



Parks
Canada

Parcs
Canada

Canada

THE LACHINE CANAL REVITALIZATION PROJECT



OVERVIEW

- **Geographic and historic context**
- **Revitalization project of the Lachine Canal**
- **Environmental issues**
- **Sediments contamination monitoring program and contingency plan**
- **The impact of the new canal**

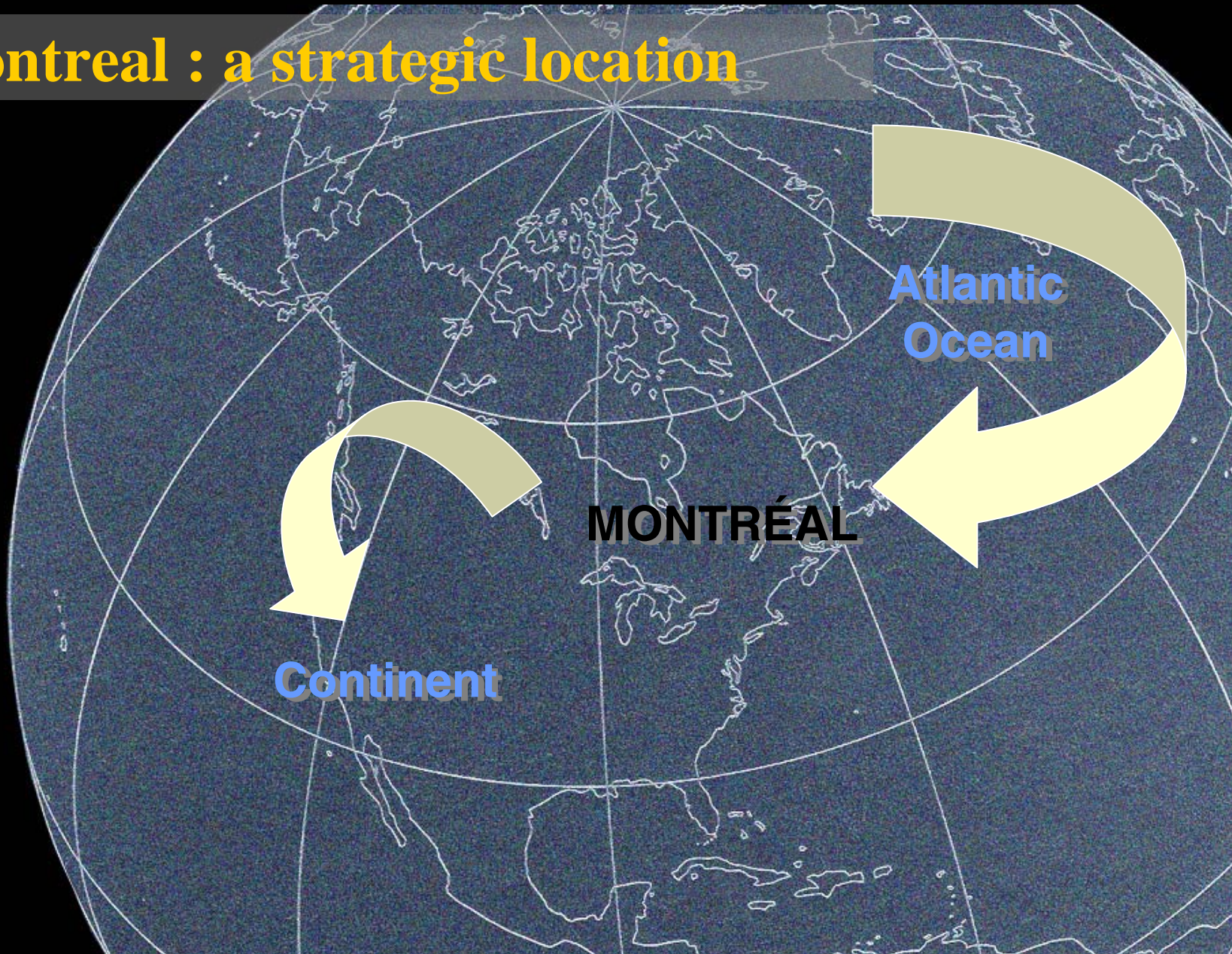
Montreal...



... a city defined by its river



Montreal : a strategic location



Atlantic
Ocean

MONTREAL

Continent

Montreal : a strategic location



The Lachine Rapids



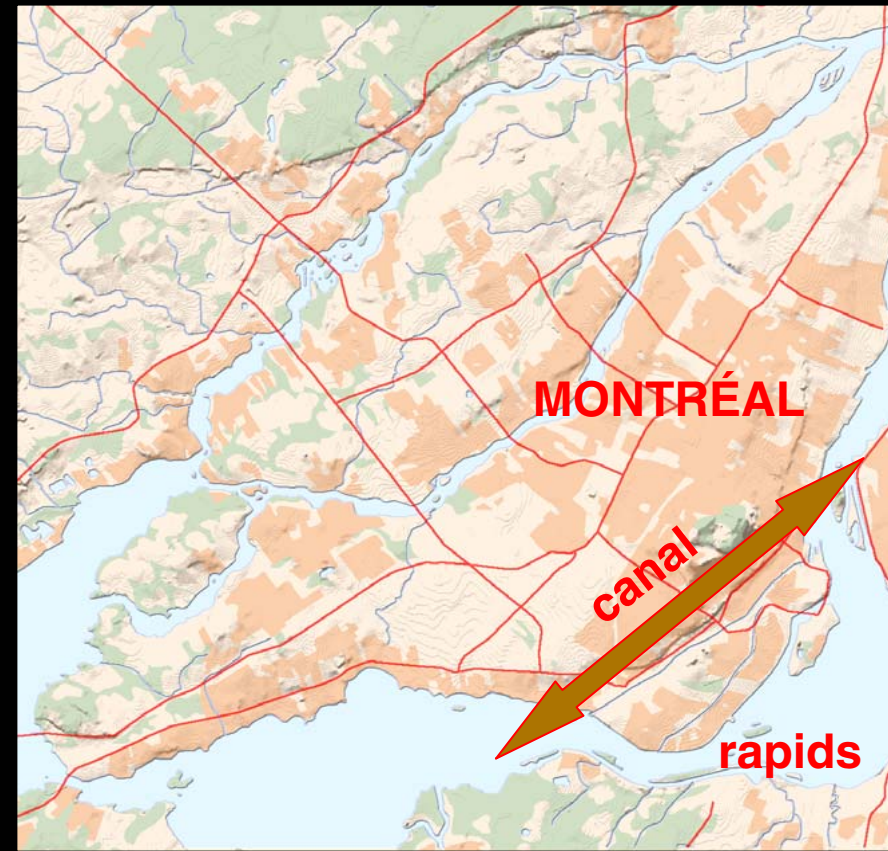
THE LACHINE CANAL



A few facts about the canal

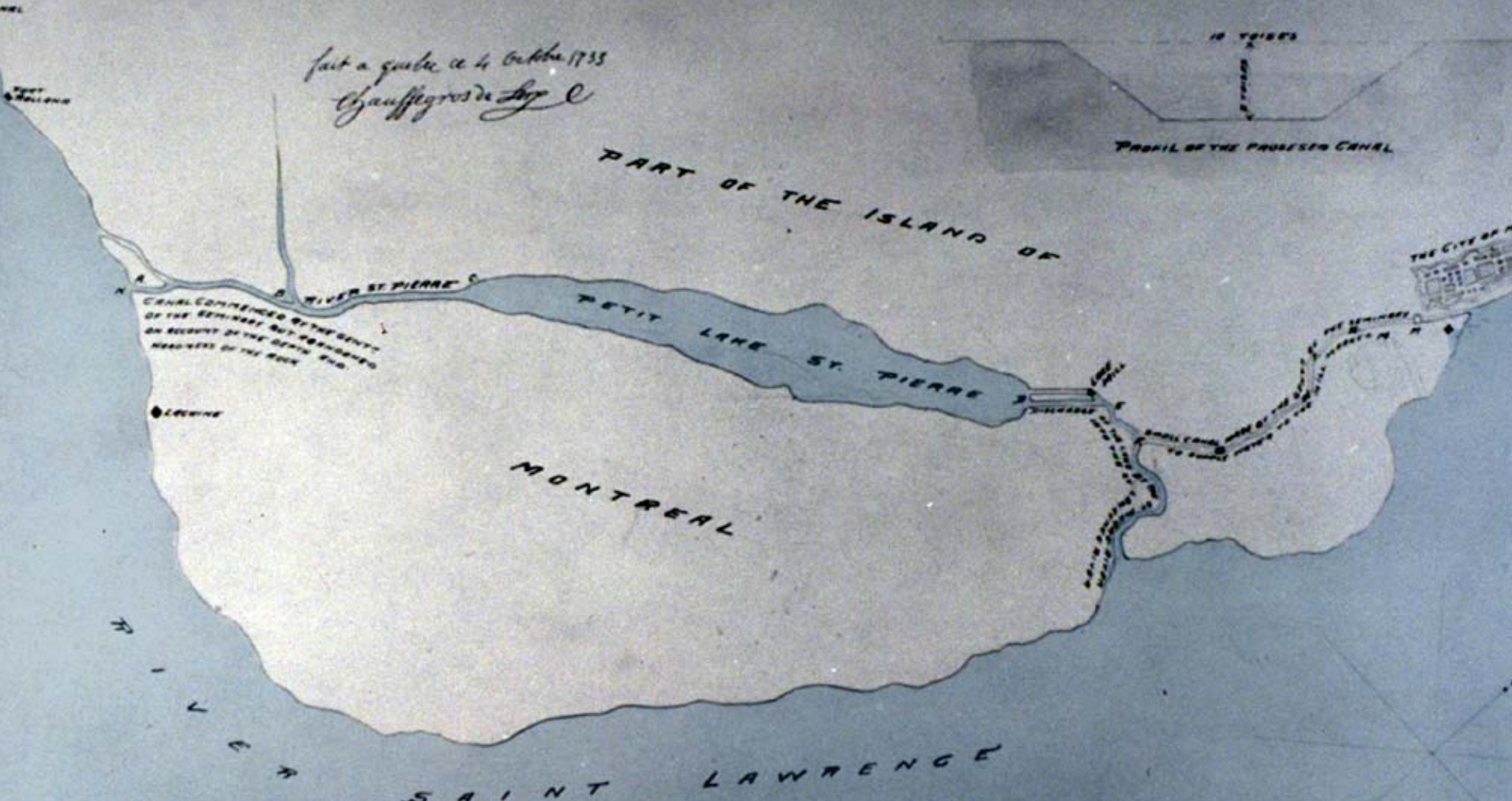
THE LACHINE CANAL

- bypasses the Lachine Rapids
- is 14.5 km long
- has 5 locks
- shows a drop of approximately 14 m
- is crossed by 23 bridges or footbridges
- is a national historic site
- managed by Parks Canada Agency



A project as old as the city

PLAN OF THE CANAL FROM POINT A CARDINAL TO THE
CURRENT STE. MARY SHEWING THE CANAL (A.B) COMMENCED BY THE GENTLEMEN OF THE
SEMINARY BUT ABANDONED ON ACCOUNT OF THE ROCK ALSO A SECTION OF THE
PROPOSED CANAL



Construction in 1821-1825



Enlargements in 1848 and 1885

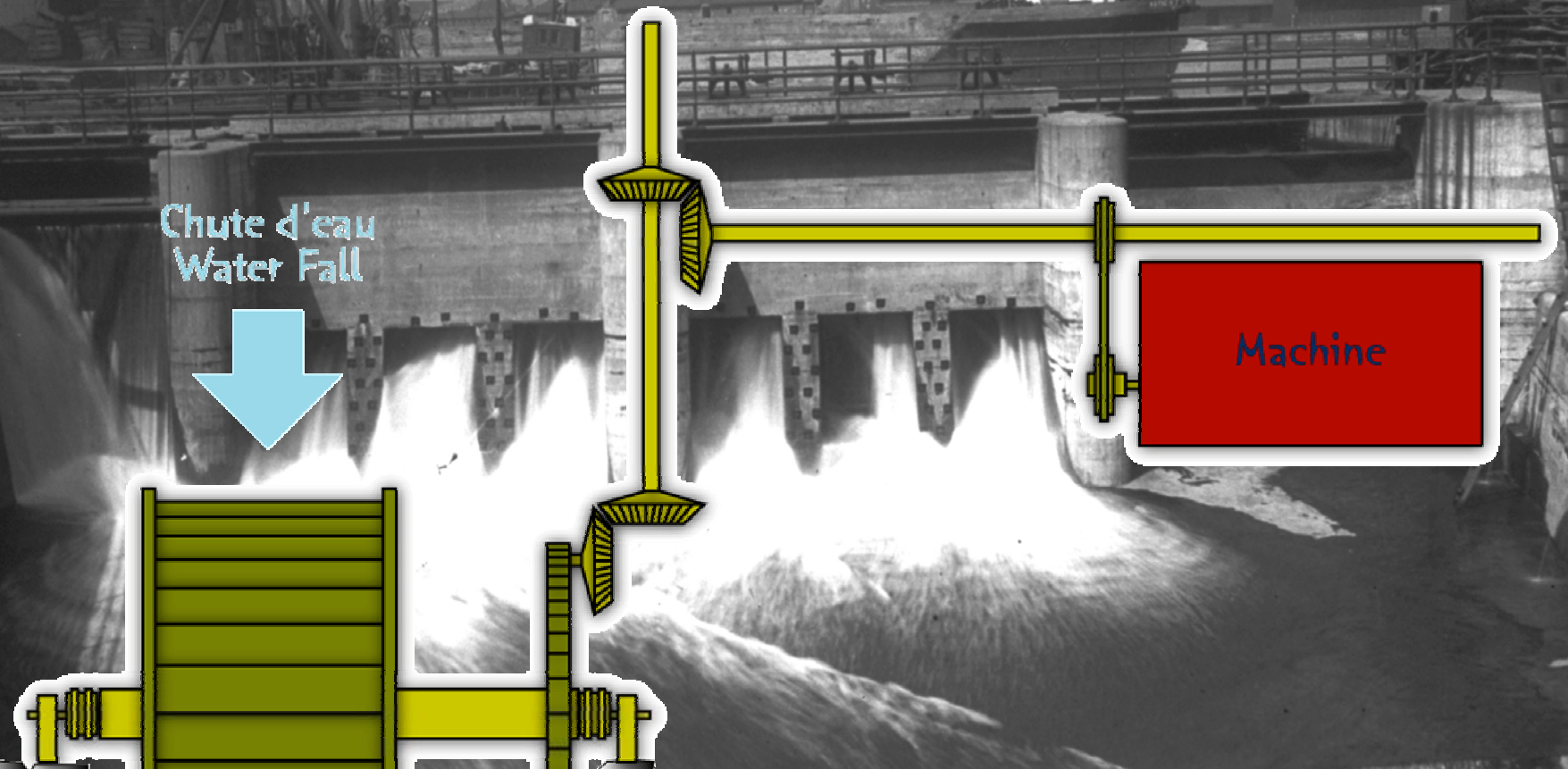


A major transportation infrastructure

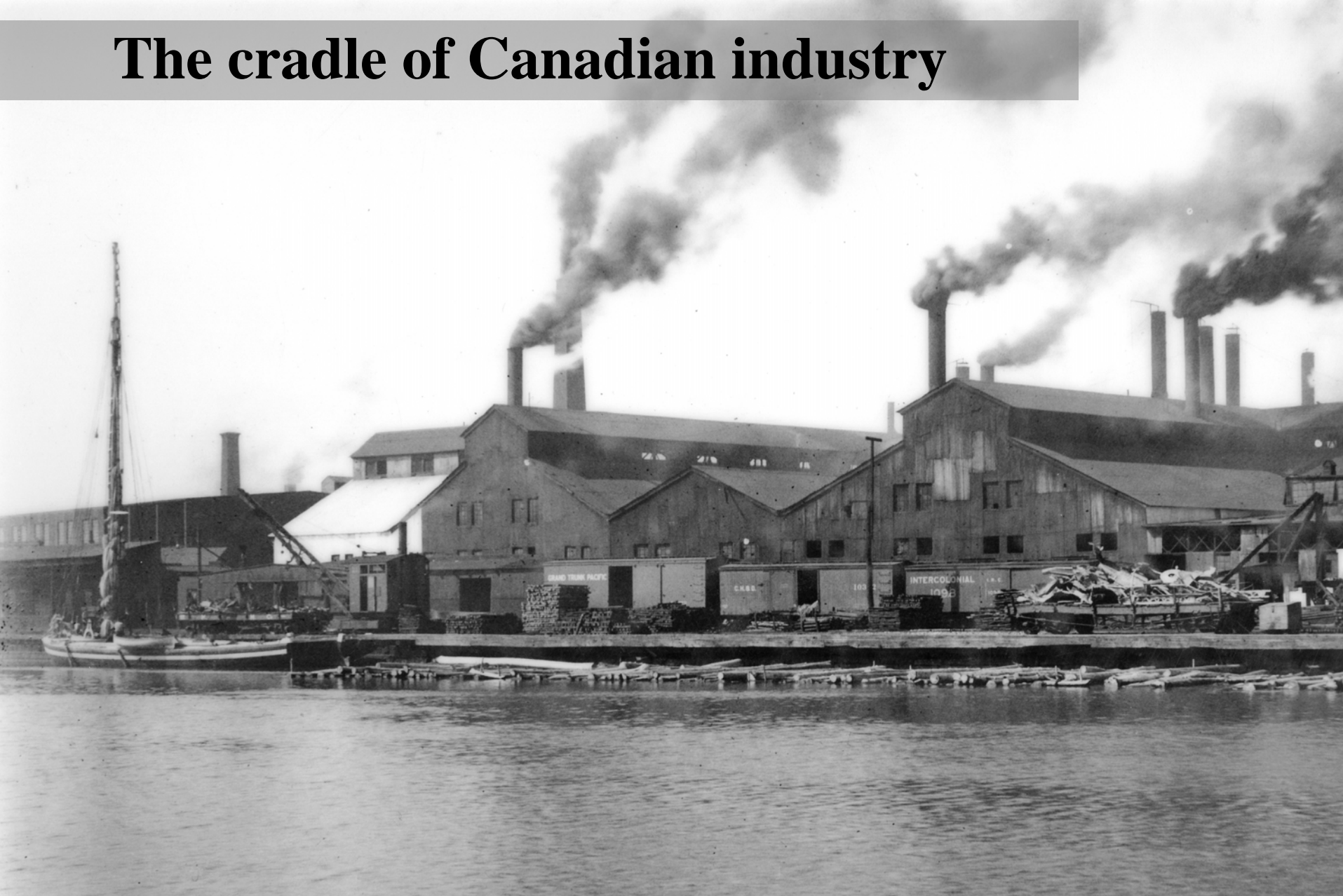


A supplier of hydraulic power

Chute d'eau
Water Fall



The cradle of Canadian industry



A canal that shaped the city



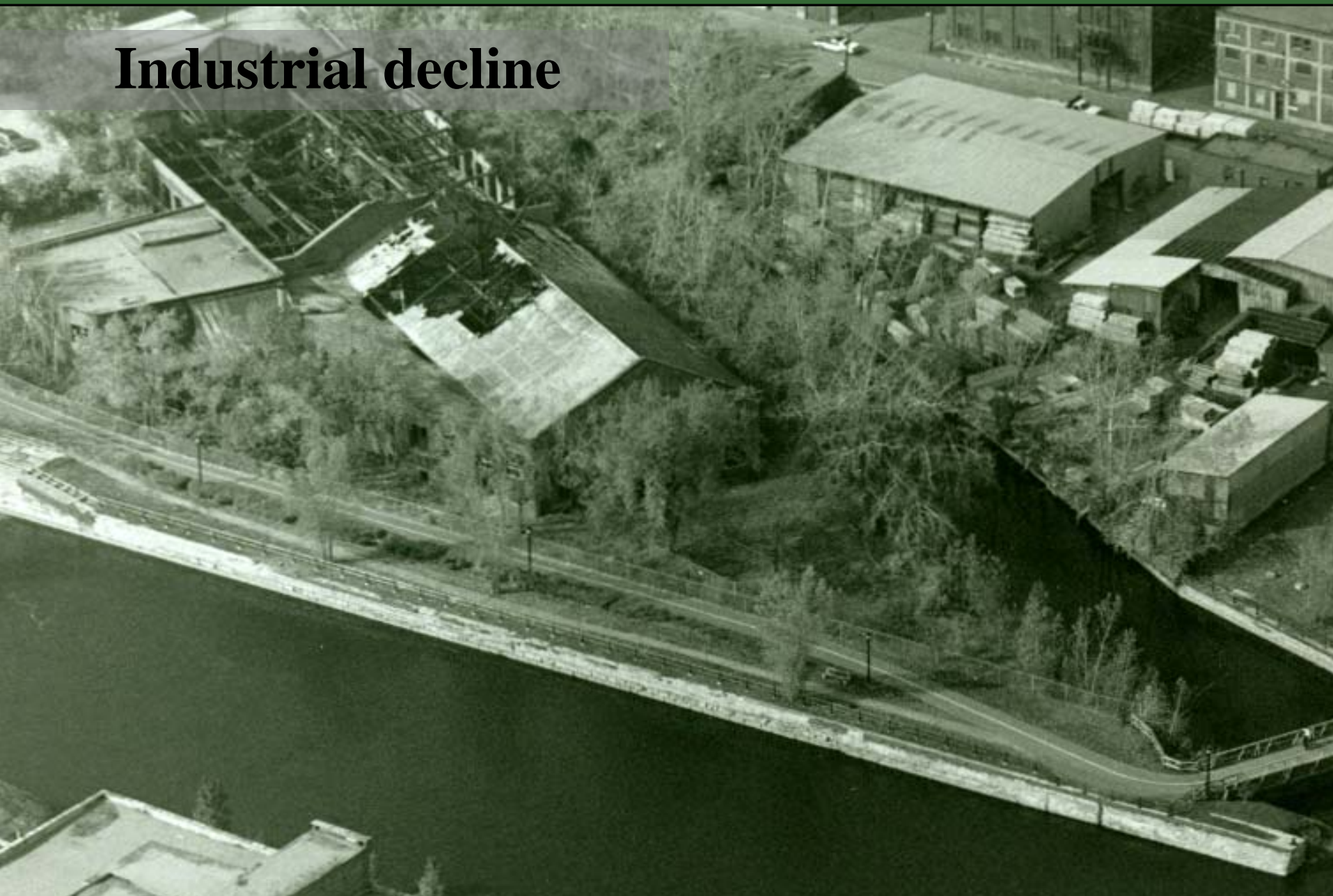
The St. Lawrence Seaway



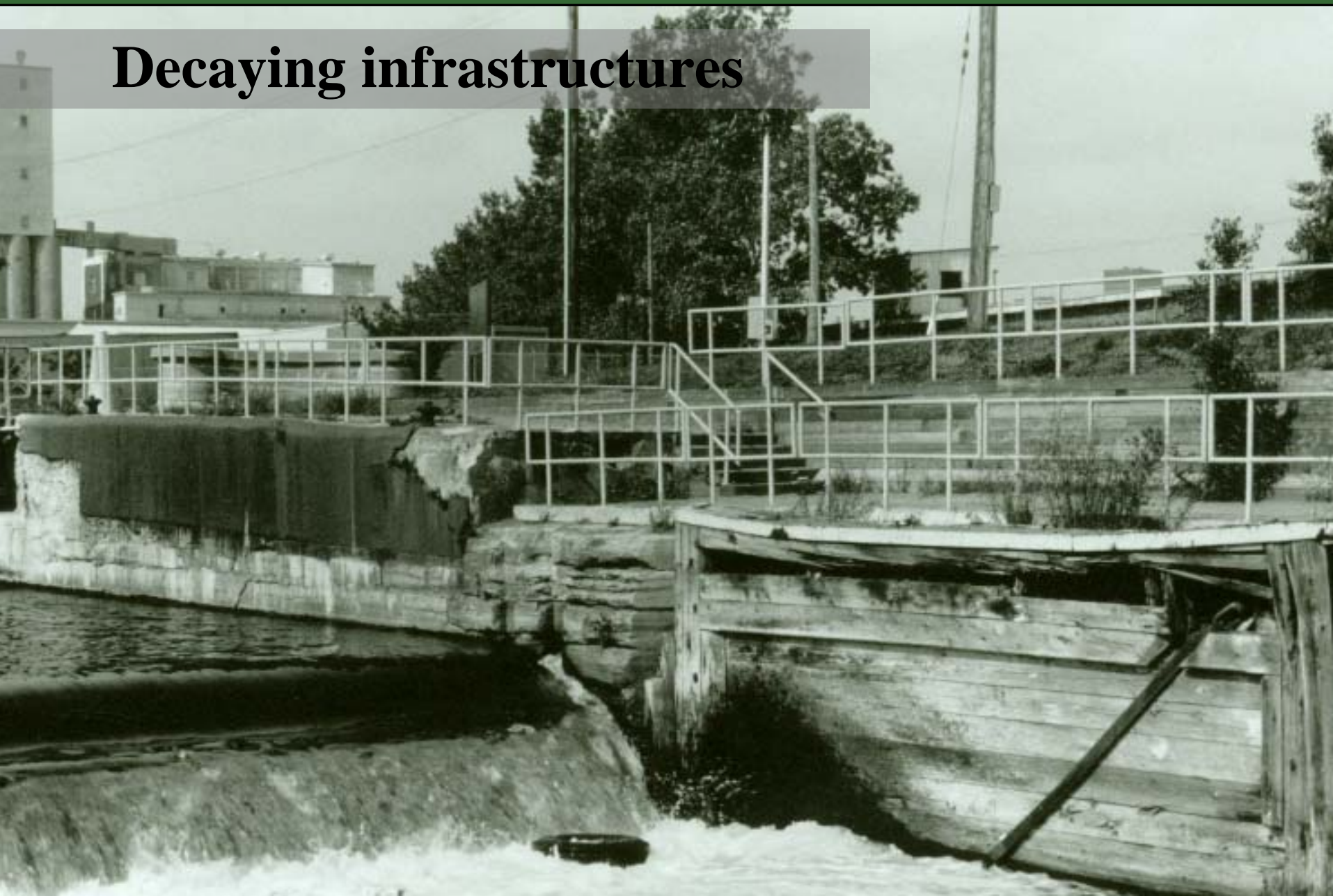
Closure in 1970



Industrial decline



Decaying infrastructures



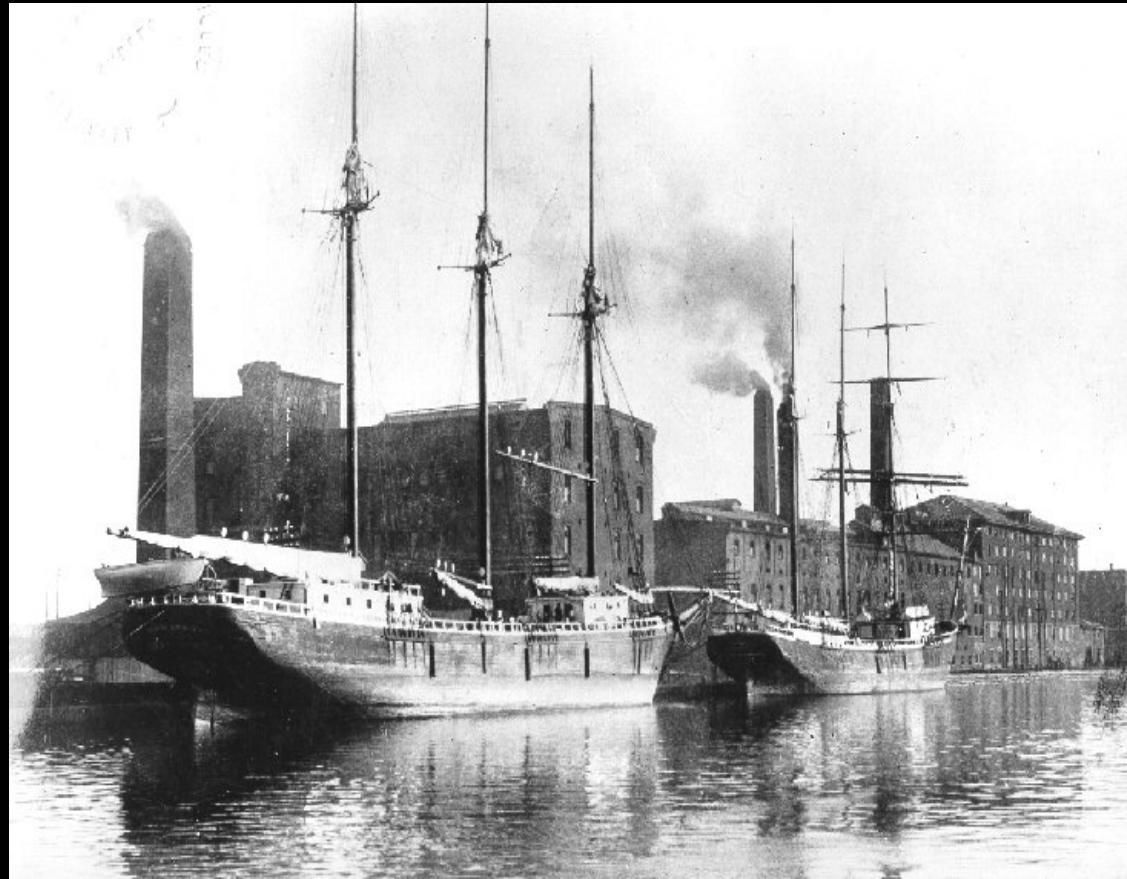
Environmental degradation

- Contaminated sites along the banks
- Over 120,000 m³ of contaminated sediments
- Heavy metals, PAHs, hydrocarbons



The Lachine Canal: milestones of a national historic site

- 1825** opening
- 1848** 1st expansion
- 1885** 2nd expansion
- 1929** declared to be of national historic significance
- 1970** closure
- 1978** transferred to Parks Canada Agency
- 2002** re-opened for recreational boating



Parks Canada's mandate

To commemorate, protect and present places which are significant examples of Canada's cultural and natural heritage in ways that encourage public understanding, appreciation and enjoyment of this heritage, while ensuring long-term ecological and commemorative integrity

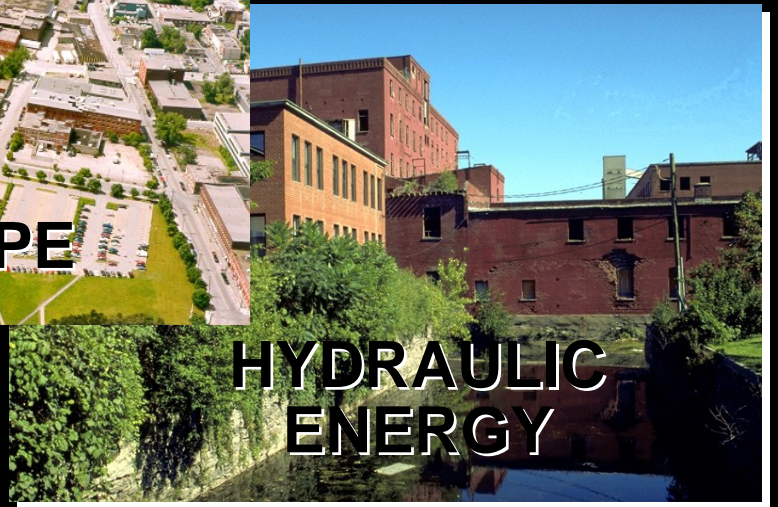
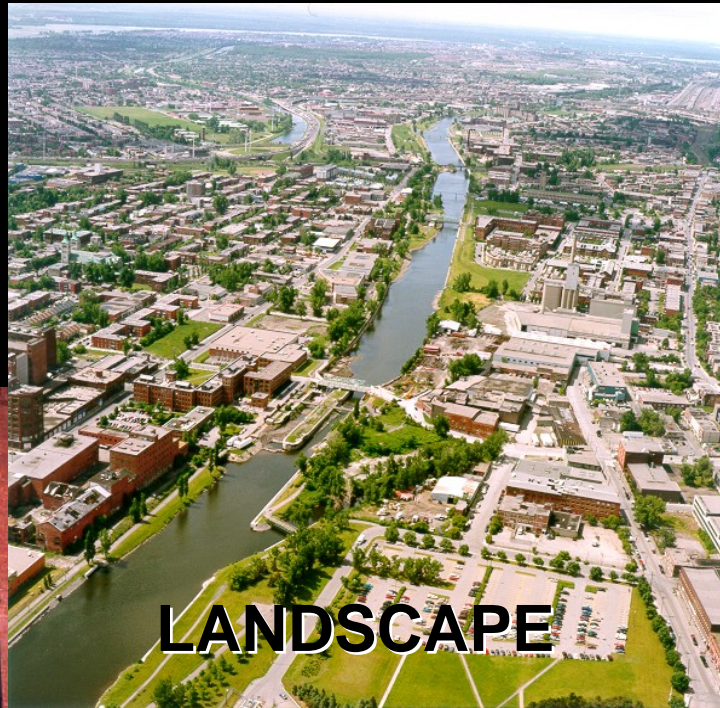


Project ultimate goal

- ***Preserving and commemorating the cultural and historical resources;***
- ***Make the Lachine Canal a driving force in regional economic development once again and a substantial improvement for the local population quality of life.***



Parks Canada commemorates resources that symbolize or define the national significance of this site



Project objectives

- **Preserve cultural/archaeological integrity**
- **Contribute to the economic and urban re-growth of Montreal South-West**
- **Bring out national heritage**
- **Re-open the canal for pleasure boating activities**
- **Complete the linear park landscaping and conveniences**
- **Clean-up contaminated sites**
- **Monitor and risk manage contaminated sediments**

Environmental issues

- **Scope of environmental assessment considers biophysical and cultural resources**
- **Main environmental issues: water quality, resuspension of contaminated sediments, preservation of commemorative integrity**
- **Joint Federal-Provincial Commission: decision not to proceed to decontamination of sediments**
- **Obligation to monitor and control impact of works and new activities, including boating**

Protection of the natural environment

- Remediation of Parks Canada contaminated sites along the canal banks based on land use
- Water quality control at the source
- Environmental assessment of development projects and activities
- Sediments and suspended matter: monitoring program and risk management (contingency plan)



The original Lachine Canal Decontamination Project was studied by a joint federal-provincial commission

Its recommendation was not to decontaminate, but to study and to assess the risk of redispersing sediments

Assessing the risk of sediment redispersion: on-site studies and tests with pleasure boats

Studying the contaminated sediments:
Definition of a reference level
Definition of criteria and critical values

Before re-opening to navigation

After re-opening to navigation

Environmental monitoring and control program

Pleasure boating on the Lachine Canal

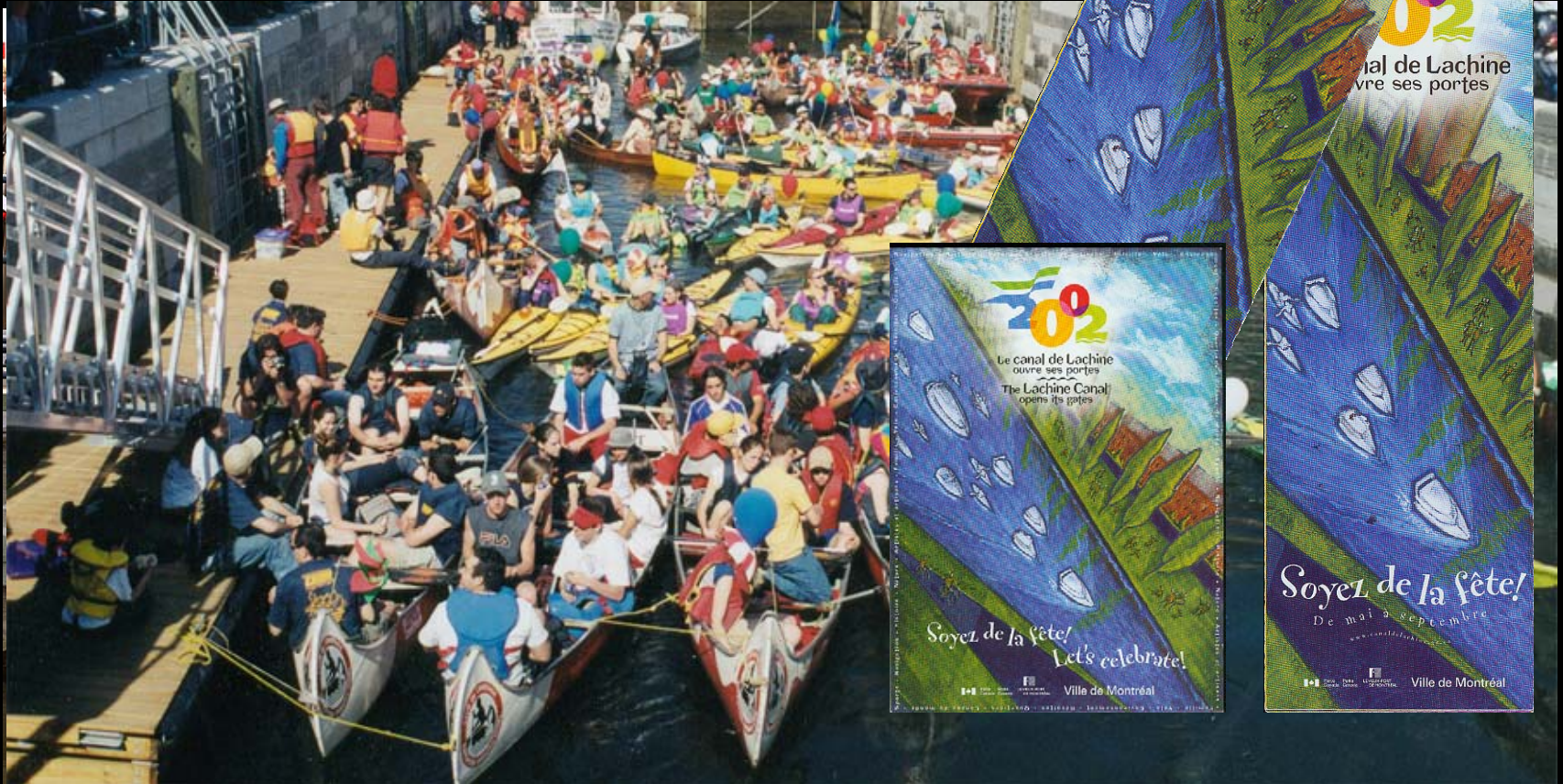
UNDER

CRITICAL VALUES

OVER

Implementation of corrective measures if critical values are exceeded
CONTINGENCY PLAN

Reopening in May 2002



Results of monitoring program

- Reference level established before opening
- 2002: 4624 boats
- 2003: 2169 boats
- 2004: 2340 boats
- No resuspension of sediments due to boating activities
- Increase in Cu, Pb, Zn, PAH
 - ➔ indicative of local contamination sources
- Correlation between turbidity and suspended matter



Recommendations

1. Turbidity tests represent a less costly, more efficient/rapid indicator
2. Semi-weekly monitoring (turbidity)
If threshold value exceeded, conduct point sampling SM
3. Increase number of sampling stations to locate Cu, Pb, Zn, PAH discharge points



Present and future challenges

- **Monitoring and remediation activities vs maintaining commemorative integrity, service level, visitor experience**
- **Pressures from promoters**
 - Remediation of reserved lands
 - Direct access to canal
- **Future development phases e.g. Montreal Harbourfront Vision 2025**
- **Long-term monitoring**
 - Water quality and sediments
 - Reassess situation if conditions change



IMPACTS OF THE NEW CANAL



An integrating urban corridor

- Links 4 boroughs (Lachine, LaSalle, South-West and Ville-Marie)
- Establishment of an integrating green, recreational and nautical corridor
- 1,000,000 visitors per yr
- A 100 M \$ revitalization project
- Positive impact on urban renewal
- Is part of the *Société du Havre de Montréal* Montreal Harbourfront Vision 2025



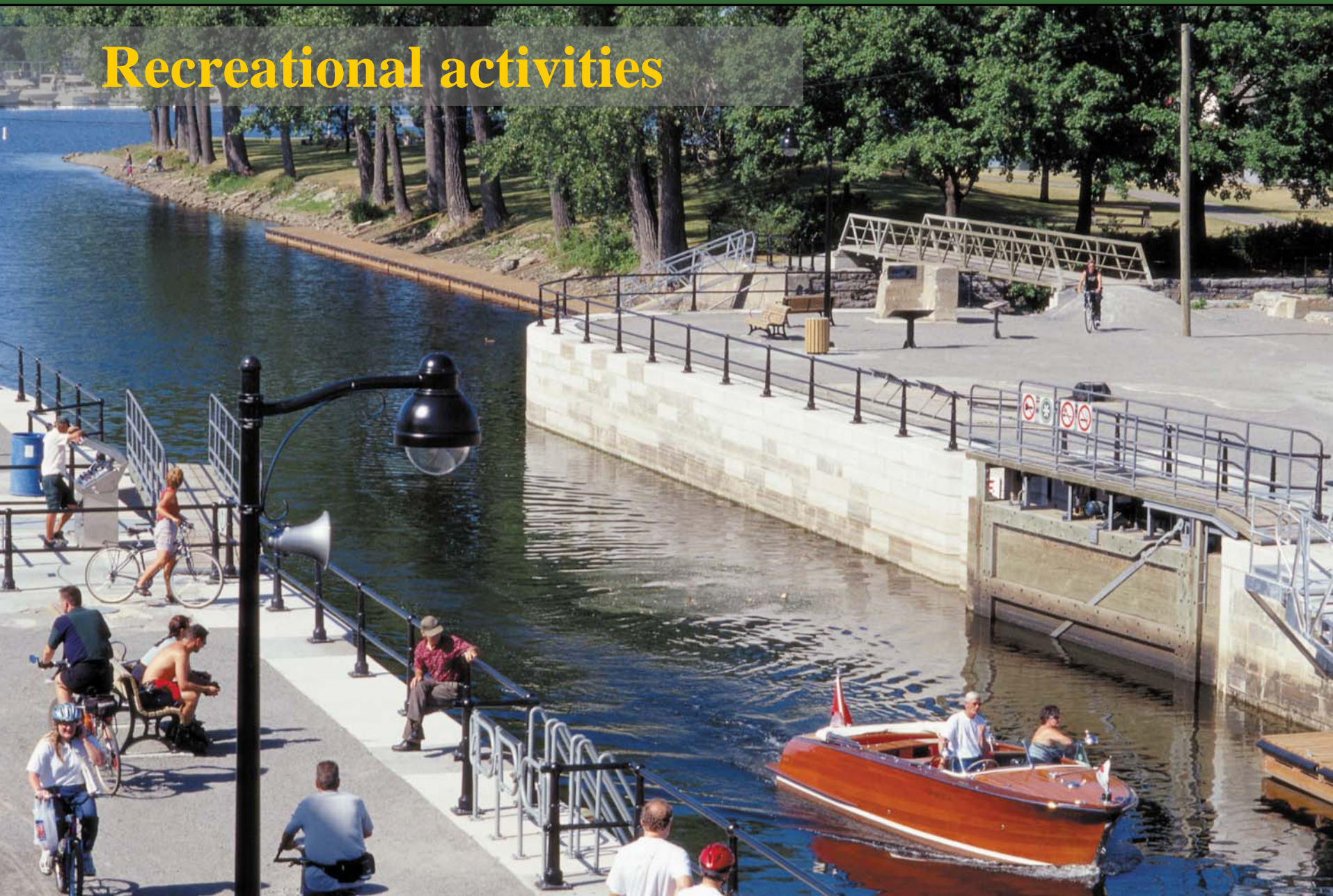
Residential development



Residential development



Recreational activities



Improved environmental conditions

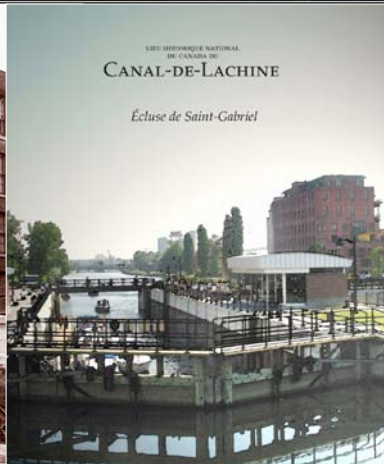


Improved environmental conditions



Improved environmental conditions





End

