.apr :

You will be asked "Where is d:\Camb\Nais\AT\athwy.dbf?" Find this file under d:Camb\Nais\AT\. (See location of files in file descriptions below). Open the file. Next you will be asked to find the corresponding shape file "Where is d:Camb\Nais\AT\athwy.shp?". Locate this file in d:Camb\Nais\AT and open it.

Some layers will open automatically however, to allow customisation, additional layers can be opened manually. Once the apr has been opened, the required layers can be re-saved in the desired view. The next time the apr is opened, it will open to the saved view.

Note: If this apr and it's associated files are moved to another drive or another computer, the pathways must be removed from the apr (see below) and the above process repeated at the new location.

To edit the project files:

Open the apr in a text editor and search for the word "path:". Using the Search and Replace function in the text editor, copy the path i.e. **D:\Camb\Nais\AT** (make sure to exclude the specific layer portion of the path). Paste the path into the search window 'FIND what' and leave 'Replace with' blank. Select 'Replace All', this will remove all of the paths and the apr can be saved in the text editor.

NAIS 1:2 million Files

File Description

The NAIS 1:2 million maps have been structured into 11 different layers including roads, railways, hydrography, parks and provincial outlines. The layering system used is as follows: (the first layer being the bottom layer and the last layer being the top layer in the workspace).

Layer Name	Description
*PROV*FILL	Province or region land area
*PROV*PARK	Parks and Indian Reserves
*PROV*HYDRO	Lakes and rivers
*PROV*ISLE	Islands
*PROV*III	Islands in islands (e.g. Islands in Lakes in Ellesmere Island)
*PROV*PII	Parks in islands
*PROV*LII	Lakes and rivers in islands
*PROV*COAST	Coastal outline
*PROV*RAIL	Railways
*PROV*hwy	Major Highways enhanced by DMTI
*PROV*BOUND	Political boundary (Provincial and International)

Note: The layer name consists of a 2 or 3 letter abbreviation for the applicable region and ends with the layer type abbreviation. For example the layer name for the province or region land area for Ontario is ONFILL.

Map Enhancements

The NAIS 1:2 million maps have been significantly enhanced by DMTI. The following improvements have been made to the different map layers:

Layer	Description of Enhancement
Parks:	Federal lands such as parks and Indian Reserves have all been attributed with the feature name and feature type.
Hydro:	Major lakes and rivers have been attributed with the feature name
Isle:	Major islands have been attributed with the island name.
III:	Major islands in islands have been attributed with the island name.
PII:	All federal lands have been attributed with the feature name and type.
LII:	Major lakes and rivers in islands have been attributed with the feature name.
	Enhanced June 2001
Roads:	All roads have been labeled with road name, road type and province. In addition, the roads types have been differentiated by colour shading (i.e. Expressway or Primary Highway). The positions of the roads have been enhanced and new highways have been added where appropriate. E.g. Highway 407 in Ontario and the Richmond Expressway in British Columbia.
Places	Populated Placenames have been added. Placename points have been aligned with DMTI Spatial's CanMap® Streetfiles product (1:50,000 scale) greatly improving their positional accuracy.
Fill	Fill layers have been attributed with Provincial field.

NAIS 1:7.5 million File

File Description

The NAIS 1:7.5 million map covers all of Canada and has been structured into 7 layers. The layering system for this map is as follows:

Layer Name	Description
BORDER75	Provincial and Country Borders
PARKS75	Parks
HYDRO75	Lakes and rivers
ISLE75	Islands
RAIL75	Railways
ROADS75	Roads
BOUND75	Fill area for Canada land area

Map Enhancements

The NAIS 1:7.5 million map has been enhanced by DMTI. The following improvements have been made to the different map layers:

Layer	Enhancement
Parks	Federal lands such as parks and Indian Reserves have all been attributed with the feature name and feature type.
Hydro	Most major lakes and rivers have been attributed with the feature name.
Roads	All roads have been labeled with road name.

NAIS 1:7.5 million Surrounding Countries File

File Description

The NAIS 1:7.5 million Surrounding Countries map consists of the NAIS 1:7.5 million map of areas surrounding the 1:7.5 million Canada file. It contains Greenland, Alaska, part of Russia, and the northern parts of the USA.
The layering system for this map is as follows:

Layer Name	Description
SUR_H2O	Hydrography
SUR_ROAD	Roads
SUR_BDY	Fill area for land masses

Map Enhancements

The NAIS 1:7.5 million Surrounding Countries map has been enhanced by DMTI. The country names have been added to the file.

NAIS 1:30 million File

File Description

The NAIS 1:30 million scale map covers all of Canada and has been structured into 5 layers. The layering system for this map is as follows:

Layer Name	Description
RIVER30	Rivers
LAKES30	Lakes
RAIL30	Railways
ROADS30	Roads
BNDY30M	Fill area for Canada land area

The NAIS 1:30 million map has been enhanced by DMTI. The following improvements have been made to the different map layers:

Layer	Description of Enhancement
Rivers	Some of the rivers have been attributed with the feature name.
Lakes	All lakes have been attributed with the feature name.
Roads	All roads have been labeled with road name.

Populated Placenames and Landmarks Files

File Description

The information contained in our Landmarks dataset is based on the Canadian Geographic Names Database. The dataset is comprised of 4 files, each containing a separate feature type. The chart below sets out each file name, description of the files and the associated generic code (a descriptive code assigned by NRCan) for the files within the dataset. Each filename begins with the region covered by the file and ends with the feature type. For example, the terrain features layer in Ontario is called ONter.

Map Filename	Description	Associated Generic Codes
*PR*adm	Administrative Areas - Parks	518 - 599
PRwat	Water Features - Flowing Freshwater	600-1464
PRter	Terrain Features	1600-3906
PRman	Manmade Features	4101-4606

The Populated Placenames files are based on the latest version of the Canadian Geographic Names Database (1999) from NRCan. These files provide a rich and extensive database of cities, towns, villages and communities across Canada.

Map Filename	Description	
PRmjppn	Cities	Major Placenames
PRmdppn	Towns and villages	Medium-sized Placenames
PRmnppn	Communities, Hamlets, Settlements	Minor Placenames

The Landmark layers can be described in more detail as:

Layer Name	Feature Type	Generic Code
Administrative Areas	Parks	510-599 (excluding 543,552)
	Indian Reserves	543,552
Water Features	Flowing Freshwater	600-652
	Features on Flowing Water	700-797
	Standing Water Surrounded by Land	951-997
	Water Sources	1150-1158
	Standing Water Connected to Two or More Bodies of Water	1200-1249
	Tidal Water Features	1352-1358
	Shoreline Water Features	1400-1463
Terrain Features	Elevated Shoreline Features	1600-1653
	Low-lying Shoreline Features	1900-1932
	Underwater Features	2000-2069
	Terrain Surrounded by Water	2300-2436
	Elevated	2700-2859
	Depressed	2901-2955
	Flat	3100-3115
	Ice and Snow Features	3200-3213
	Forested Areas	3500-3515
	Open Areas with Low Vegetation	3570-3628
	Underground	3700-3705
	Volcanic Features	3900-3906
Manmade Features	Resource Related	4101-4122
	Transportation Related	4301-4387
	Others	4500-4606

Field Descriptions for the Landmarks file are as follows:

Field Name	Field Description
Prov	Alpha code that identifies the province or territory of Canada where the feature/place is found. See Province Codes (below).
Prov_Code	Numeric code that identifies the province or territory of Canada where the feature/place is found. See Province Codes (below).
Feature_Name	Name of the feature or place
Unique_Key	Unique identifier. The first character indicates the province or territory to which the feature/place belongs.
Border Flag	Indicates whether a feature crosses a provincial/territorial international boundary.
Generic_Code	Code that identifies the type of feature or place.
Generic_Term	Identification of the generic code, indicating the type of feature or place.
UTM_Map	The NTS 1:50 000 scale map (if not available, the 1:250 000 NTS or a CHS chart) where the approved coordinates of the feature lie.

Field Descriptions for the Populated Placenames file are as follows:

Field Descriptions

Field Name	Field Type	Field Description
Name	Char(68)	Name of the feature or place
Prov	Char (2)	Identifies the province or territory of Canada where the feature/place is found.
PPN_Code	Decimal (3,0)	Populated Placename Code that identifies the type of feature or place.
Longitude	Decimal (11,6)	Longitude
Latitude	Decimal (11,6)	Latitude
Prec_Code	Decimal (2,0)	Code which identifies the method used to geographically position the coordinate
Mjr_City	Logical	Flag which identifies cities that have a population greater than 100,000
Capital	Logical	Identifies Capital Cities across Canada
PRCDCSD	Char (8)	Code which identifies the Municipality within which the point falls
CSD_Name	Char(68)	Municipal Name within which the point falls
CSD_Pop96	Decimal (11,0)	Represents the 1996 Population for the Municipality within which the point falls

Province Codes

Prov	Prov_Code	Province	Prov	Prov_Code	Province
NF	10	Newfoundland	SK	47	Saskatchewan
PE	11	Prince Edward Island	AB	48	Alberta
NS	12	Nova Scotia	BC	59	British Columbia
NB	13	New Brunswick	YT	60	Yukon
QC	24	Quebec	NT	61	Northwest Territories
ON	35	Ontario	NU	62	Nunavut
MB	46	Manitoba			

Additional files included in the Map Bundle are:

Filename	Description
provdesc.tab (e.g. ondesc)	A file that contains 2 fields: unique_key and description, that can be linked to any Places and Landmarks file through the unique_key field. It contains a location description of the place and/or landmarks.
allcodes	Detailed list of Generic Codes for the Places and Landmarks file.
nts250; nts50; obmindex	Grid indices for the National Topographic Database 1:250,000 and 1:50,000 scale maps and the Ontario Base Maps. These grids can be overlaid onto the NAIS files to determine the corresponding NTDB or OBM mapsheet for that geographic region.
prcodes	List of all generic codes in each province and a count of the number of records with each code.