Montréal, l'avenir du passé : Methodology Demo

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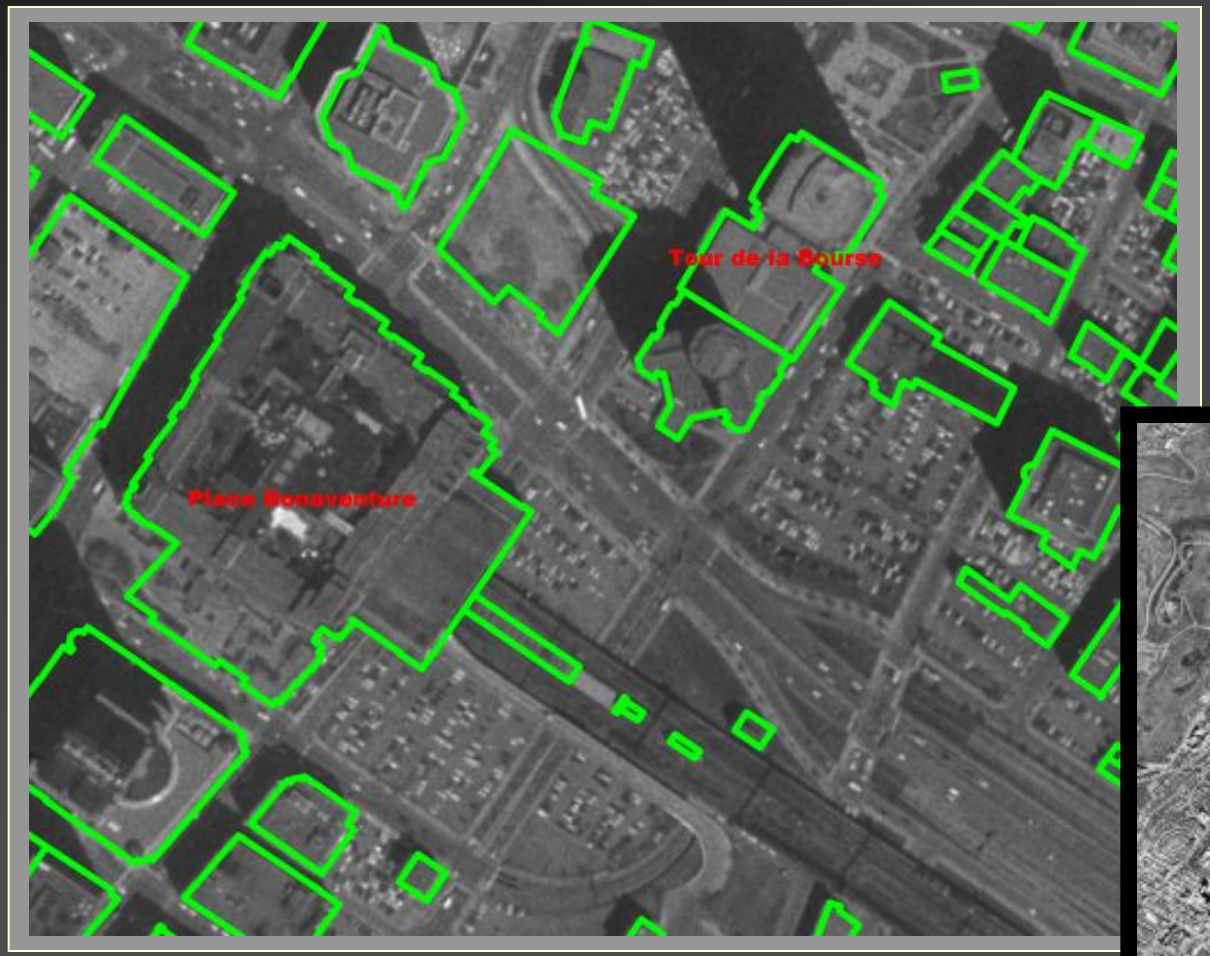
Challenges

1) To rectify historic maps of Montreal to a modern standard, with accuracy and efficiency

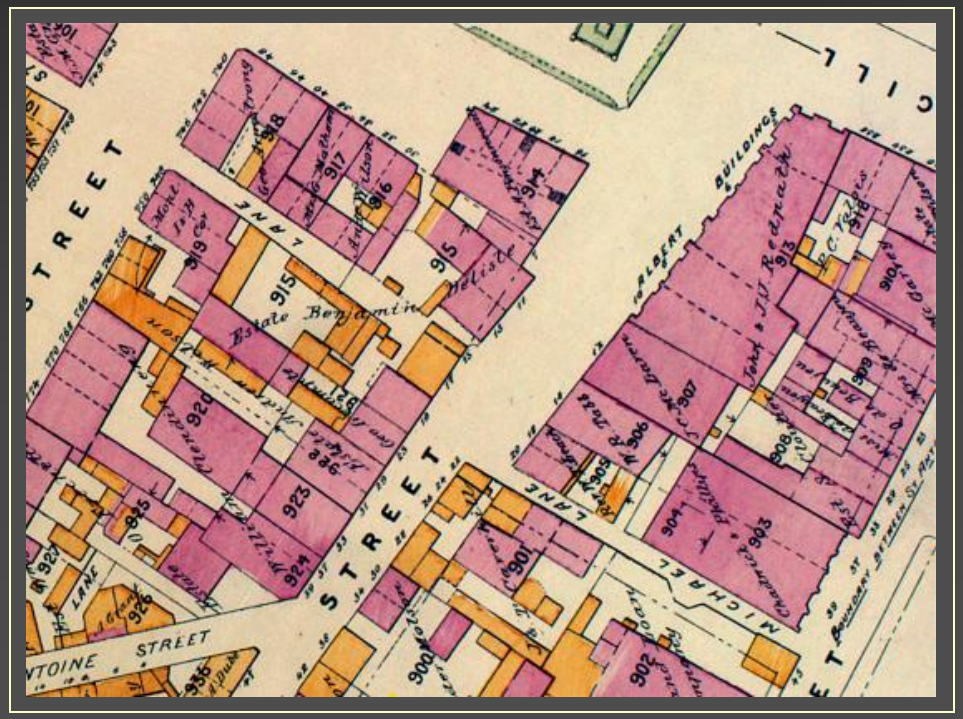
2) To establish method for vectorizing cadastral layers from the historic maps

Study Area : Downtown Montreal



Data and Maps

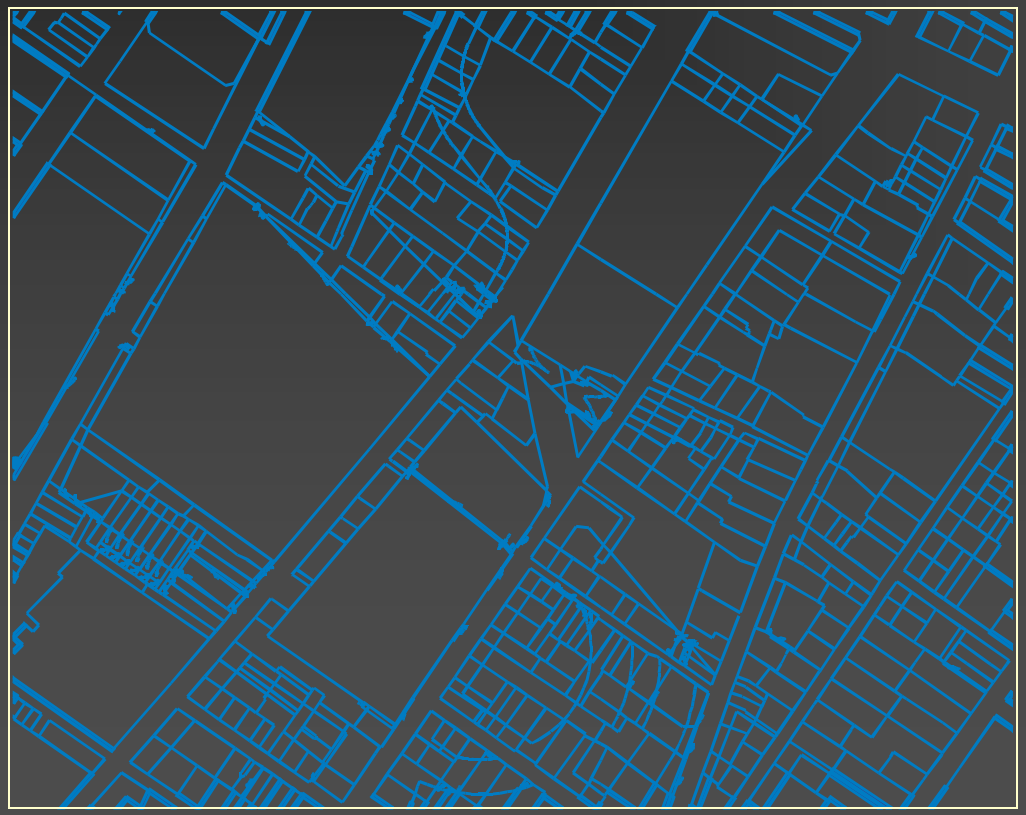
Montreal 1880



Montreal 2000

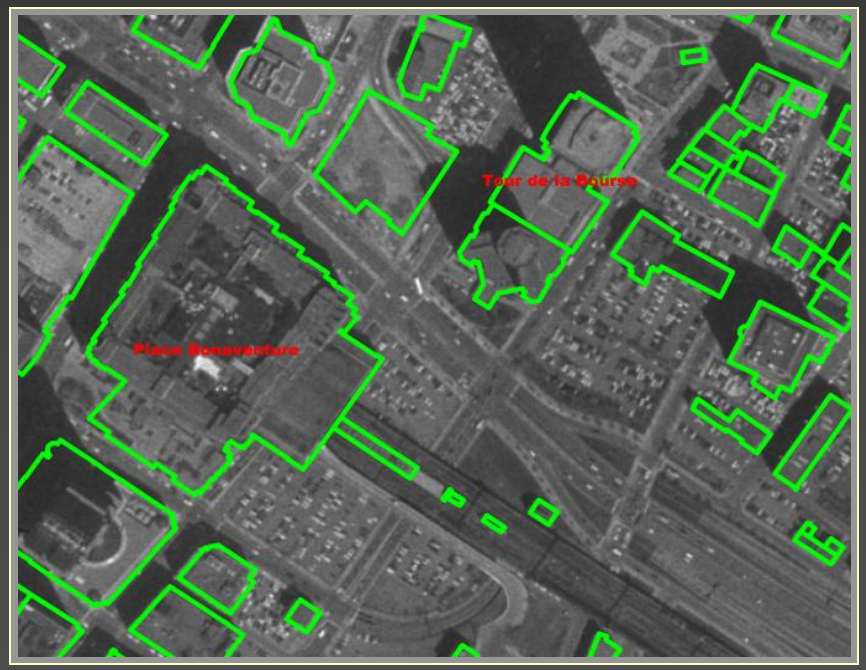
Data and Maps

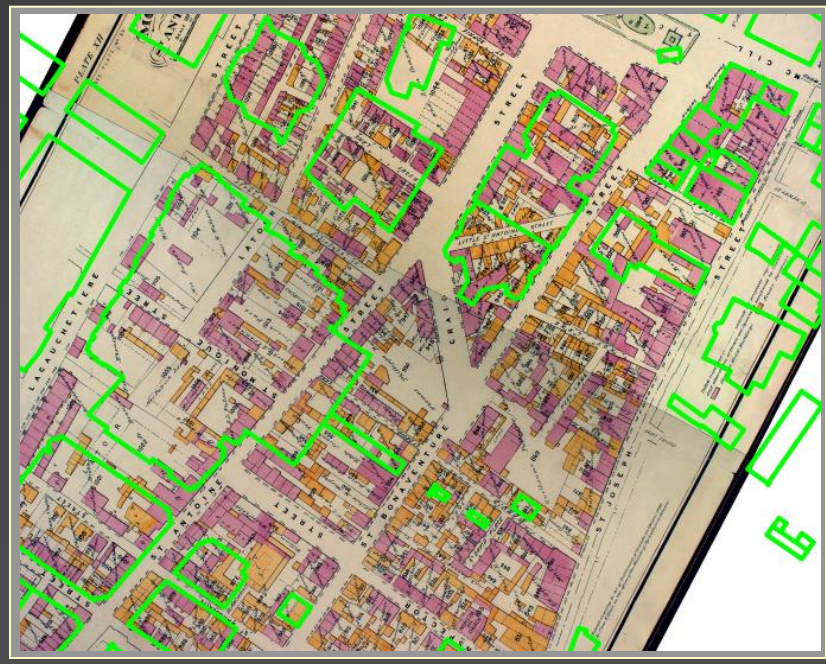
Cadastral Layer 2000

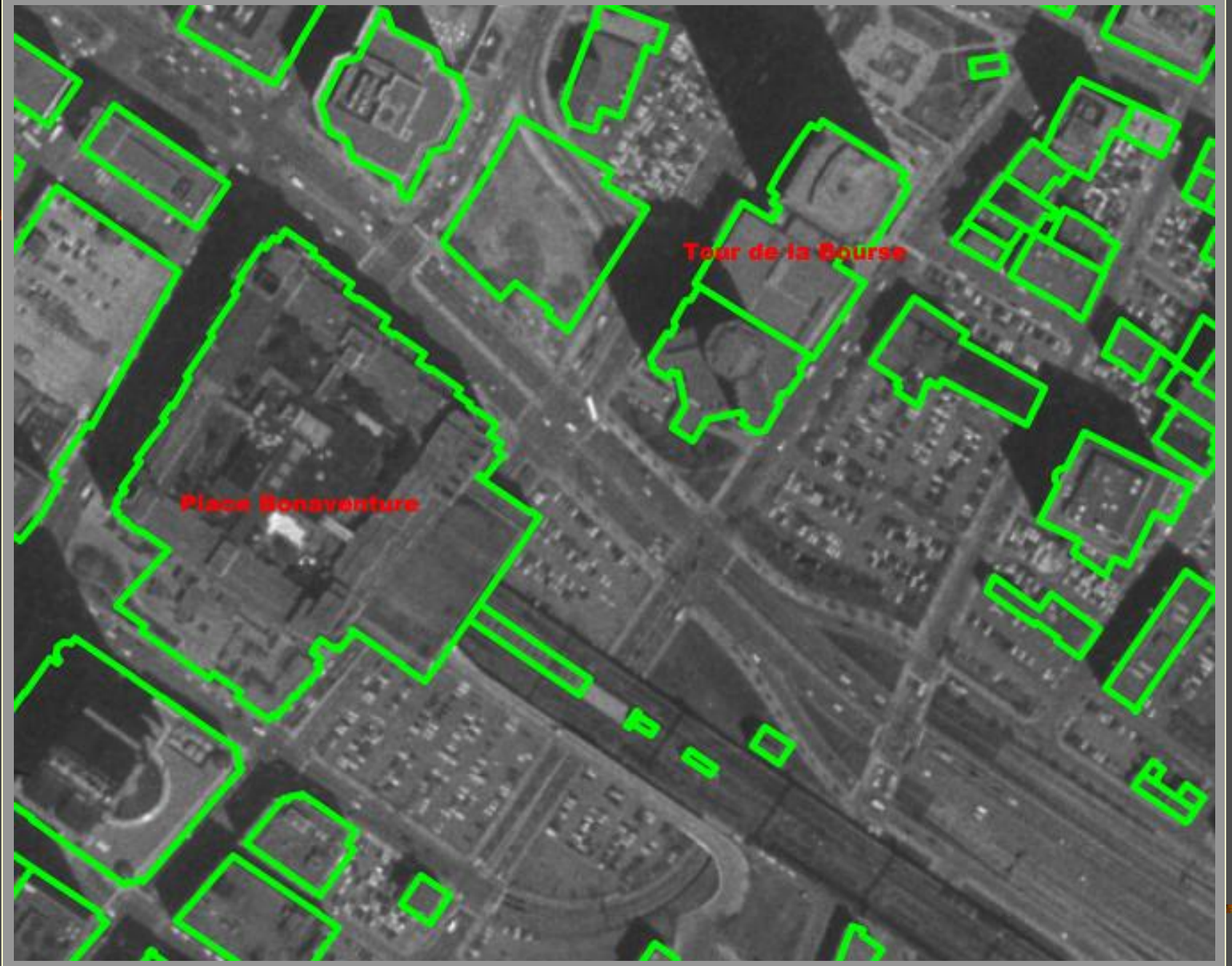


1. Rectification of Historic Maps
Example : Montreal 1880

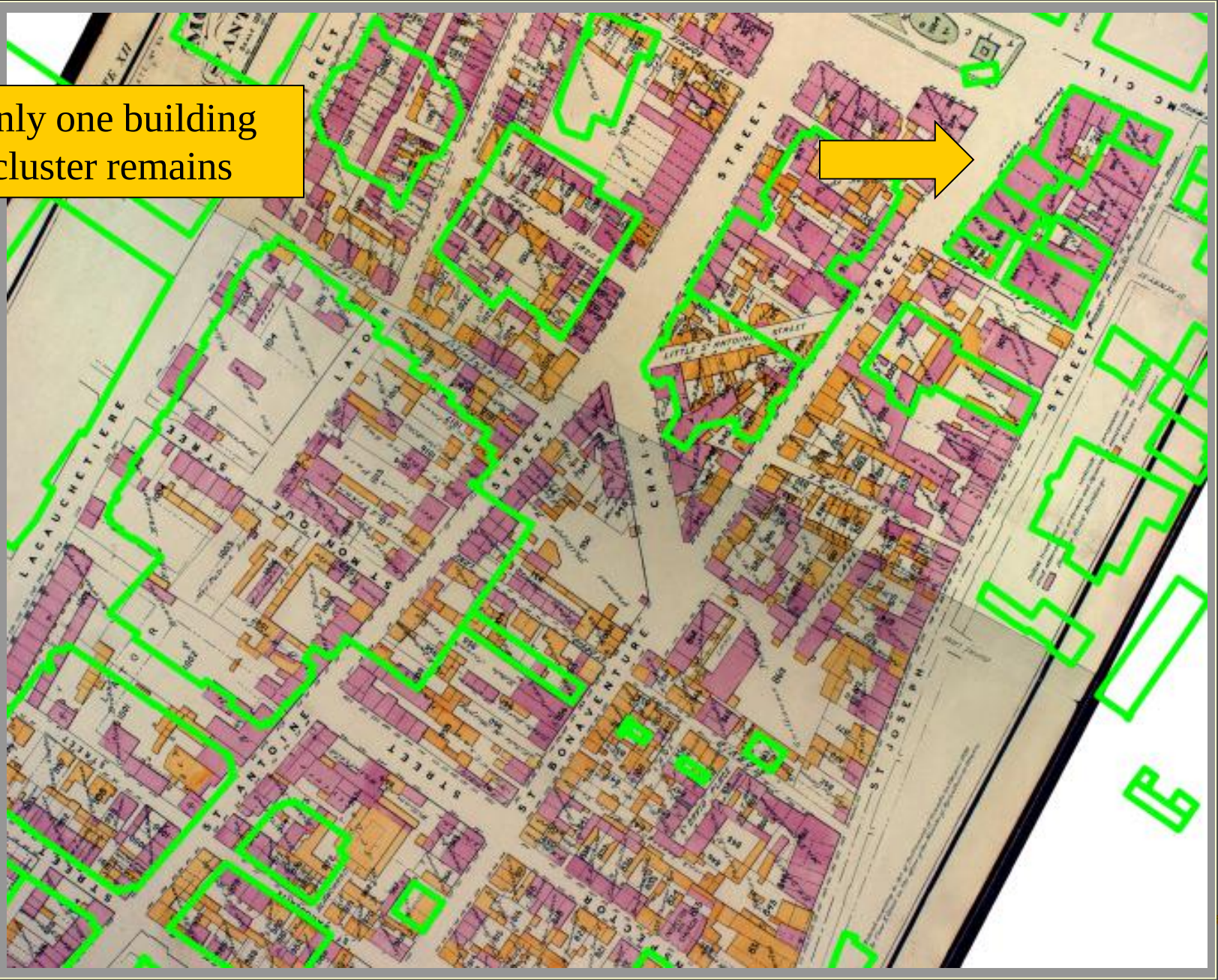
Problem: So few buildings of 1880 exist today, what will we use as control points?






Tour de la Bourse
Place Bonaventure

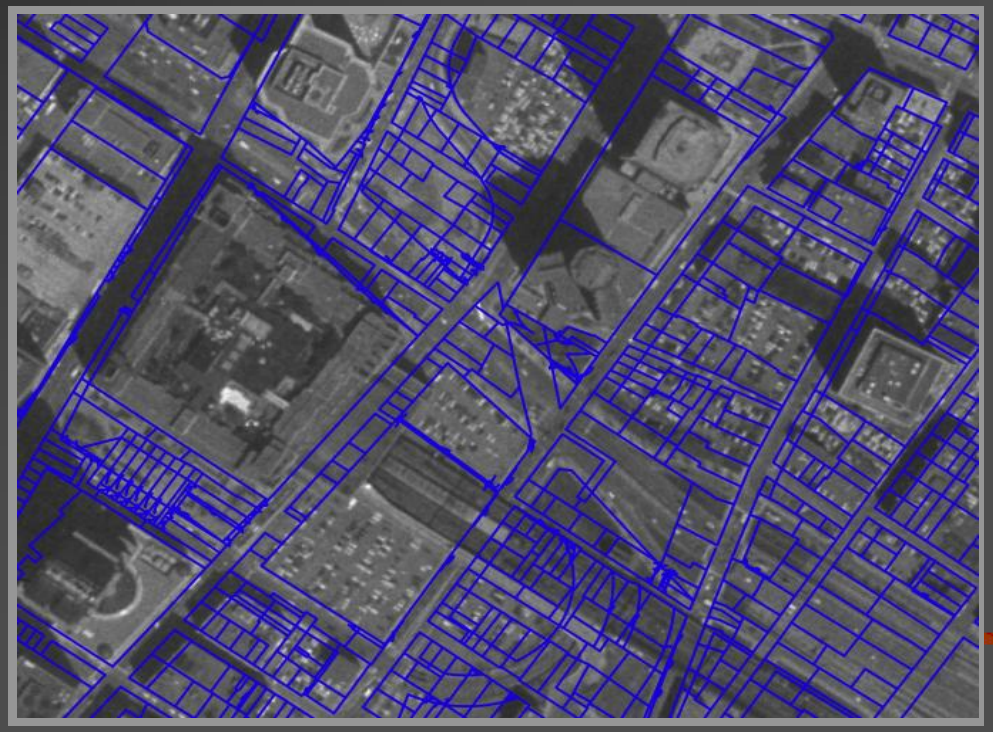
Only one building cluster remains

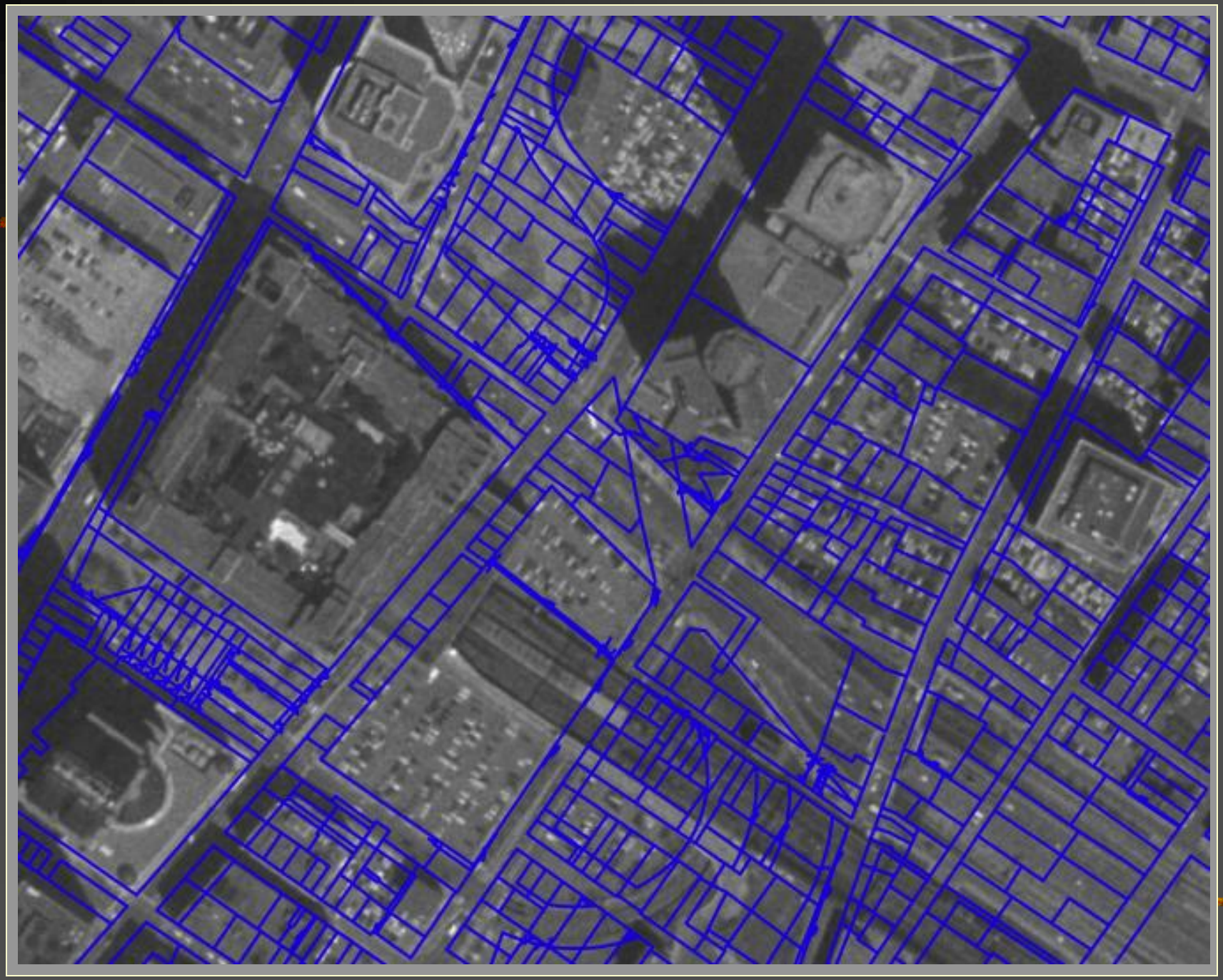


Rectification of Historic Maps

"The most persistent lines on the landscape are the imaginary ones"

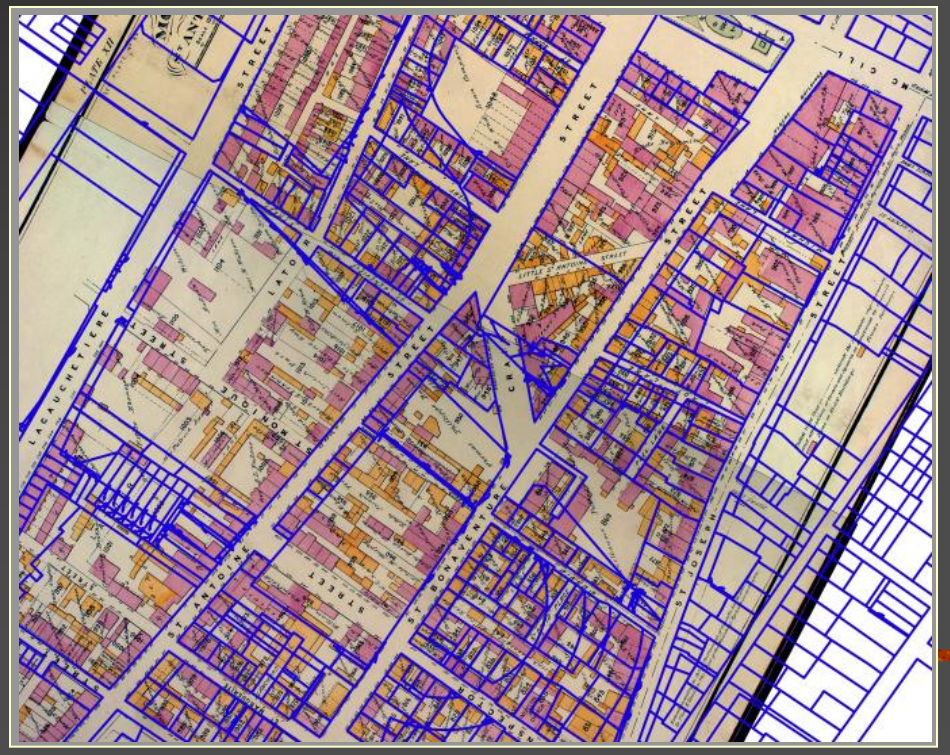
Modern cadastral layer superimposed on aerial photograph

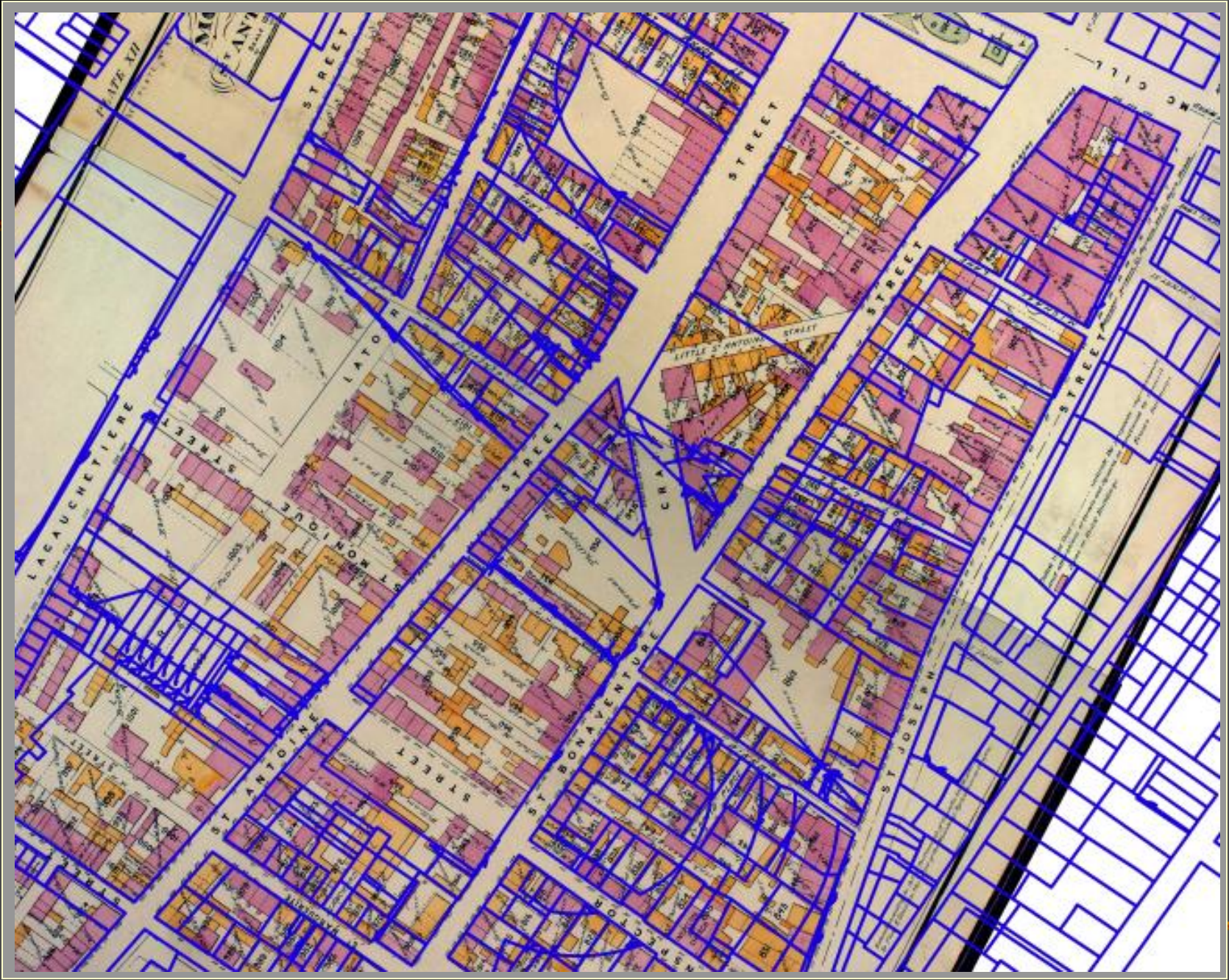




Rectification of Historic Maps

Solution: To use the 2000 cadastral layer to rectify the 1880 Goad Atlas maps




STREET
STREET
STREET
STREET
LACAUCHETIERE
ST ANTOINE
ST BONAVENTURE
ST JOSEPH
LITTLE ST ANTOINE STREET

2. Creation of the 1880 cadastral layer

Problem

- Today's cadastral layer is too complicated due to recent subdivisions and consolidations
- The Goad 1880 map is too complicated to autovectorize the lot boundaries

Creation of the 1880 cadastral layer

Solution:

- The Bibliothèque nationale du Québec provided the original cadastral surveys from the 1870s.

CRAIG
STREET
LITTLE ST ANTOINE ST
PELL LANE
LATOUR

Creation of the 1880 cadastral layer

Procedure

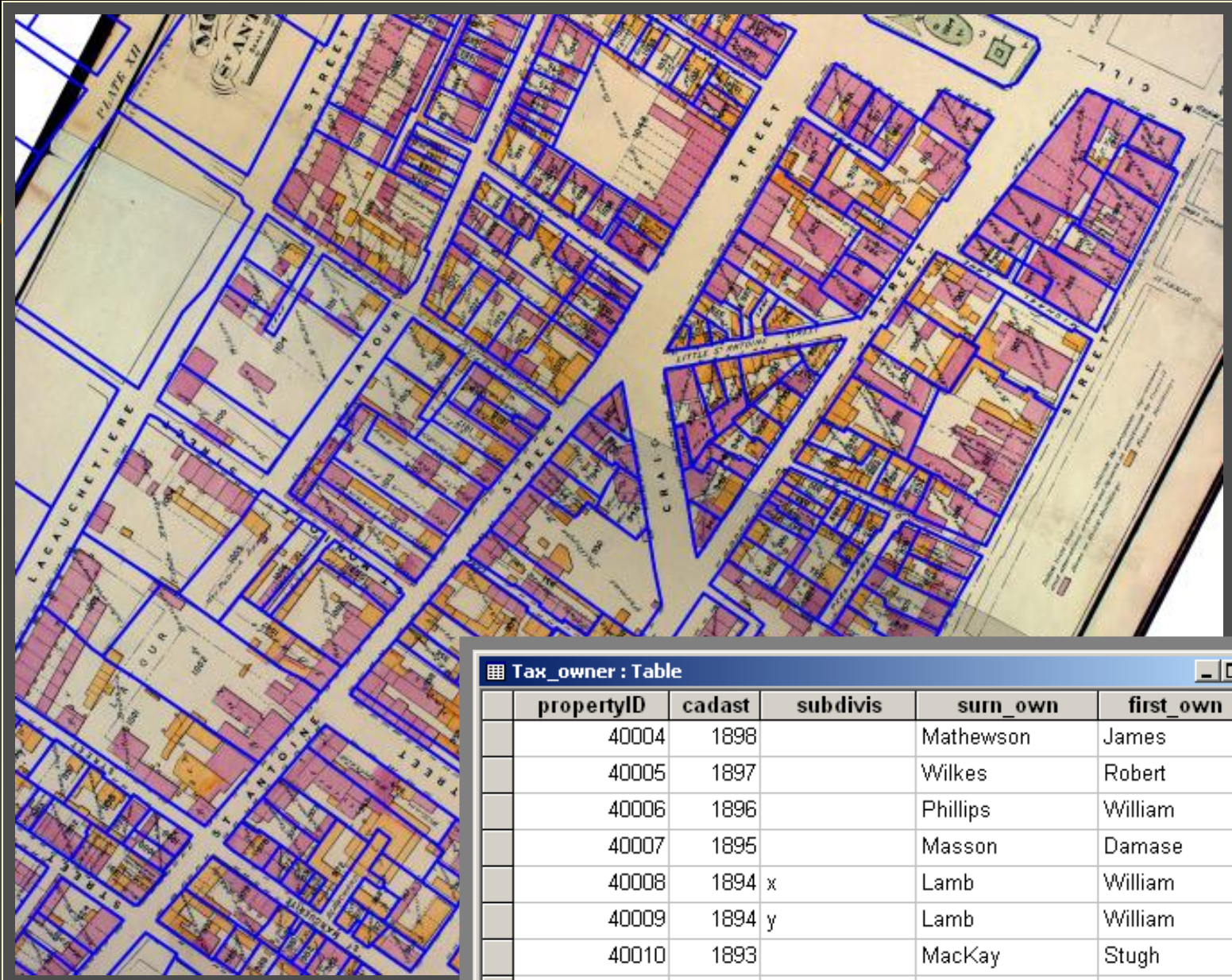
- The simplicity of the maps allows autovectorizaton using ArcInfo


CHETIERE
LATOUR
CRAIG
STREET
PEEL LANE
LITTLE ST ANTOINE ST
LANE
ST JOSEPH STREET
VICTORIA SQUARE

Creation of the 1880 cadastral layer

Procedure

- **The simplicity of the maps allows autovectorizaton to be performed using ArcInfo**
- Cadastral lines are cleaned and are “proofed” by consulting the Goad maps and the 1880 tax roll



Tax_owner : Table

propertyID	cadast	subdivis	surn_own	first_own
40004	1898		Mathewson	James
40005	1897		Wilkes	Robert
40006	1896		Phillips	William
40007	1895		Masson	Damase
40008	1894	x	Lamb	William
40009	1894	y	Lamb	William
40010	1893		MacKay	Stugh
40011	1892	x	Mills	M.C.

Record: 1 of 332

Creation of the 1880 cadastral layer

Procedure

- **The simplicity of the maps allows autovectorizaton to be performed using ArcInfo**
- **Cadastral lines are cleaned and the lots are "proofed" by consulting the Goad maps and the 1880 tax roll**
- Polygons are created from the arc layer to form the cadastral lots for 1880


CRAIG STREET
LITTLE ST ANTOINE ST
PELL LANE
LATOUR
LANE

Conclusion

Lot lines have been used to solve two important problems :

- Rectify images of historic maps
- Recreate the 19th-century cadastre as a vector layer

Now what?

The new layers can be integrated with the image

- cadastral line
- buildings

Acknowledgements

GEOIDE

MAP Project Members

&

City of Montreal

Bibliothèque Nationale du Québec