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CANADA'S NATIONAL TOPONYMIC DATA BASE

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The National Toponymic Data Base (NTDB) is an integrated digital and analogue database of geographic names information maintained by the Toponymy Section, Energy, Mines and Resources Canada. It presently contains approximately 484 500 toponyms and associated names information. Some toponymic records date back to the founding of the first Geographic Board of Canada in 1897. 70% of the toponyms recorded are names approved by the Canadian Permanent Committee on Geographical Names (CPCGN) for official use.

The NTDB is used by the Toponymy Section to respond to large-volume requests for geographical names information. Specifically, to compile names lists for Canada's National Topographical Mapping Program and for special purpose mapping such as the 1:2M Base series, the IMW series, and National Park maps; to produce the Gazetteer of Canada series; and to respond quickly to names requests for specified fields of information with outputs being made available in magnetic tape, diskette or hardcopy format.

The digital component of the NTDB has recently been updated using ORACLE, running on SUN hardware in an UNIX environment. ORACLE, a relational database management system offering Standard Query Language (SQL) command language, is an extremely flexible, user-friendly language which satisfies the functions of a data definition language, a data manipulation language and a query language. ORACLE can take input from any standard ASCII file. Due to software limitations, ASCII substitution characters are made for approximately 20 characters within the database, e.g. É is substituted by < , à by @ , and ç by \ , etc.

SUN was chosen primarily because of its cartographic capabilities. It supports programs run on UNIX which is the operating system selected for the development of the National Atlas Information System (NAIS), of which the NTDB is a component. The NTDB will be one of several databases residing on the SUN hardware, using ORACLE data management software, and forming part of the NAIS information management system.

The inflexibility of the old system (DEC PDP 11/45 hardware, RSTS/E operating system, and DATABOSS/2 software) made the decision to upgrade inevitable. Specifications for the revised database required that there be no barriers between fields and that all fields could be cross-referenced and queried in any combination in a specified time limit. The new system configuration allows users (both internal and external) fast and easy access to the database. Once properly logged in, the user has the option to work in either French or English with all prompts and instructions (with the exception of ORACLE messages) available in both official languages. A name record can be easily accessed within seconds or a list of names applying to any map sheet area of the National Topographic System (NTS) can be retrieved within a couple of minutes for either a 1:50 000 or 1:250 000 scale map. Names lists can be generated for polygon areas, as well as for a specific region such as a province or territory. There is a large number of combinations of fields on which to query - feature name, NTS map reference, location of feature (municipality, county), cadastral information, geographic coordination, name status, origin narrative, and approval date, to name a few.

Several new fields of information have been added to enhance the NTDB. For example, a border flag (used to indicate a feature that crosses a provincial, territorial or international border), UTM grid reference, and information on individuals who were casualties of the World Wars and have geographic features named for them. Lists combining any or all fields of information can now be developed through report functions or through SQL statements, making the Toponymy Section better able to respond to clients' particular needs.

NTDB		Name Record			Version 1.0	
Feature Name Ottawa						
Name Key OTTAWA						
Unique Key	Latitude	Longitude	Region	35	Ontario	
FEOLW	452500	754200	Status	A6	Confirmation	
	Gazetteer Map		Generic	1	City	
	031G05		Obscure	Y		
			Boundary			UTM Grid
DATES DD/MM/YY CC						
Decision	: 12/12/39	19				
Meeting	:		Gazetteer Cross-Reference			
NTDB Update	: 20/07/88		Bytown			
Location 1 :						
Location 2 :						
Loc-Narr : Within Regional Municipality of Ottawa-Carleton						
Origin Narr:						
Incorporated into the Town of BYTOWN by C.S. 1849, c. 81 effective 1 January 1850. The Town of BYTOWN was changed to the City of OTTAWA effective 1 January 1855 by C.S. 1854, c. 23 and confirmed 12 December 1939 on 31G/5. OTTAWA is named after the river on which it stands. The name commemorates an Indian tribe living in the early part of the 17th Century on Manitoulin Island and the shores of Georgian Bay. The Ottawas, whose name comes from "adawe" - to trade, were noted as intercultural traders and barterers who claimed exclusive control of the Ottawa River, which was a trade route to Montreal.						

All toponymy data and codes are stored in the same way; in tables which are the basic unit of data storage in an ORACLE database. To date, 30 tables have been created for the NTDB. The all_regions table contains 28 fields of information which cover the main fields of information about a feature e.g. unique key, name key, feature name, generic code, status code, latitude, longitude, UTM grid, gazetteer map reference, etc. The supplementary tables contain information pertaining to related names, related maps, war casualty information, report parameters, and several tables relating to database management functions such as a user access table or a names history table which acts as an audit trail when information is changed or added to a database record. Origin narrative is kept outside the main database and is accessed through the operating system editor, known as "vi". From the detailed record form, the origin is accessed simply by a function key and the return to the main database is made through an editor command.

The present version of ORACLE does not fulfill all our needs. One main concern is the storage of the origin information outside the main database. This is due to the amount of origin information sometimes associated with a name and the restriction of a 240 character field being displayed and edited on the screen at one time. The next version of ORACLE promises to correct this shortcoming. Also the 128 characters presently displayable in ORACLE forms software do not accommodate the non-standard diacritics or syllabics required for some geographical names in Canada. To correct this situation we could acquire the forms software that allows the 8-bit character set to be displayed and convert our present 7-bit character data files to the 8-bit character set such as the DEC multi-national character set. This last concern is a hardware concern not only of SUN but of other major systems such as VAX as well.

The future of the NTDB looks very exciting. External access to the upgraded database through the use of dial-up facilities will soon be in place. This facility may be used for remote demonstrations of the system and system support as well as viewing of the NTDB by approved users. It is hoped that Canadian Permanent Committee on Geographical Names (CPCGN) members will eventually

be able to transmit their names decisions and access information on-line. The various other systems networked on the SUN will benefit from the NTDB and use the authoritative bank of Canadian geographical names and associated information, as approved through the CPCGN. The NTDB will be able to utilize the graphic information presently being captured on ARC/INFO as well as the digitized multi-coordinate data for enhancement of its present database components. The graphic and attribute files will definitely compliment one another to assist the National Atlas Information Service Section in producing more timely and authoritative products. Work has commenced with regard to cooperative ventures with other government departments and agencies, both federally and provincially.

Access to the National Toponymic Database will be possible through the use of dial-up facilities to approved users. To query the NTDB the following hardware will be needed.

- a 300/1200 baud Hayes compatible modem and a telephone line capable of connecting this modem through a modular jack;
 - a Digital VTxxx or compatible terminal capable of performing VT100 or VT 200 emulation.
- or
- a personal computer with communications software, allowing outside telephone access. It is preferable to have communications software capable of allowing the user to redefine keyboard commands.

For further information regarding the NTDB or acquisition of information please contact the Toponymy Section, Geographical Services Division, Canada Centre for Mapping, Department of Energy, Mines and Resources, 615 Booth Street, Room 650, Ottawa, Ontario, K1A 0E9 Canada or telephone at (613) 992-3647 or fax at (613) 992 4961.