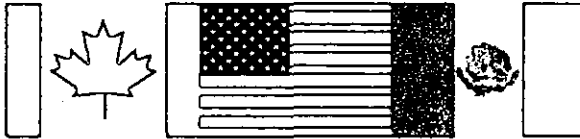


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Third Annual Trilateral Conference on Electoral Systems • Washington, DC • May 8-10, 1996

# Drawing Electoral Boundaries

*General Methods and Computer Applications*

Presented by

**Carol Lesage**

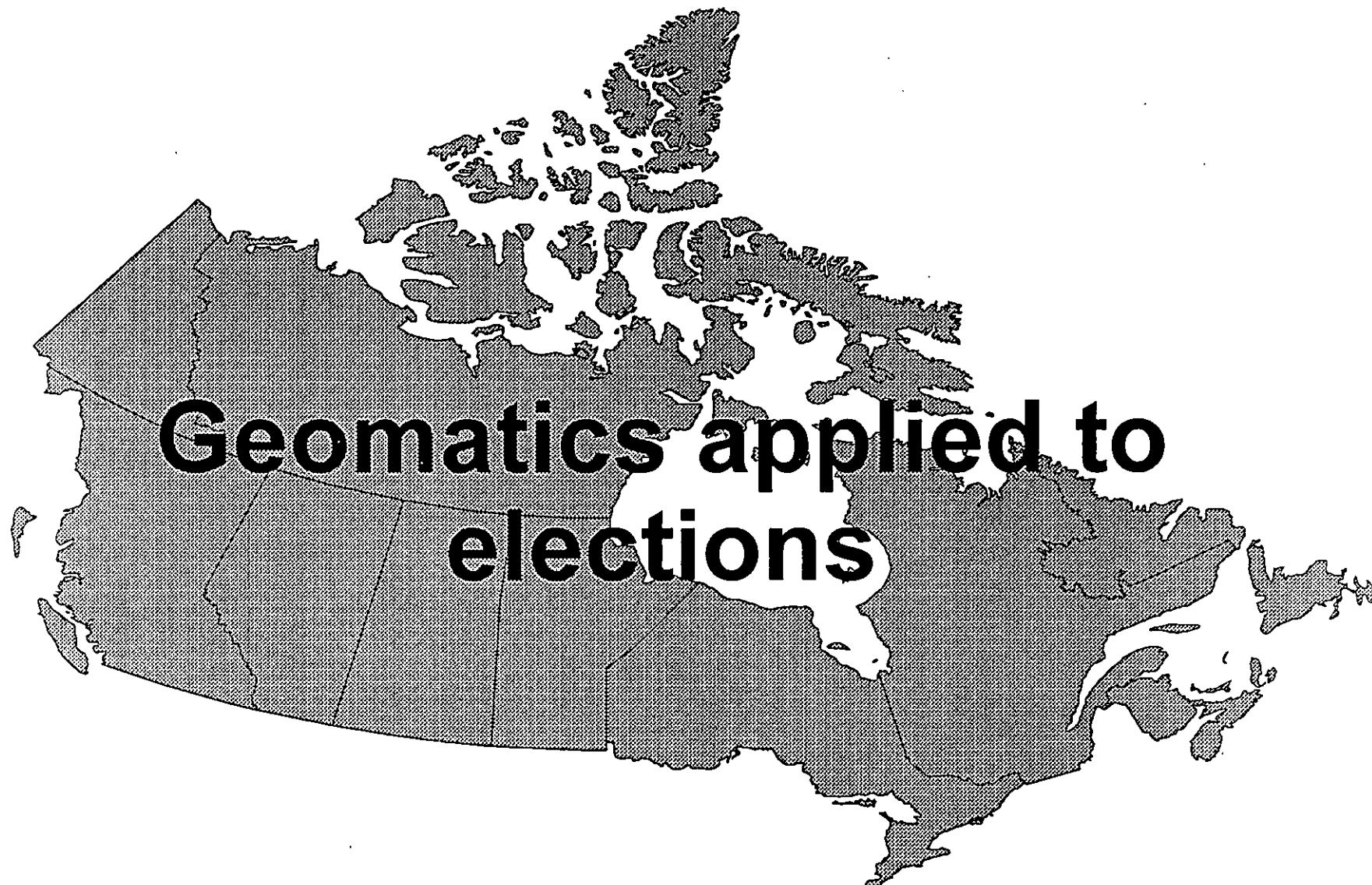
**Assistant Director of Operations**

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WASHINGTON, DC 20005**

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# Geomatics applied to elections

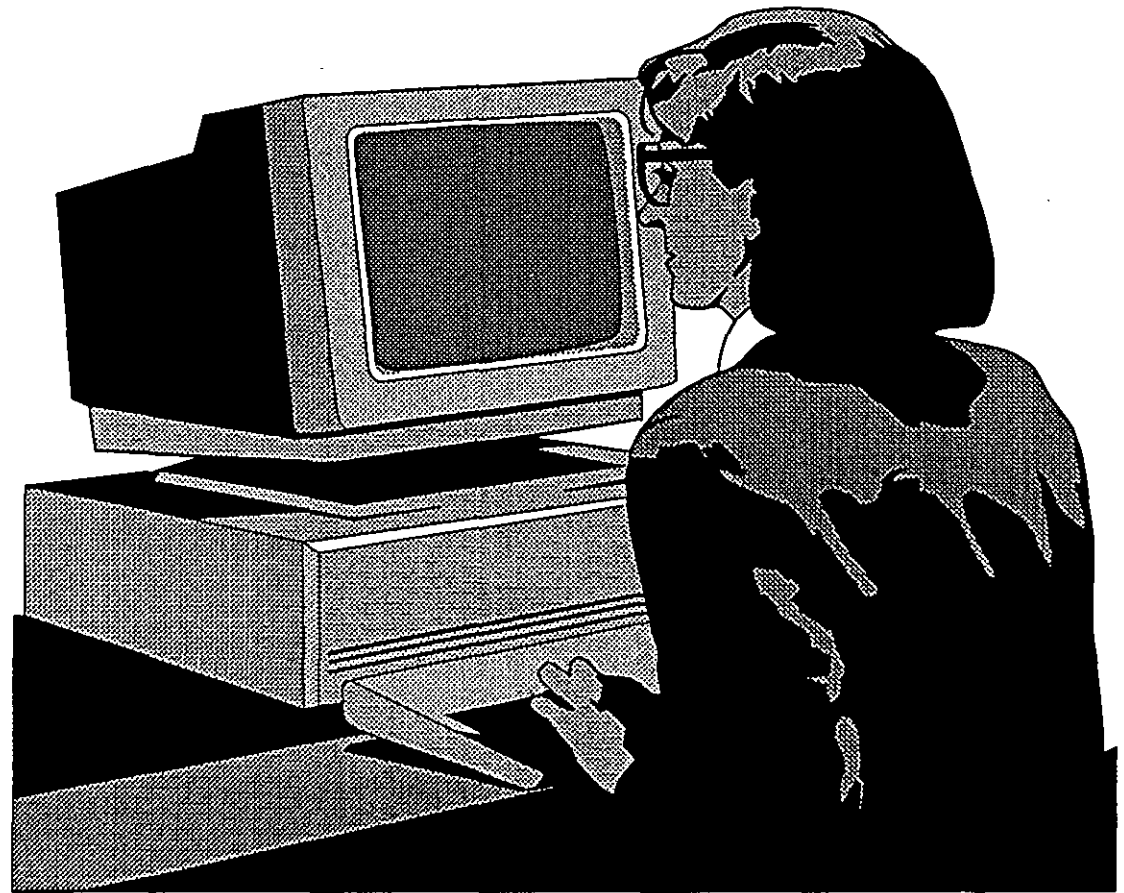
Slide 1

# The experience of Elections Canada

**What is geomatics?  
*equipment, software, procedures***

# Geomatics applied to elections

## Capturing



# Geomatics applied to elections

## Managing



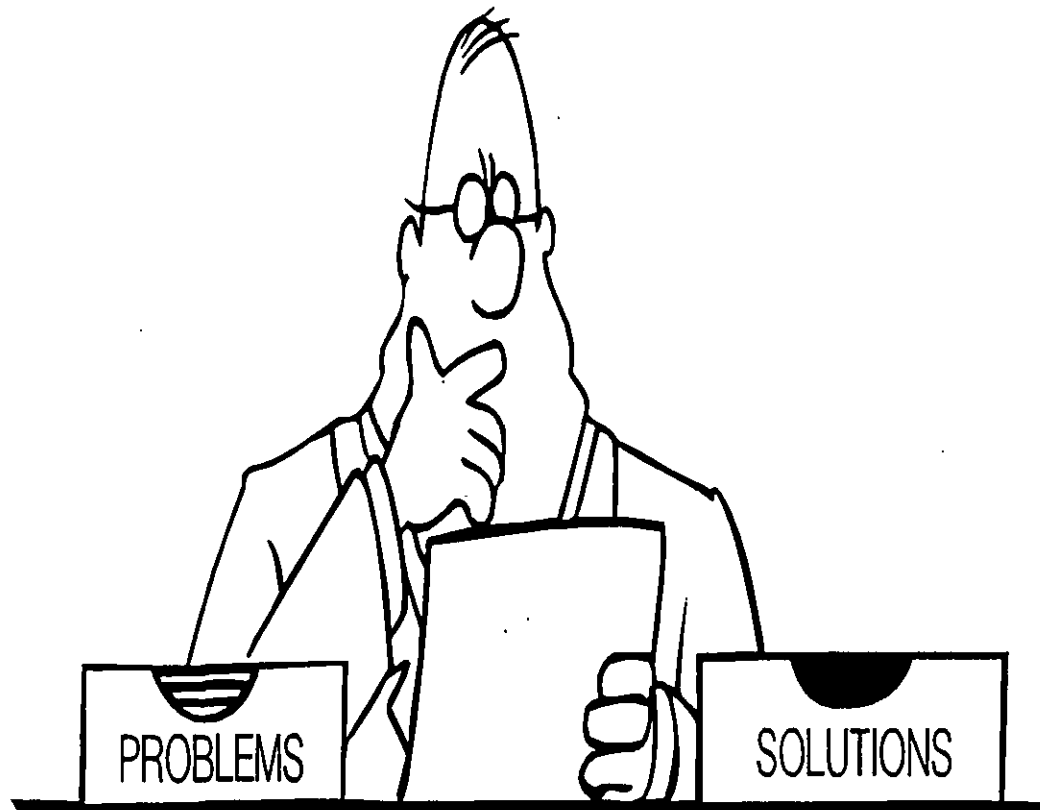
# Geomatics applied to elections

Processing



# Geomatics applied to elections

## Analysing

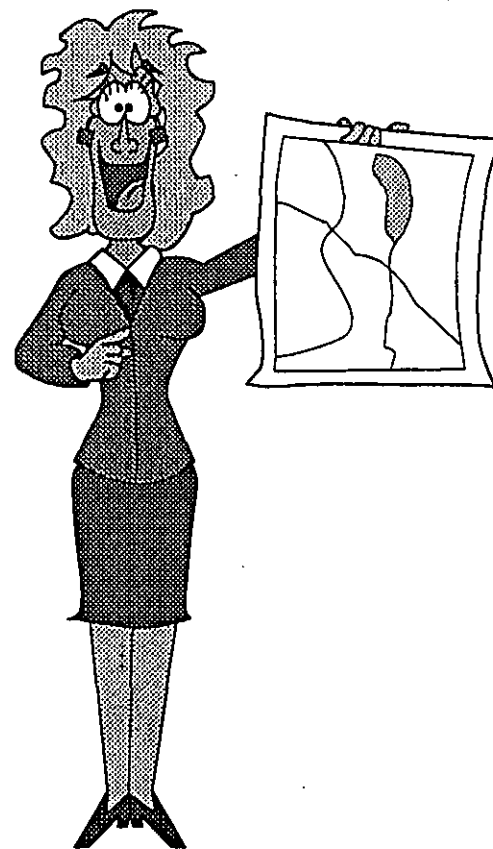




# Geomatics applied to elections

Illustrating

Data with spatial references



# Use of geomatics at Elections Canada

**Electoral district boundaries  
readjustment**

**Electoral process: establishment of  
polling divisions**

**Register of electors**

# **Geomatics applied to elections**

**First usual application = cartography**

**First application at Elections Canada:**

- electoral district boundaries readjustment**

# **Electoral Boundaries Readjustment**

**Every 10 years**

**Based on population**

**Electoral Boundaries commissions:**

- free from all political interference**
- consisting: one judge  
two commissioners**

# Electoral Boundaries Readjustment

## Role of Elections Canada

- **professional and technical:**  
human resources, advice
- **administrative:** offices, supplies,  
equipment
- **financial:** amounts of expenses  
taxed by the CEO

# **Electoral Boundaries Readjustment**

**Scenario selected - public hearings**

## **Digital cartography**

- advertisement: maps showing boundaries**
- electoral maps: final report of the commissions**

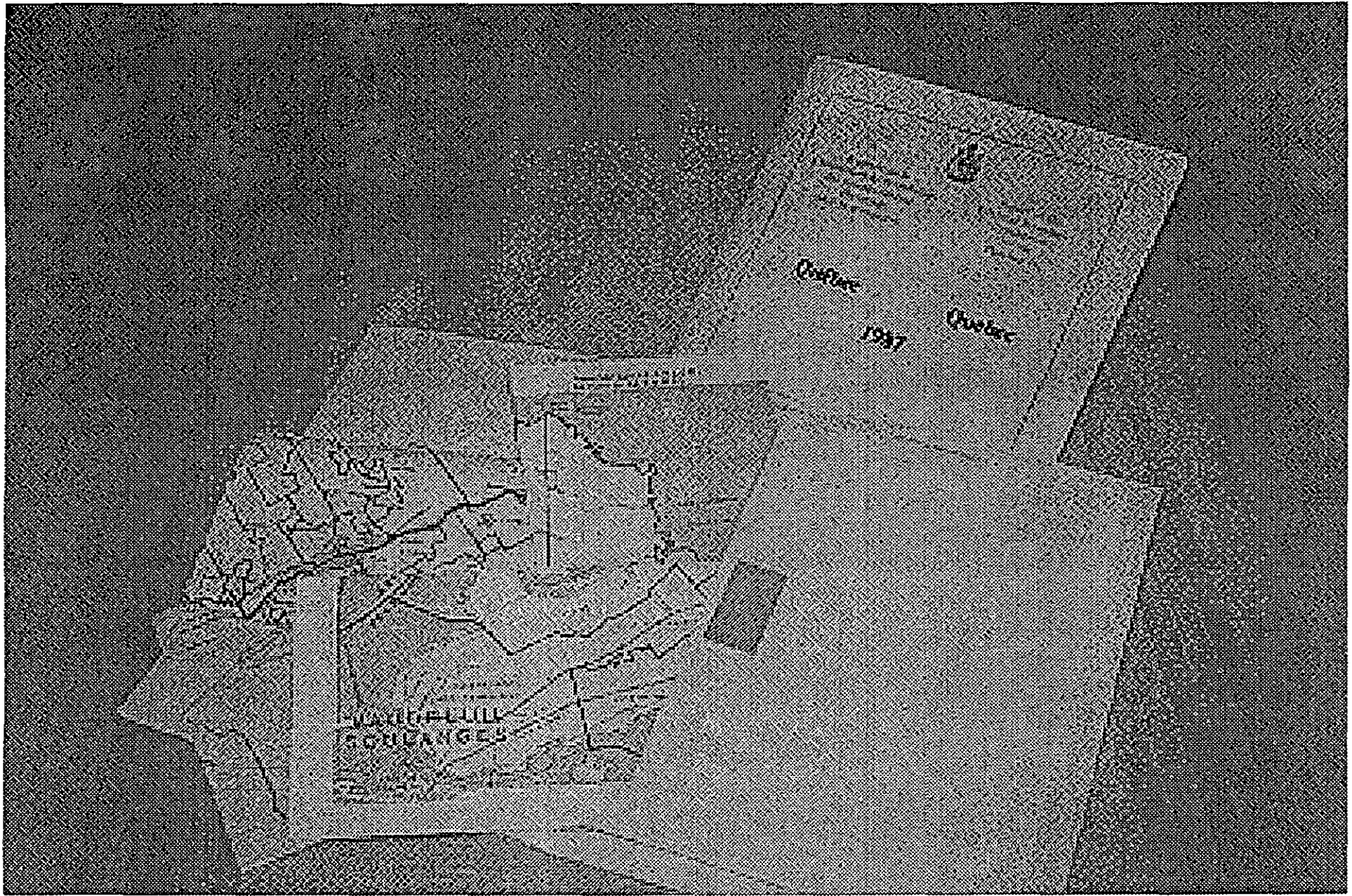
# Digital Cartography

## Advantages

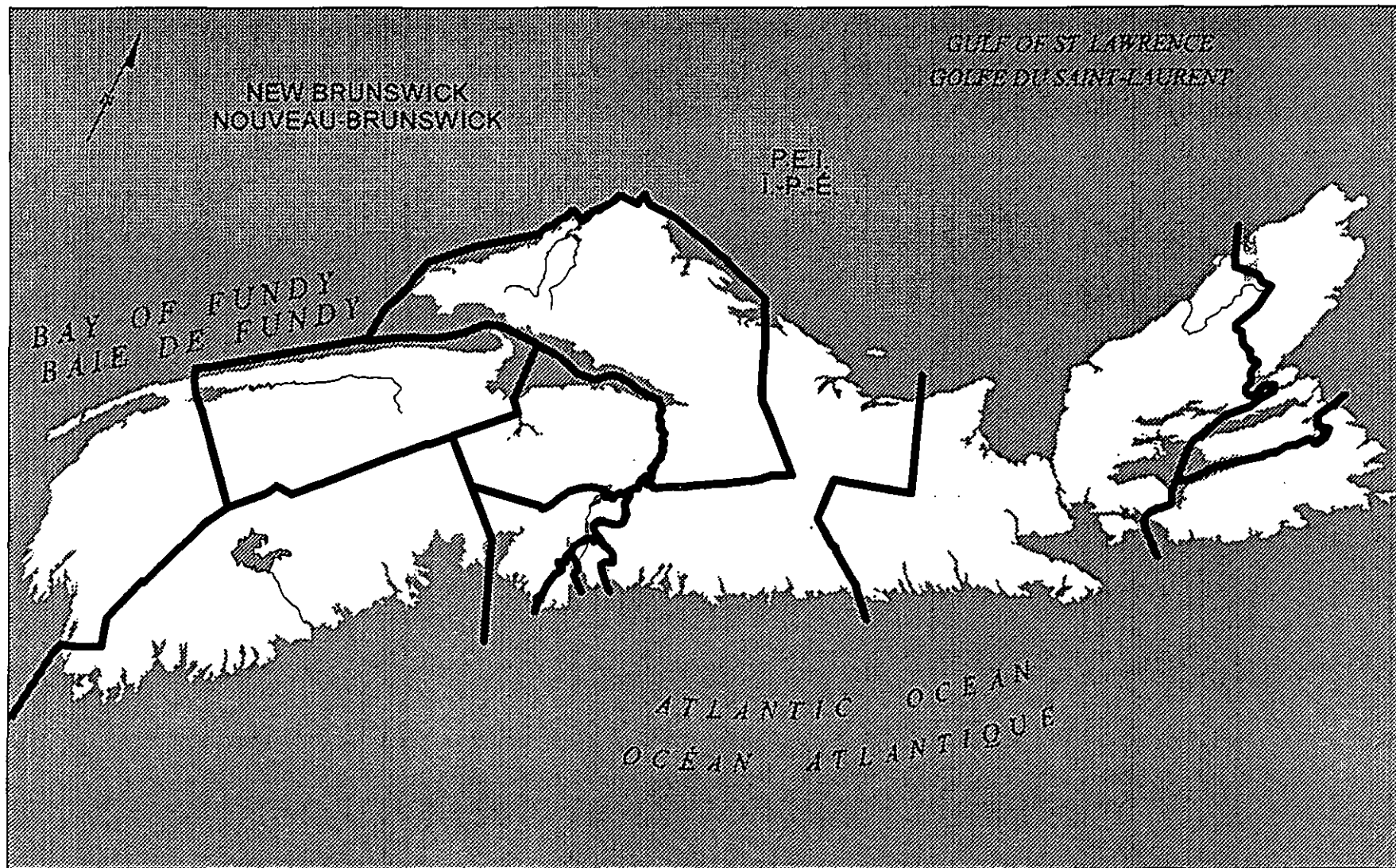
**Product flexibility: publicity**



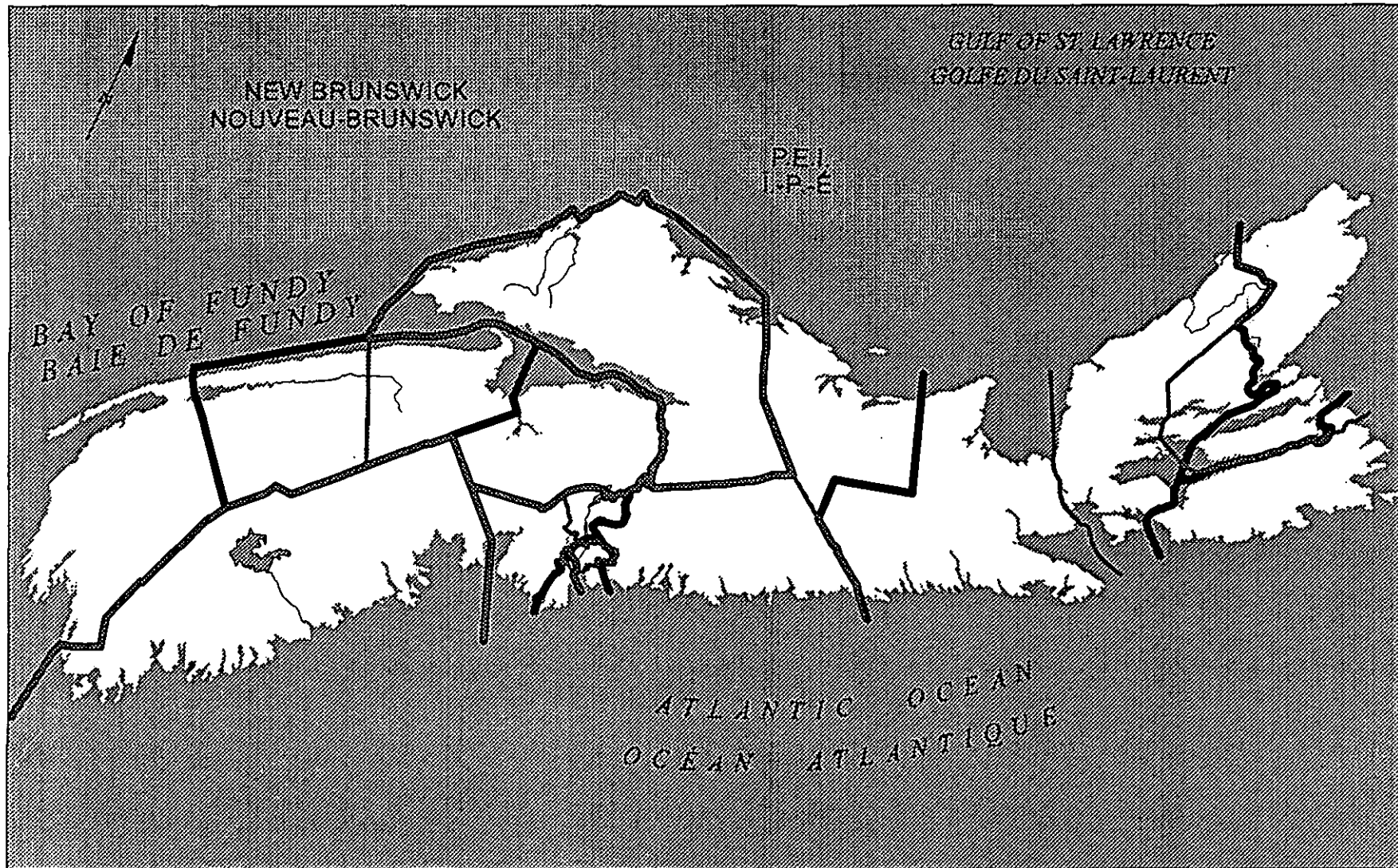




Slide 15



Slide 16

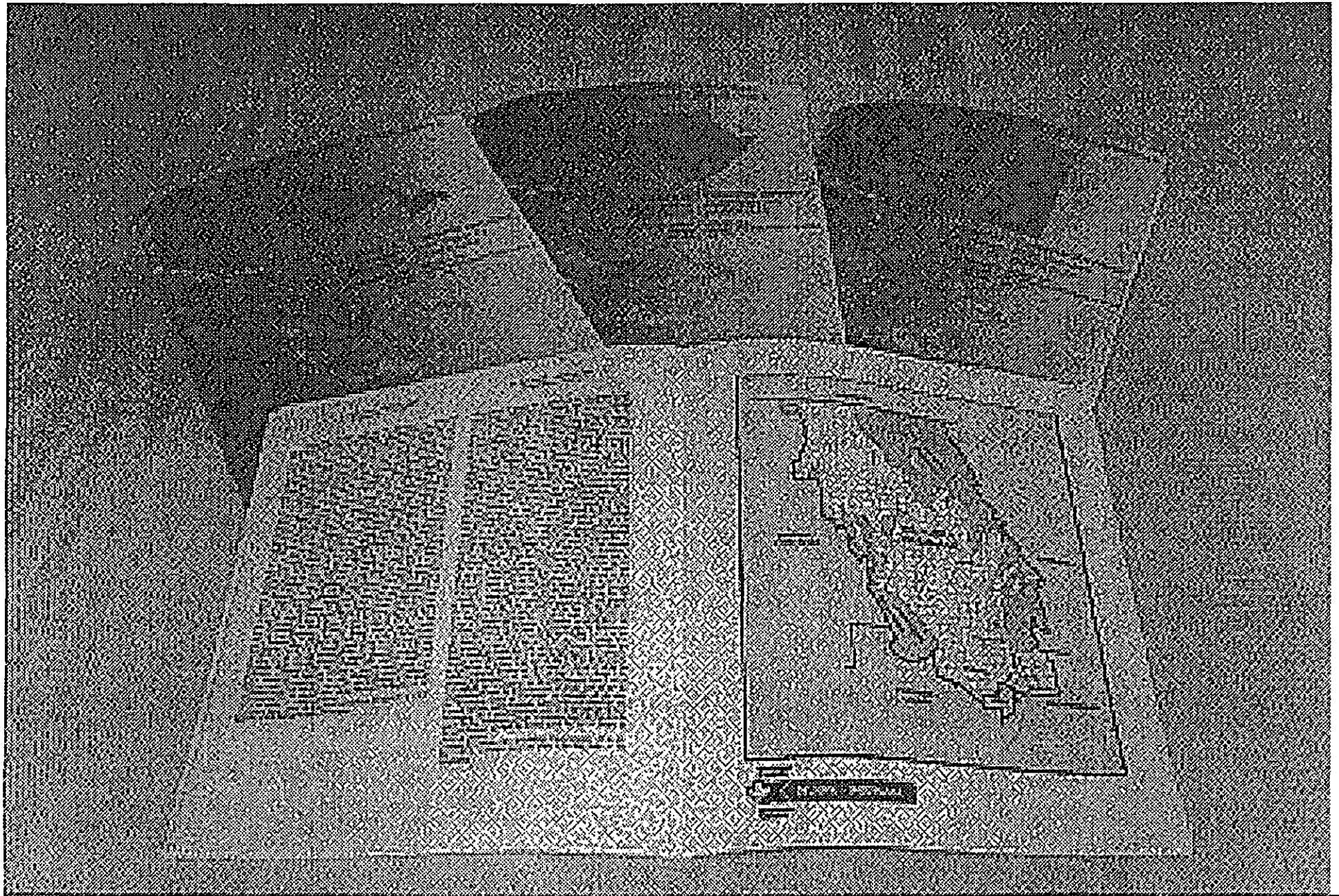


Slide 17

# Electoral Boundaries Readjustment

## Advantages of digital cartography

- **tight deadlines: rapid production of high quality maps**



Slide 19

# Cartographic Base

## Setting up - Sources:

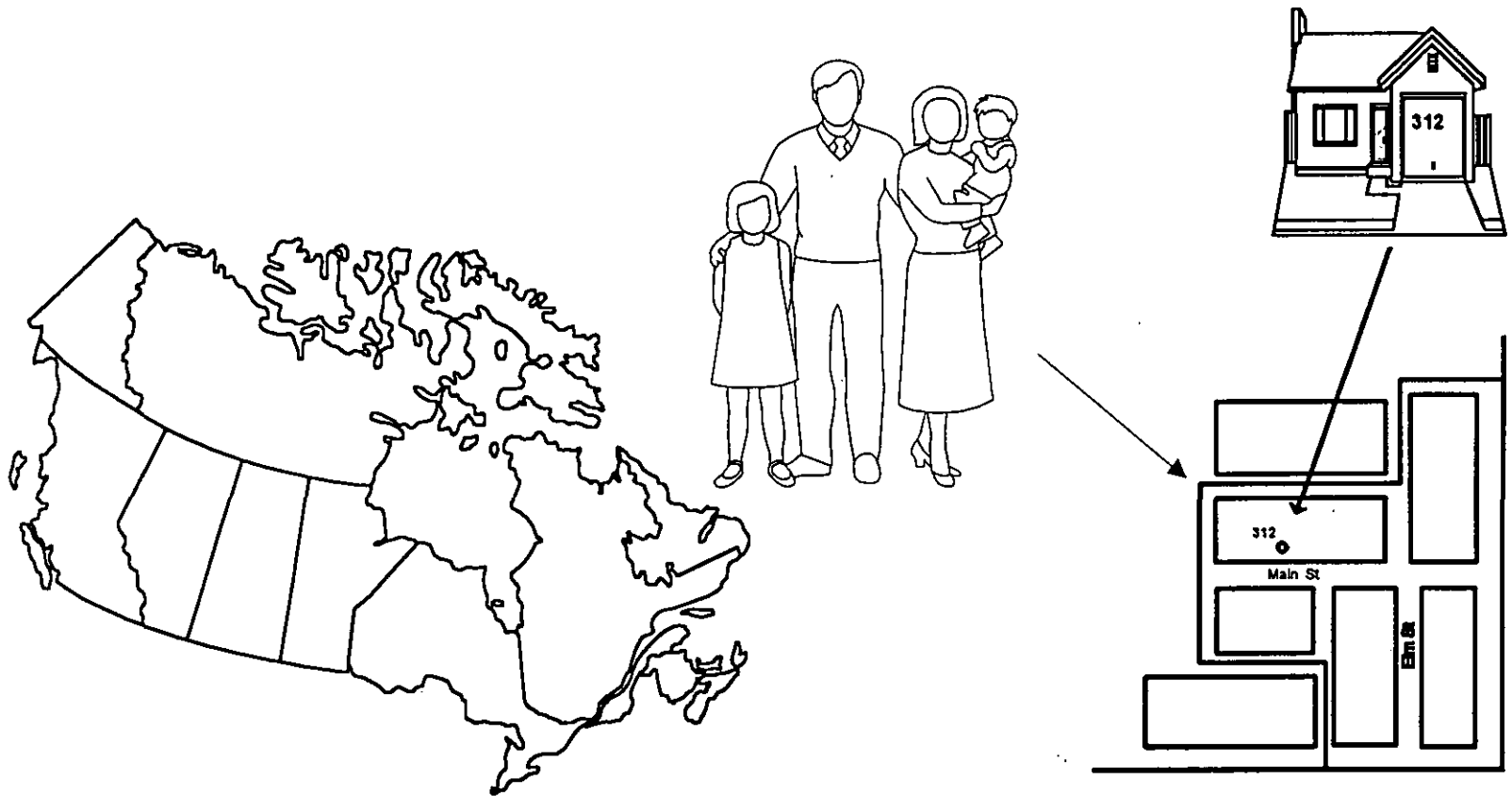
- Urban areas: Statistics Canada
- Rural areas: Natural Resources Canada

## Updating - Sources:

- Provinciales jurisdictions
- Canada Post
- Administrative sources

# National cartographic base -> geomatics

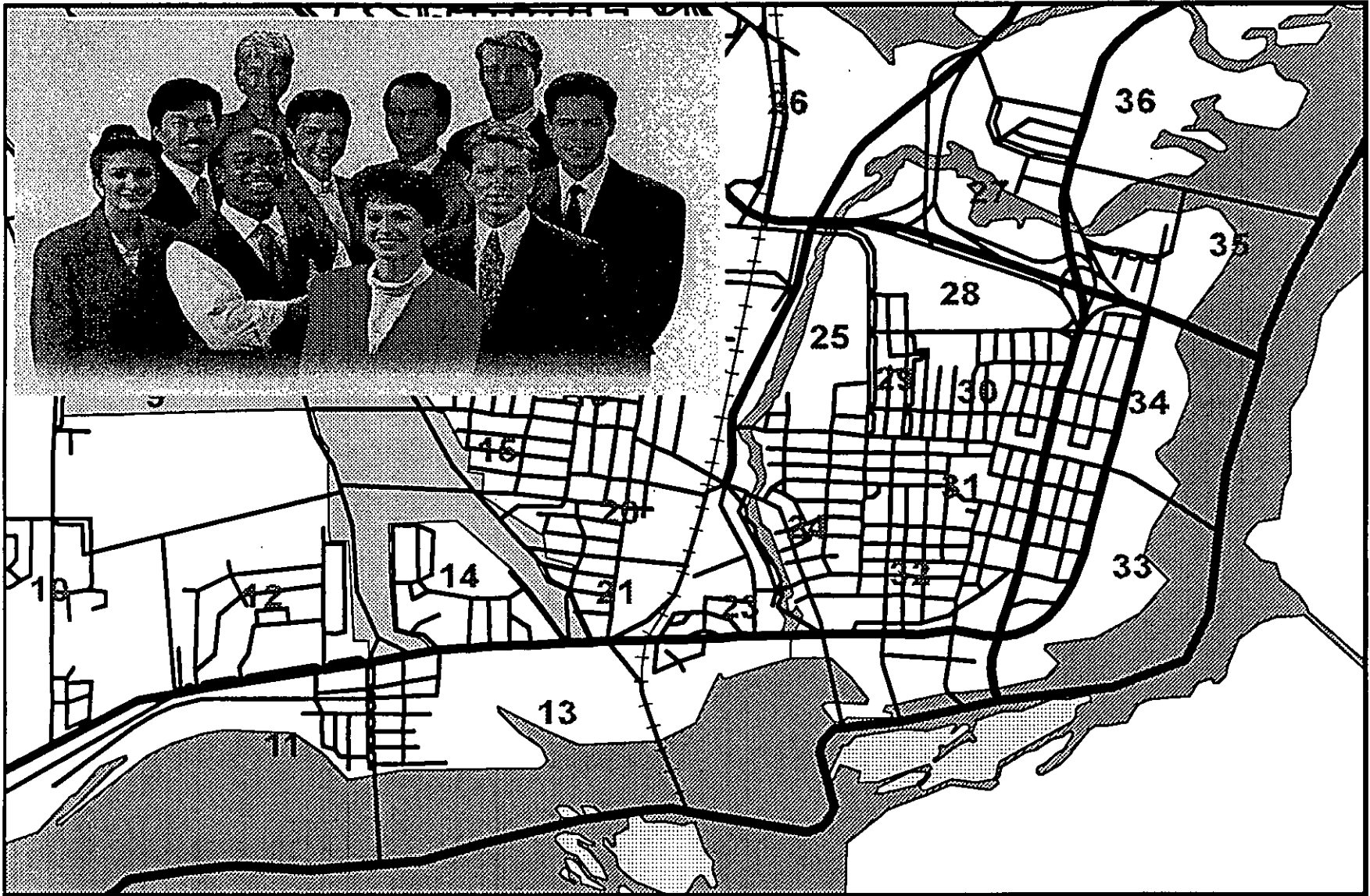
## Geo-reference data



# **Electoral Boundaries Readjustment**

- **link population figures**
  - > **computerized calculation of population/electoral district**
- **link socio-economic variables**
  - > **communities of interest**





Slide 23

# Electoral process

**Cartographic base -> socio-economic data  
-> electoral district profiles**

**Calculation of geographic area**

- limits of candidates' expenses**
- quicker**
- more accurate: no hydrography**

**Link the name and address of voter with the  
cartographic base**

# Automatic Redistricting

Computer memory

Number of electors/polling division

Determine polling divisions  
automatically

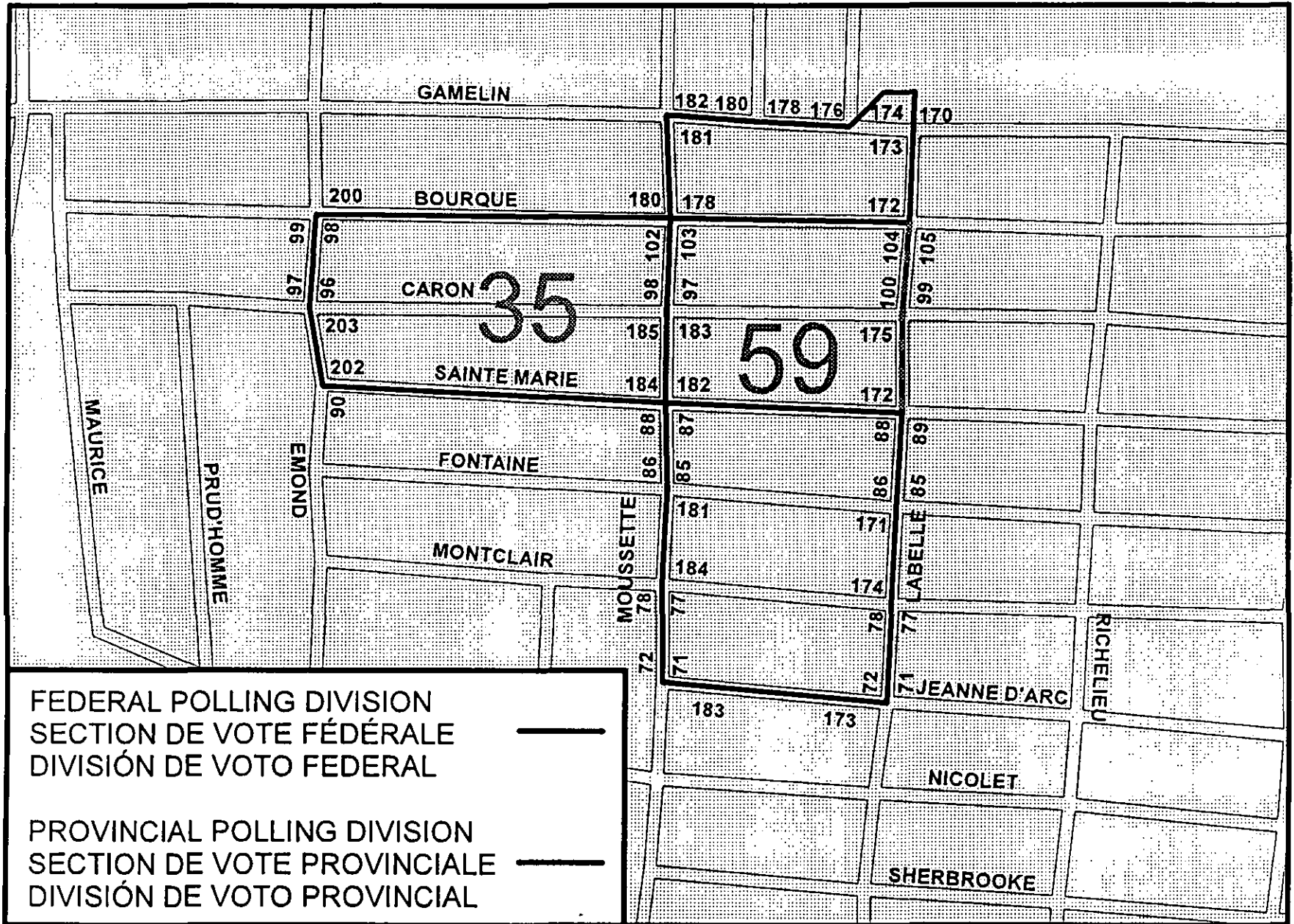
26 - 34

# Electoral process

Link the name and address of voter with  
the cartographic base

Applications:

- computerized production of lists  
of electors:
  - . federal
  - . provincial, municipal, school  
boards



# **Technology allows**

**Information-sharing among various jurisdictions**

**Substantial savings**

**Public perception: elimination of duplication**

# **Caveat**

**Urban areas only**

**Rural areas: no street addresses**

**Voters: based on address of residence**

**Emergency services - 911**

**Urban areas: 75% of the population**



# Registration of voters

Door-to-door enumeration

Enumeration records: pre-printed addresses

Reduce risk of error in data entry

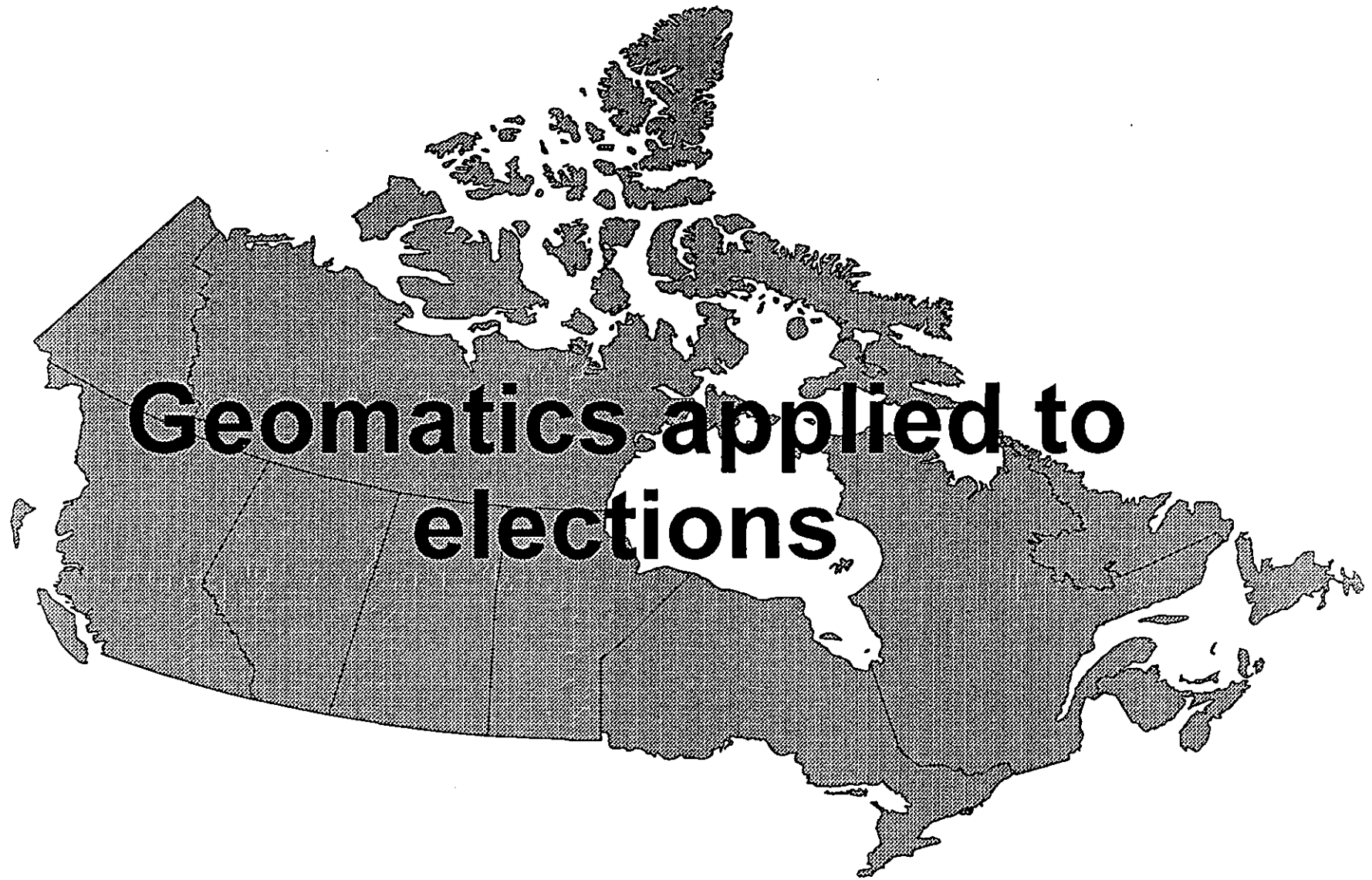
# Digital Database

**Availability of textual and cartographic data in digital format**

- compact discs, diskettes

**Transmission of data**

- Internet
  - access to information
  - protection of privacy



# Geomatics applied to elections