

# Historical problem: position Toronto's original waterfront and uncover a lost river

Presentation and resources:

<http://maps.library.utoronto.ca/hgis/hgis.html>

[Marcel.Fortin@utoronto.ca](mailto:Marcel.Fortin@utoronto.ca)



UNIVERSITY OF TORONTO  
MAP & DATA LIBRARY

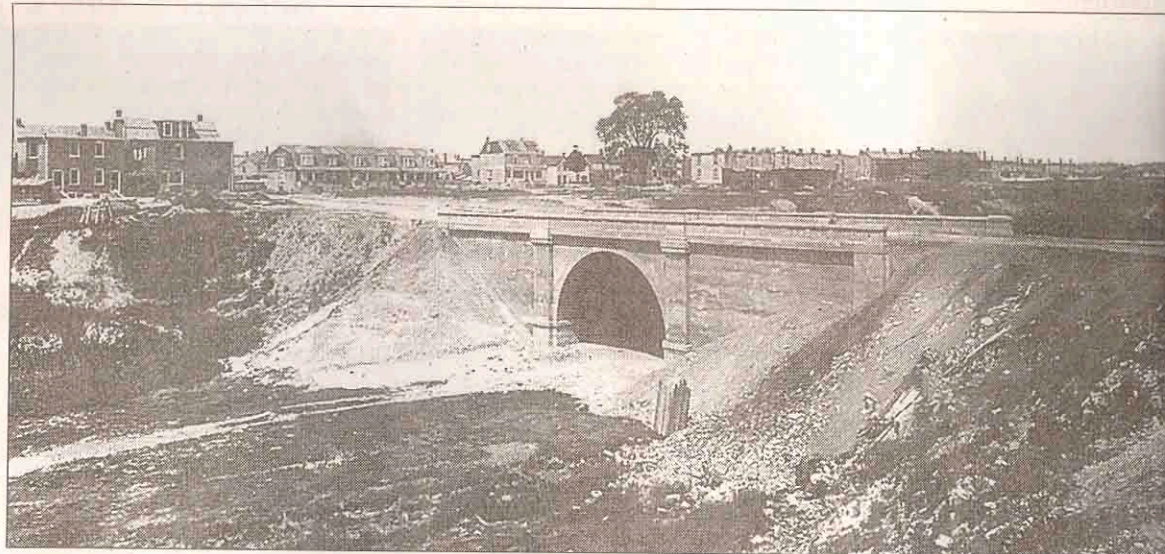


# What bubbles beneath our

Downtown activists are eager to uncover Toronto's buried rivers, **STEPHEN WICKENS** writes

**B**arring a flood of near-biblical proportions, no one will ever again paddle from Fort York to Christie Pits. And the fishing won't be good any century soon at the Grace Street dip, where London Stream might still empty into Garrison Creek, south of Bloor Street and 10 or so metres underground.

But in certain circles, there's serious talk of "guerrilla archeology"



COURTESY TRINITY COLLEGE ARCHIVE

**The Harbord Street Bridge, seen in this photo circa 1915, could be the target of some guerrilla archeology.**



ARCHAEOLOGY

## Excavation near Fort York unearths locomotive history

RICHARD BLACKWELL

From Saturday's Globe and Mail

Published Friday, Jun. 03, 2011 7:13PM EDT

Last updated Friday, Jun. 03, 2011 7:19PM EDT

11 comments



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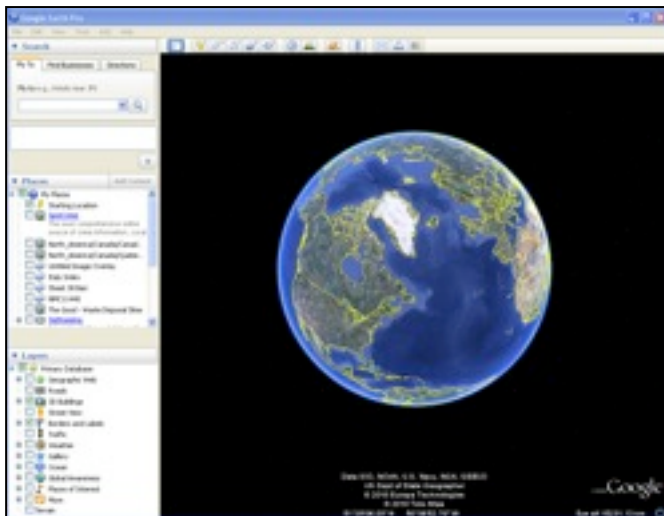
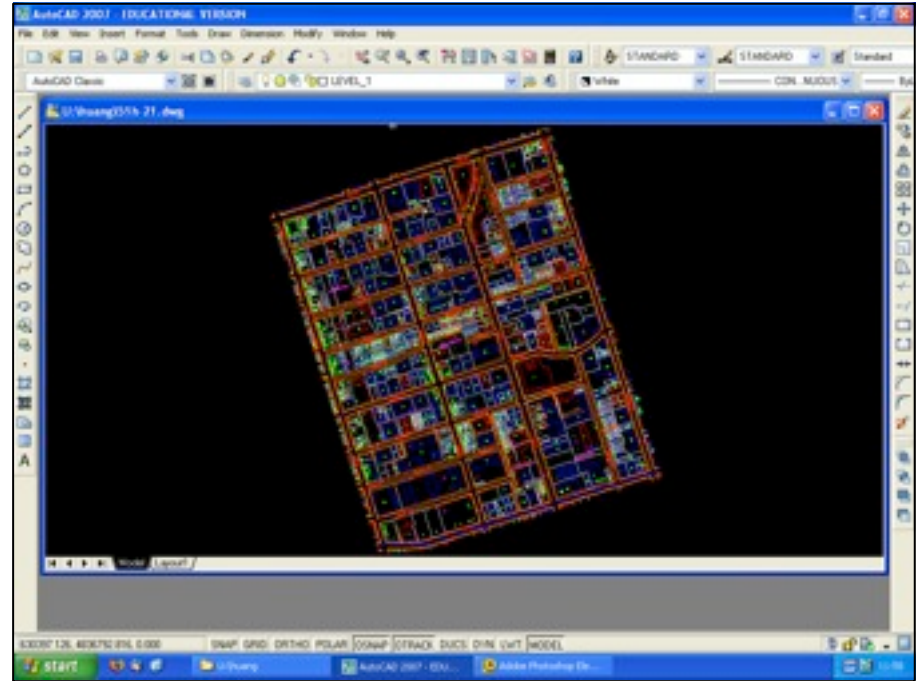
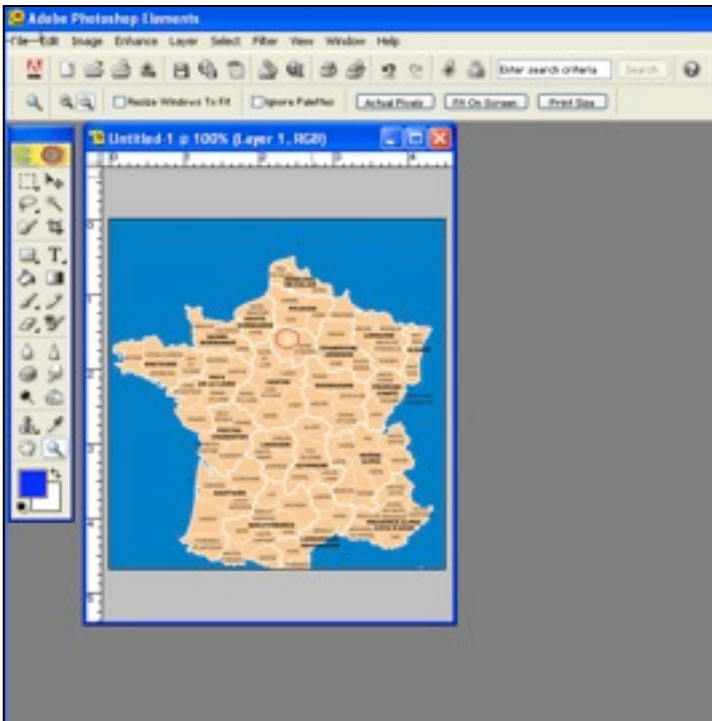
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Looking east from the Bathurst Street bridge just south of Front, a mighty wall of new towers looms over the landscape. But just over the edge of the bridge, adjacent to the latest building under construction, is an incongruous site: A vast archaeological dig that has uncovered 150-year-old remains of the Toronto waterfront's once-booming industrial age.

Here, a stone's throw from Fort York, a huge cruciform-shaped building was constructed in 1855 and 1856 to service and repair engines of the Grand Trunk Railway. Only the northeast portion of the foundations survive, but inside the engine house's footprint are the remains of brick ovens where wrought-iron locomotive parts were forged, and a vaulted chamber whose use is still a mystery.

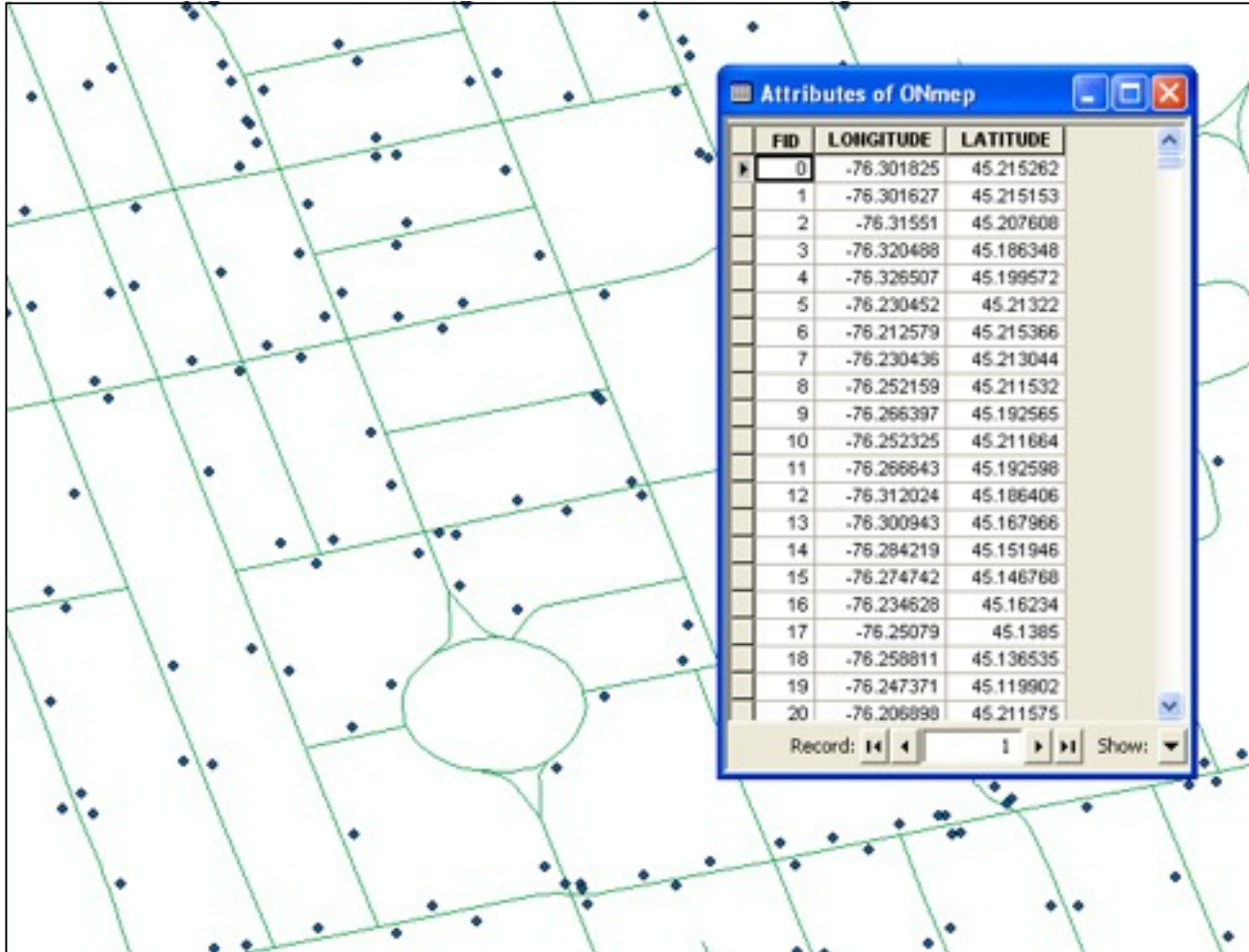
Outside the stone foundation walls, the bases of wooden privies – still rank from use more than a century ago by railway workers – are intact. And portions of Queen's Wharf, a massive wooden dock that for decades jutted far out into Lake Ontario, have also been unearthed.

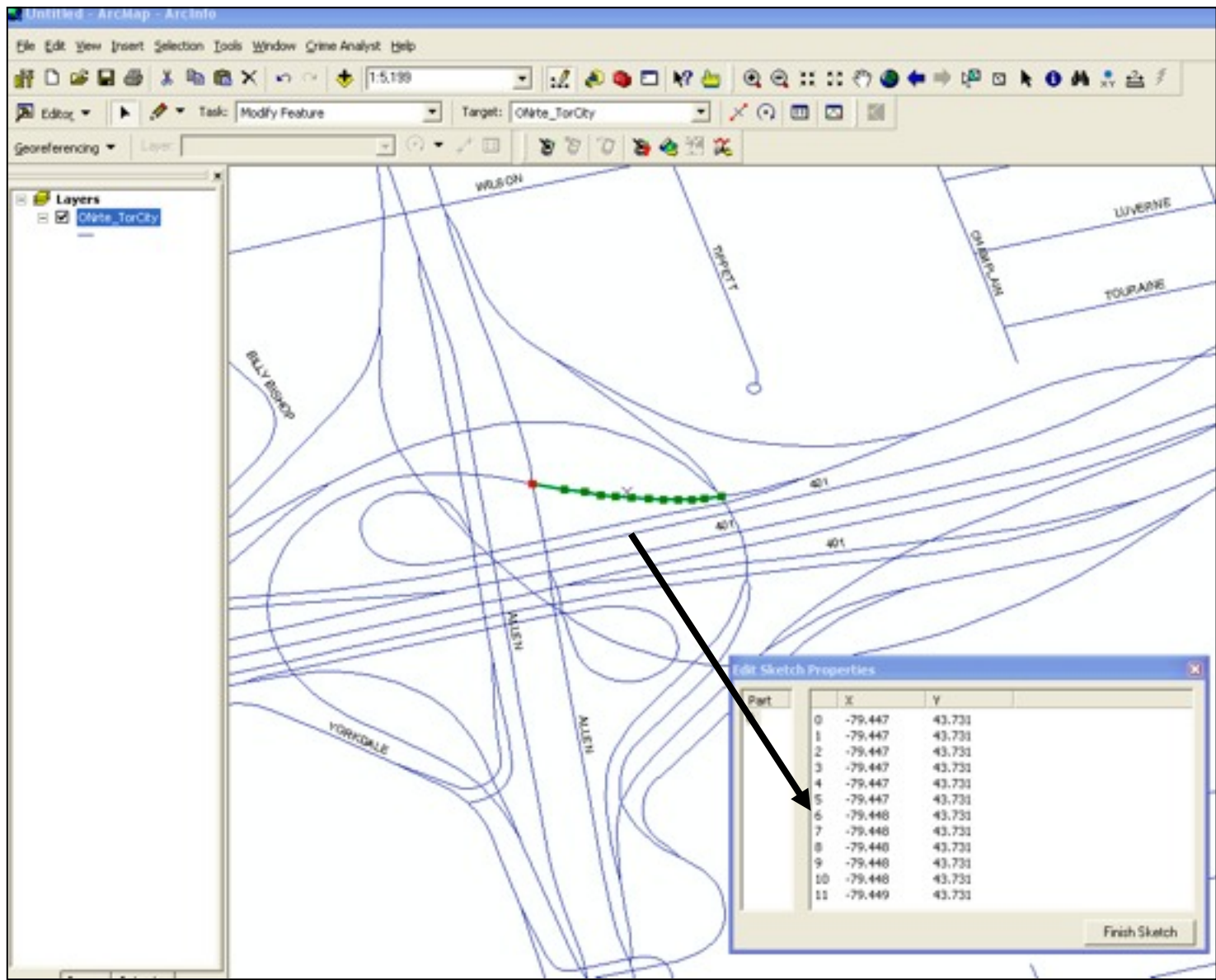


Software Literacy

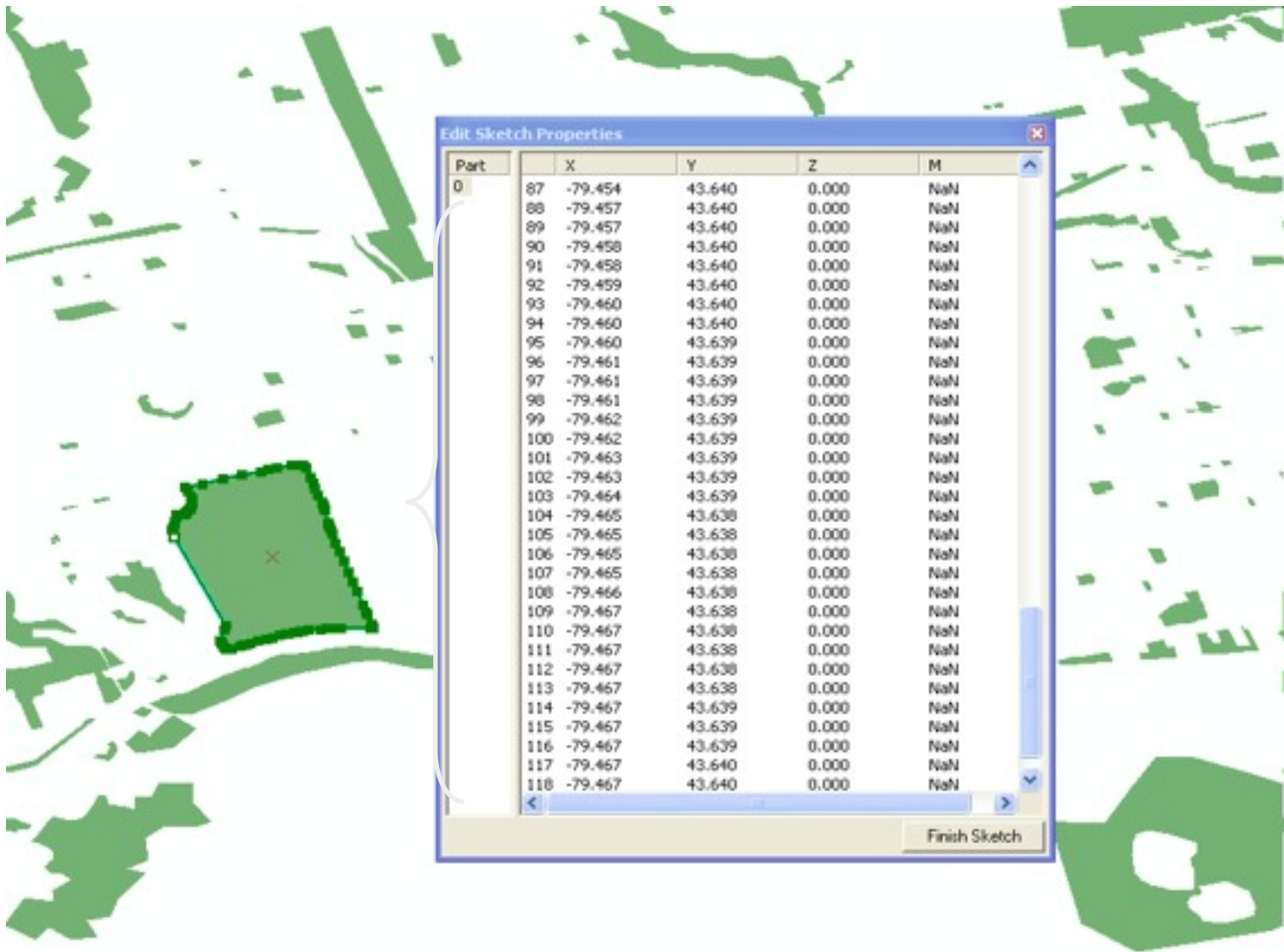
Choosing the right software for the right tool



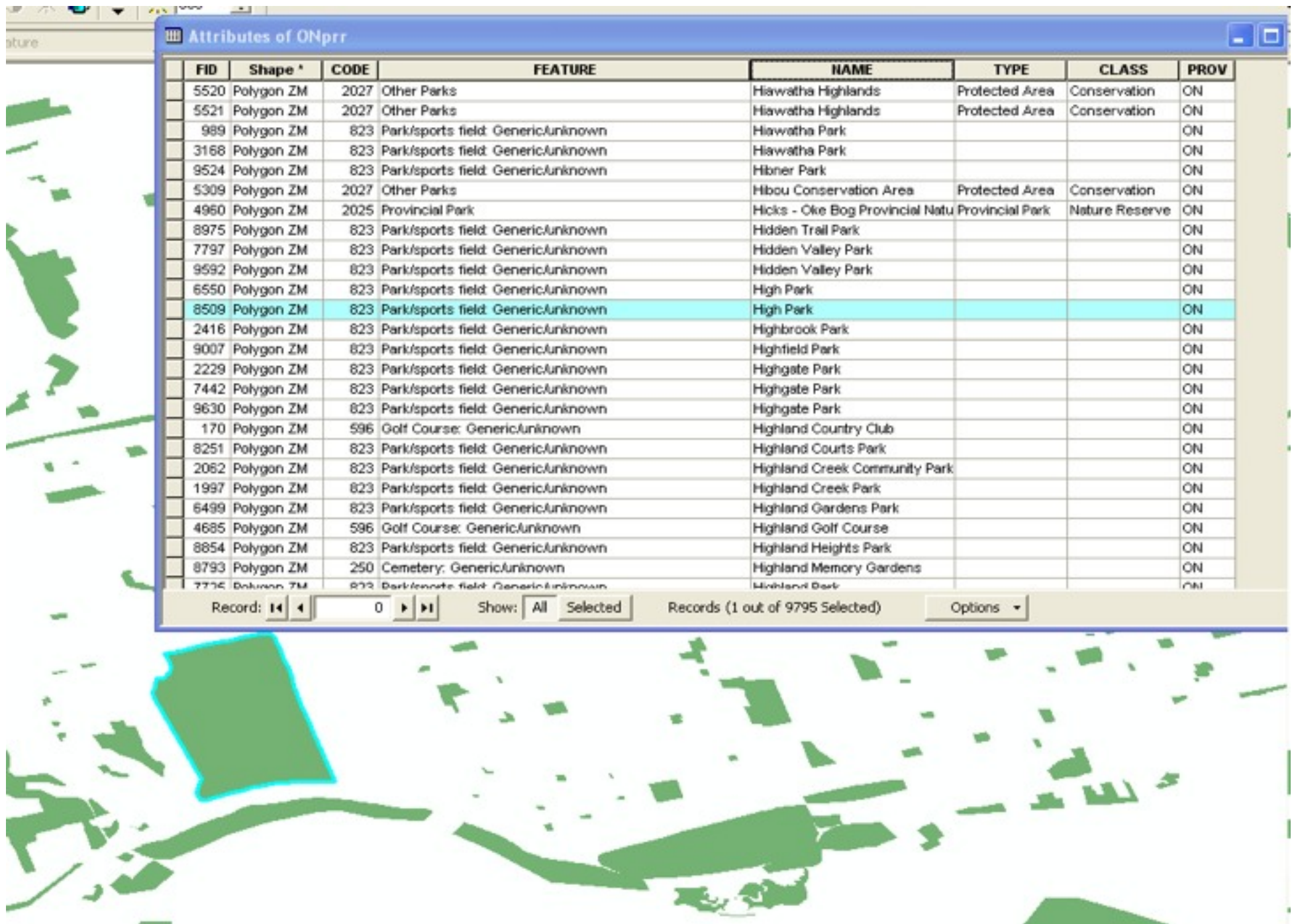








What is GIS? - Feature  
Polygons



What is GIS? - Attribute Data

Attributes of parks

FID	Shape *	CODE	FEATURE	NAME	TYPE	CLASS	PROV	area
64	Polygon ZM	823	Park/sports field: Generic/unknown				ON	16186
65	Polygon ZM	823	Park/sports field: Generic/unknown				ON	64362
66	Polygon ZM	823	Park/sports field: Generic/unknown				ON	42588
67	Polygon ZM	823	Park/sports field: Generic/unknown				ON	6474
68	Polygon ZM	823	Park/sports field: Generic/unknown				ON	13199
69	Polygon ZM	250	Cemetery: Generic/unknown	Mount Pleasant Cemetery			ON	840661
70	Polygon ZM	250	Cemetery: Generic/unknown	Prospect Cemetery			ON	440223
71	Polygon ZM	250	Cemetery: Generic/unknown	St. James Cemetery			ON	125135
72	Polygon ZM	250	Cemetery: Generic/unknown	Roselawn Cemetery			ON	34940
73	Polygon ZM	250	Cemetery: Generic/unknown				ON	10748
74	Polygon ZM	823	Park/sports field: Generic/unknown	High Park			ON	161291
75	Polygon ZM	823	Park/sports field: Generic/unknown	David A. Balfour Park			ON	374545
76	Polygon ZM	823	Park/sports field: Generic/unknown	Cedarvale Park			ON	325252
77	Polygon ZM	823	Park/sports field: Generic/unknown	Humber Bay Park West			ON	533229
78	Polygon ZM	823	Park/sports field: Generic/unknown	South Humber Park			ON	273344
79	Polygon ZM	823	Park/sports field: Generic/unknown	Trinity Bellwoods Park			ON	156561
80	Polygon ZM	823	Park/sports field: Generic/unknown	Amesbury Park			ON	134730
81	Polygon ZM	823	Park/sports field: Generic/unknown	Coronation Park			ON	198200
82	Polygon ZM	823	Park/sports field: Generic/unknown	Keeleisdale Park			ON	146691
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Record: 0 Show: All Selected Records (1 out of 250 Selected) Options



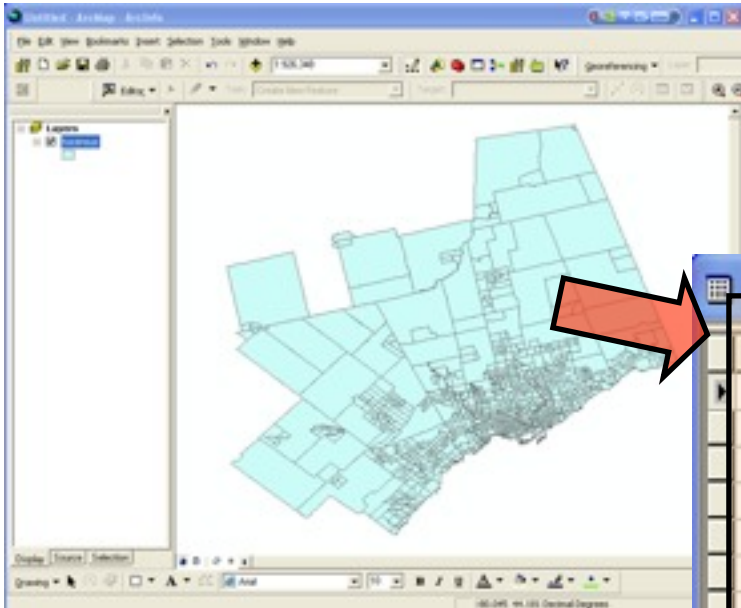
Allows for analysis



What is GIS? - Analysis (Symbolize by land area)



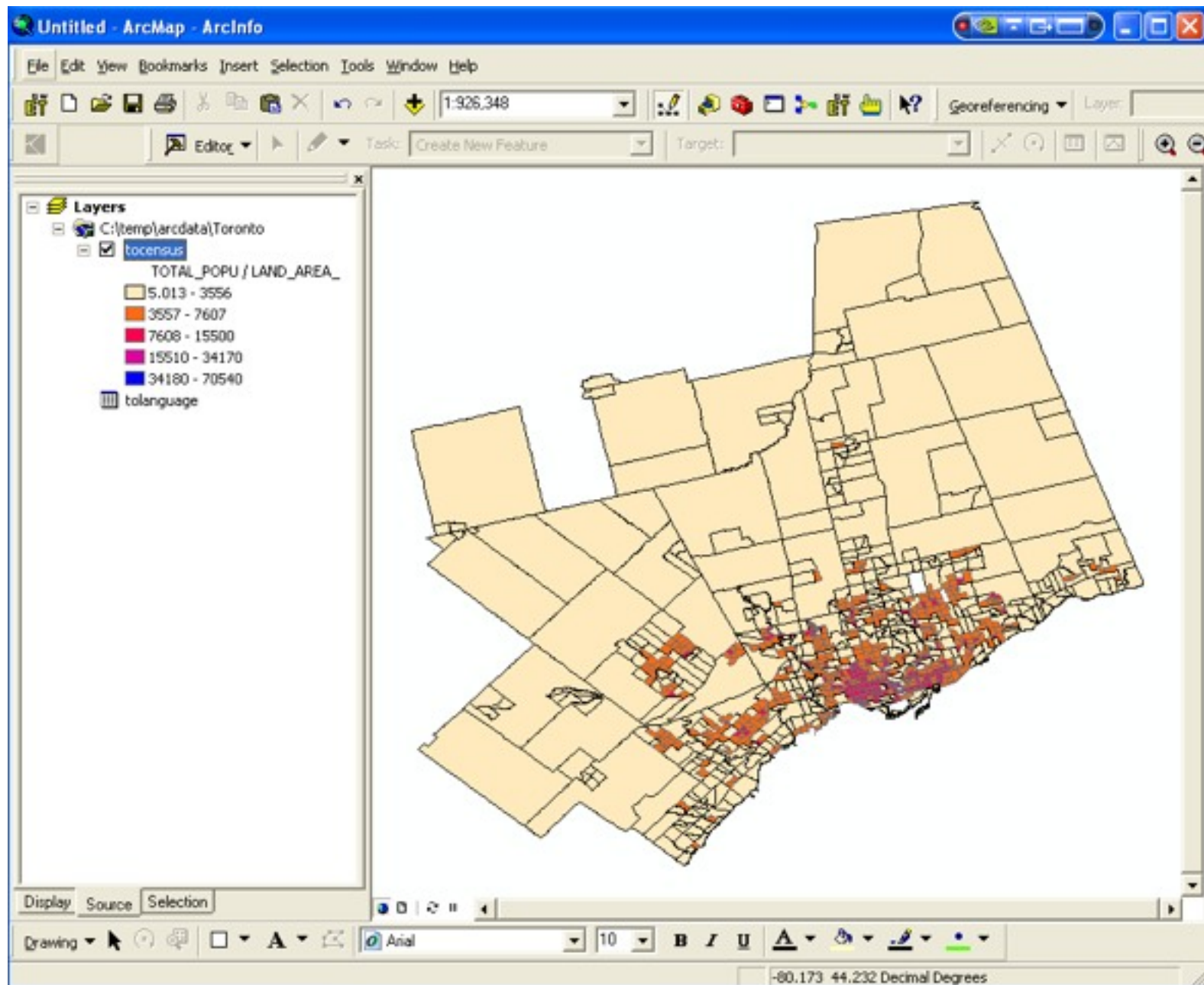
What is GIS? Cartographic Display of Results

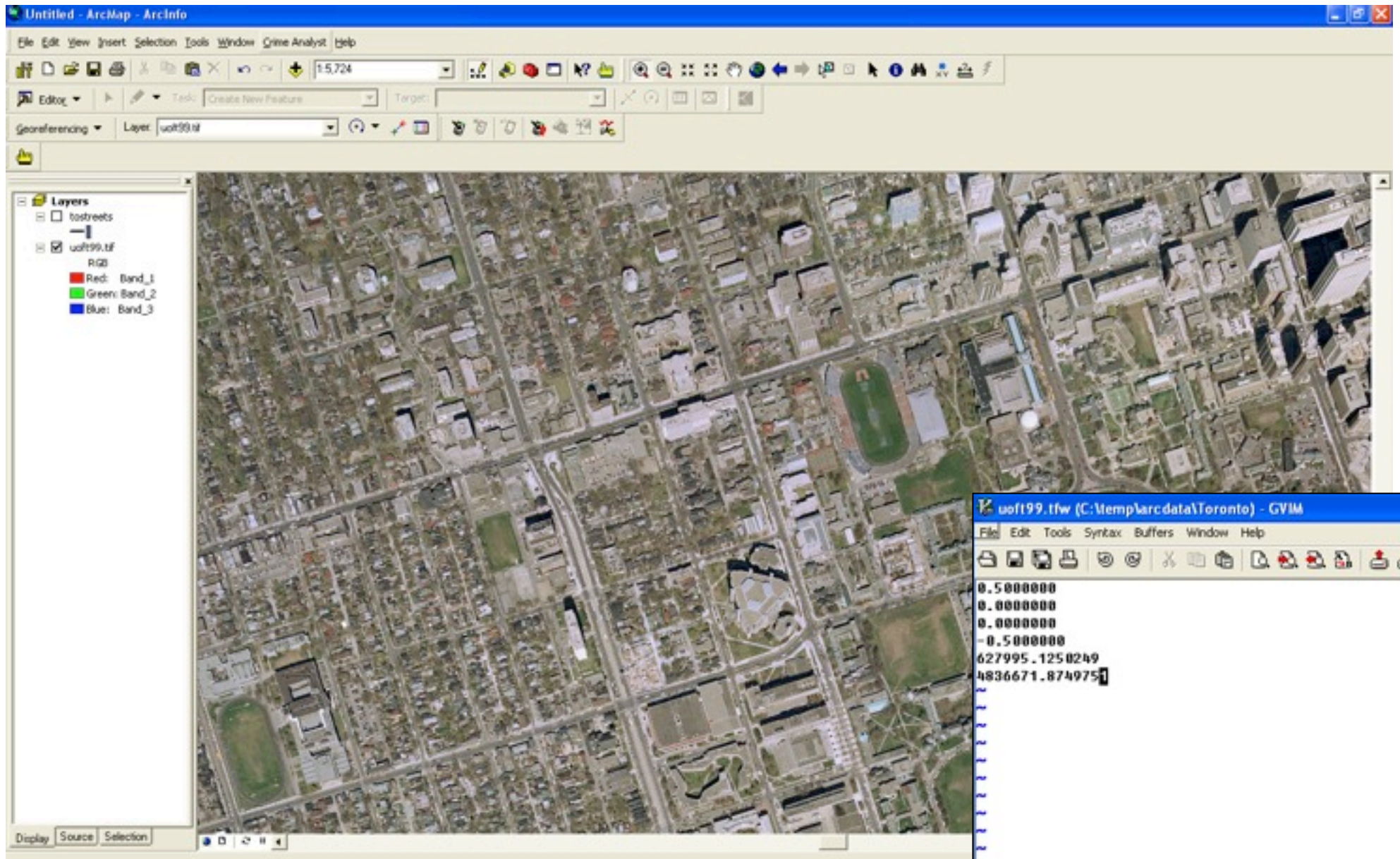


Attributes of census

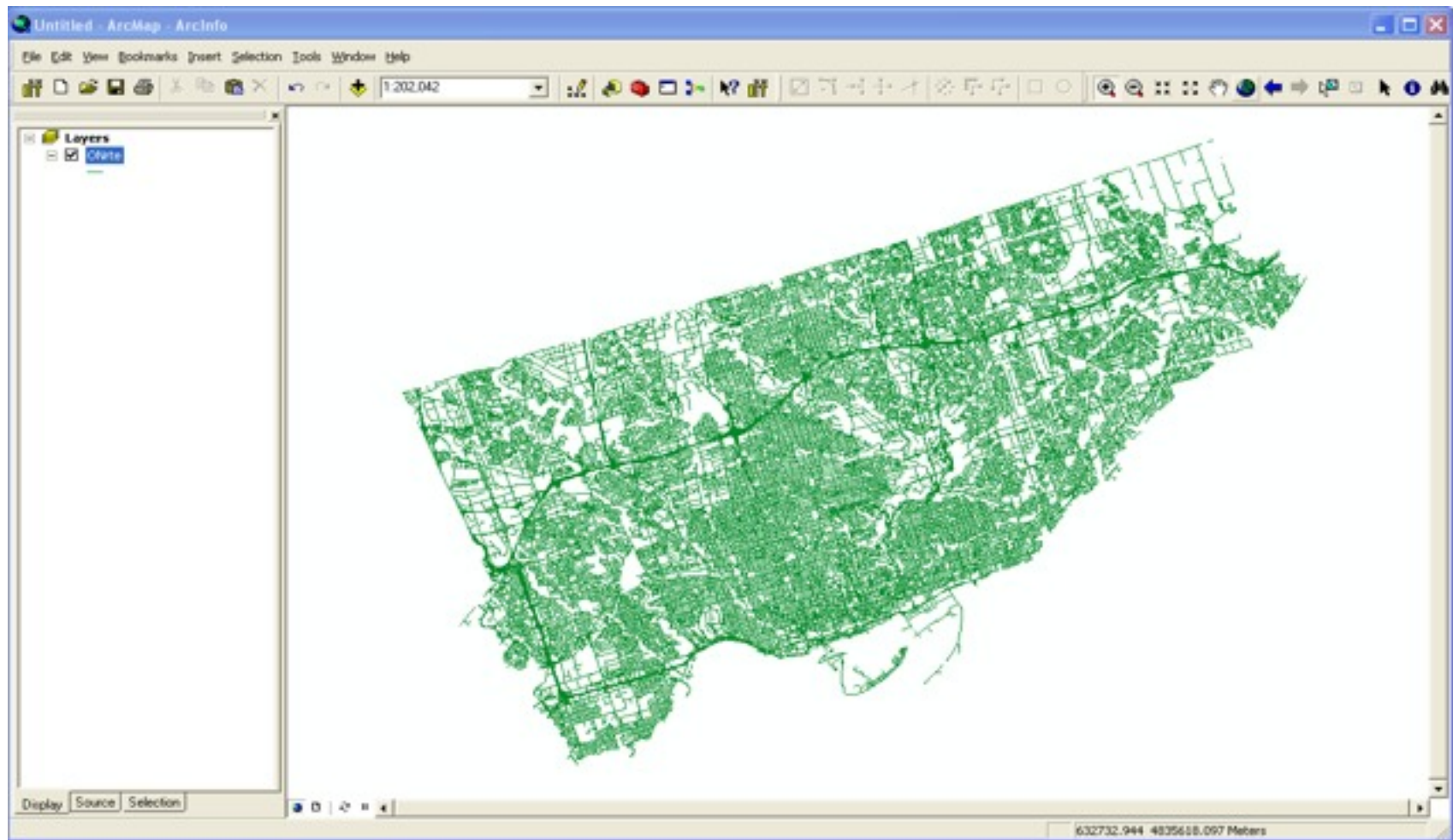
LAND_AREA_	OID	GEOGRAPHY *	TOTAL_POPU	ENGLISH_ON	FRENCH_OML	ENGLISH_AN	NEITHER_EN
32.92	644	0476.00	2470	2360	0	110	0
31.93	642	0474.00	4120	3860	0	240	15
13.17	643	0475.00	6150	5840	0	275	25
33.61	636	0470.00	2765	2585	0	175	0
171.21	637	0471.00	3525	3325	0	190	10
204.65	923	0832.00	4035	3820	0	220	0
3.78	639	0473.01	5035	4720	0	310	10
2.08	641	0473.03	3880	3625	0	260	0
3.18	640	0473.02	6685	6240	0	430	15
127.14	628	0455.00	5835	5525	0	275	30
10.18	638	0472.00	4495	4320	0	170	0
187	648	0482.00	5145	4810	0	300	30
61.86	629	0456.01	4730	4435	0	290	10
37.8	631	0456.03	4410	4210	0	195	0
183.63	650	0484.00	8560	8055	0	500	10
8.68	651	0485.01	3595	3435	0	145	15
6.55	652	0485.02	5895	5555	0	320	15
113.69	633	0460.02	3585	3240	0	310	30
12.15	921	0831.01	4500	4090	0	405	10

Record: 1 Show: All Selected Records (0 out of 941 Selected) Options



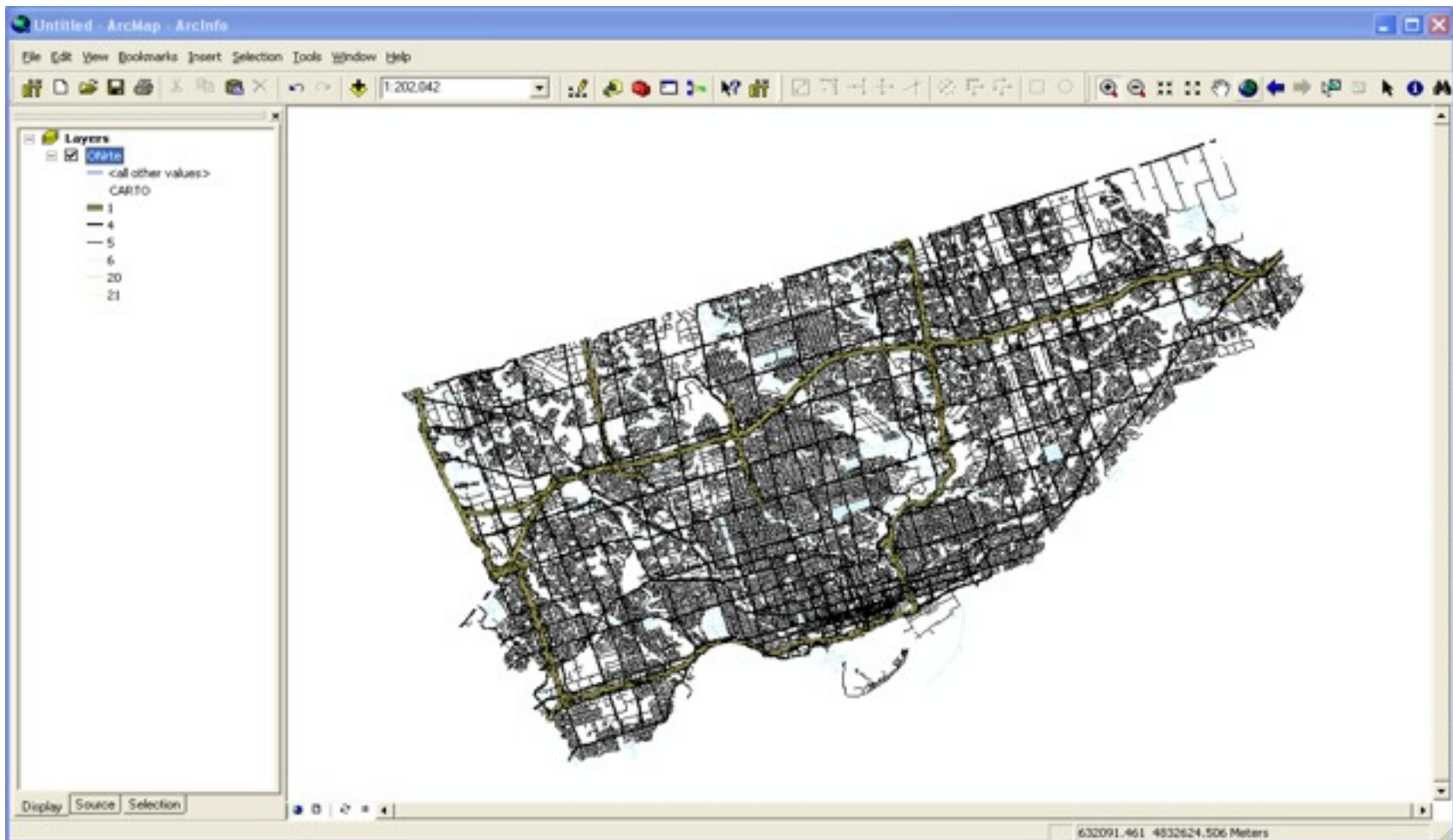


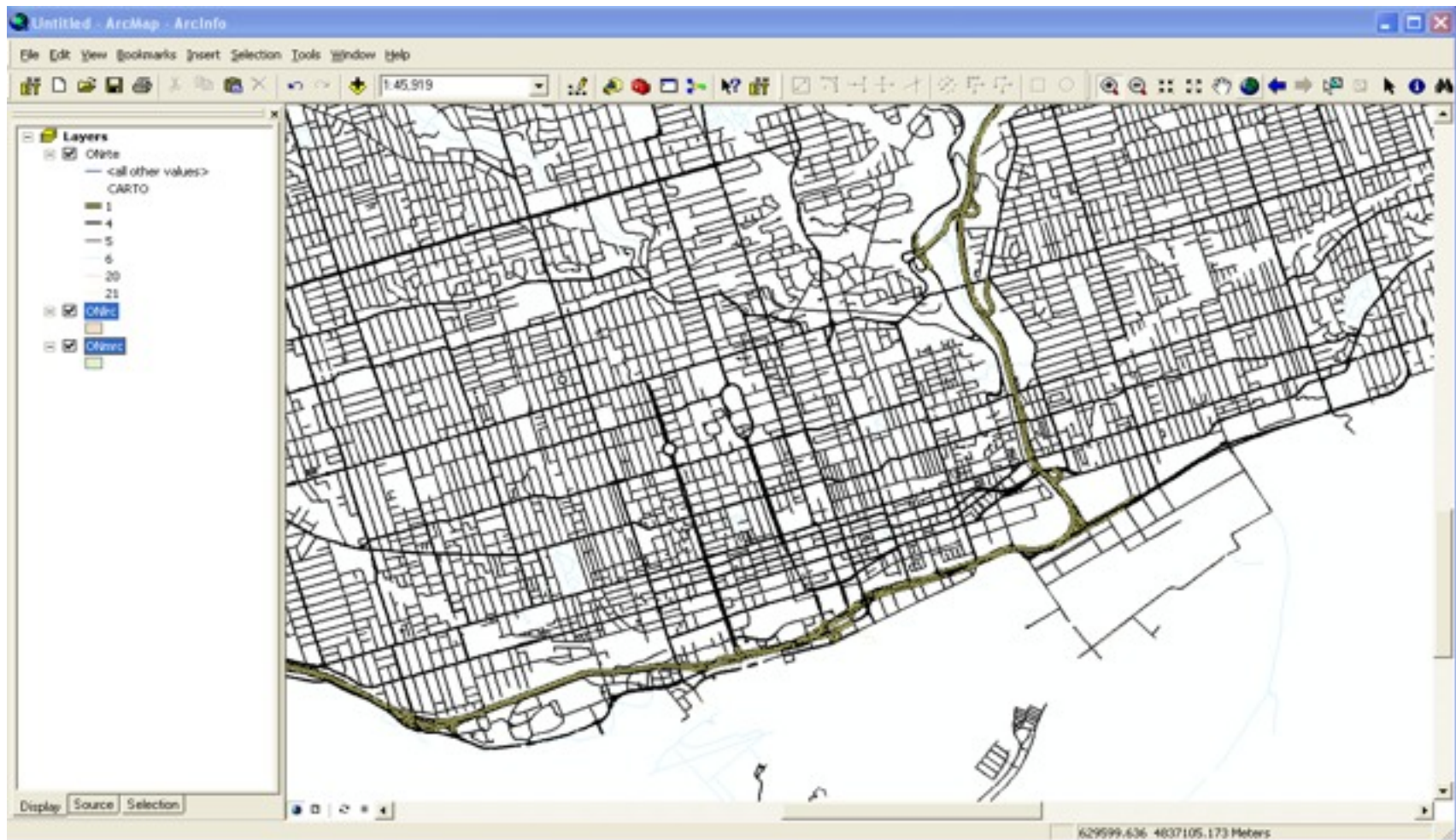


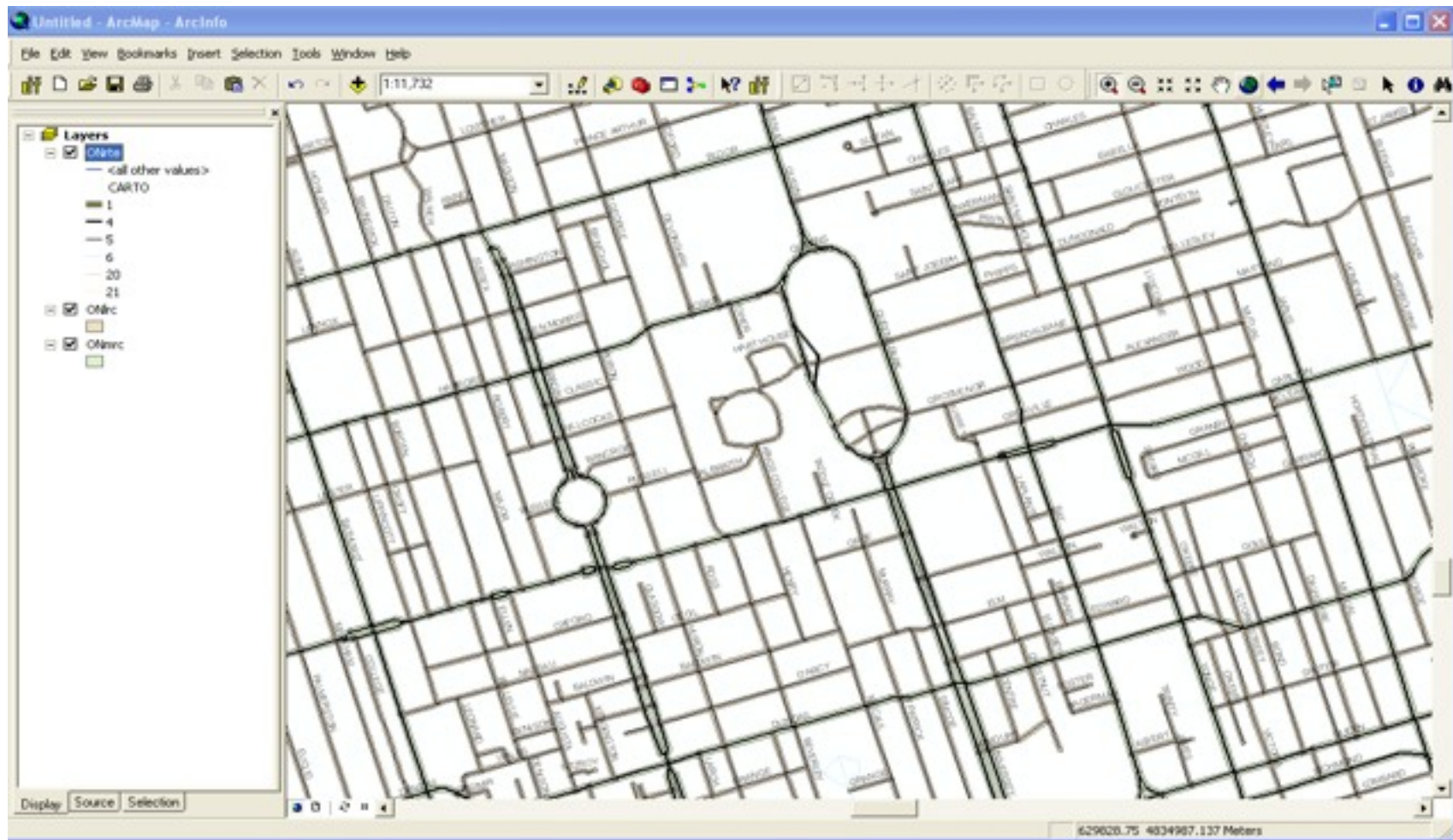


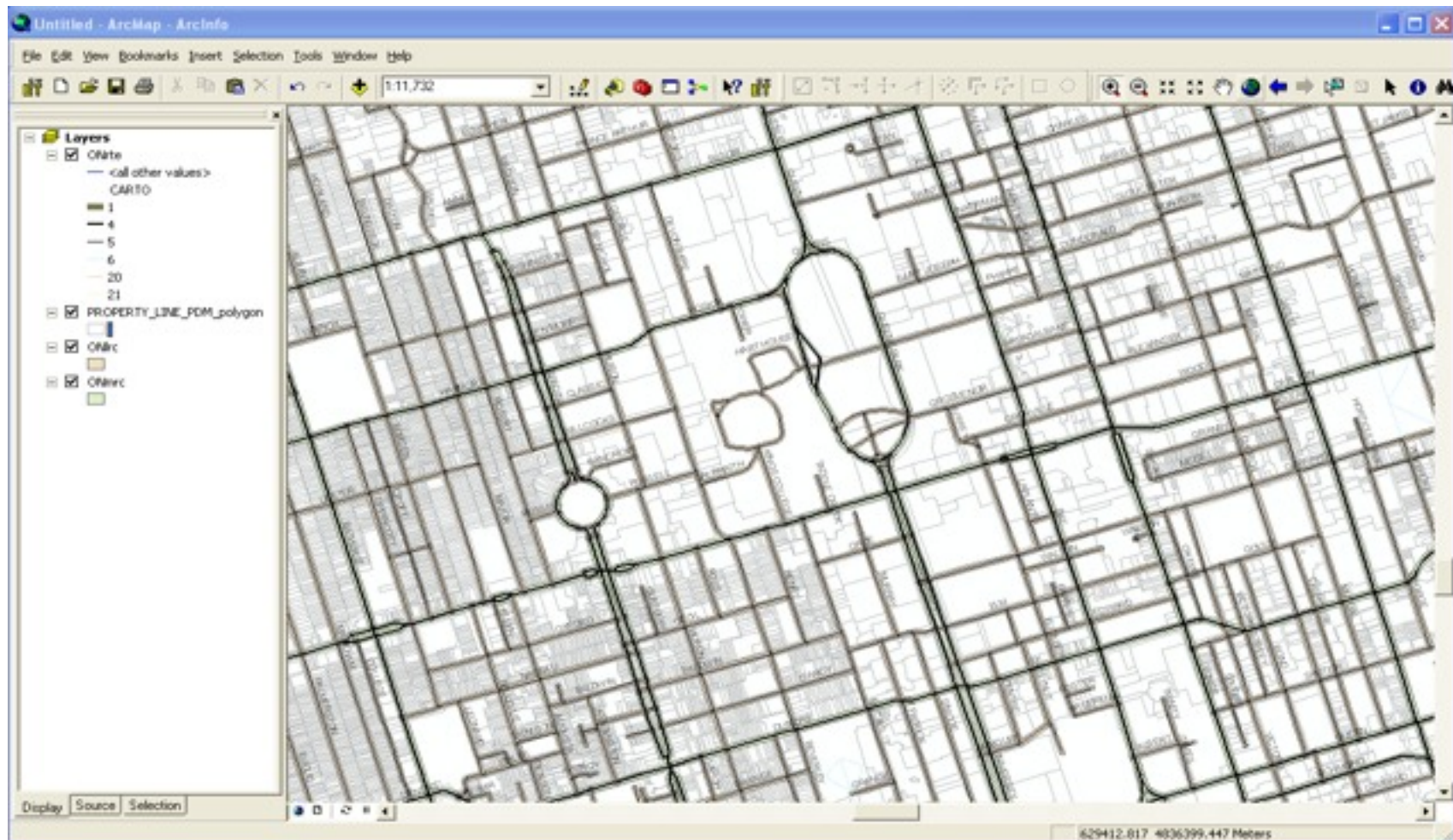
What does GIS Look Like?

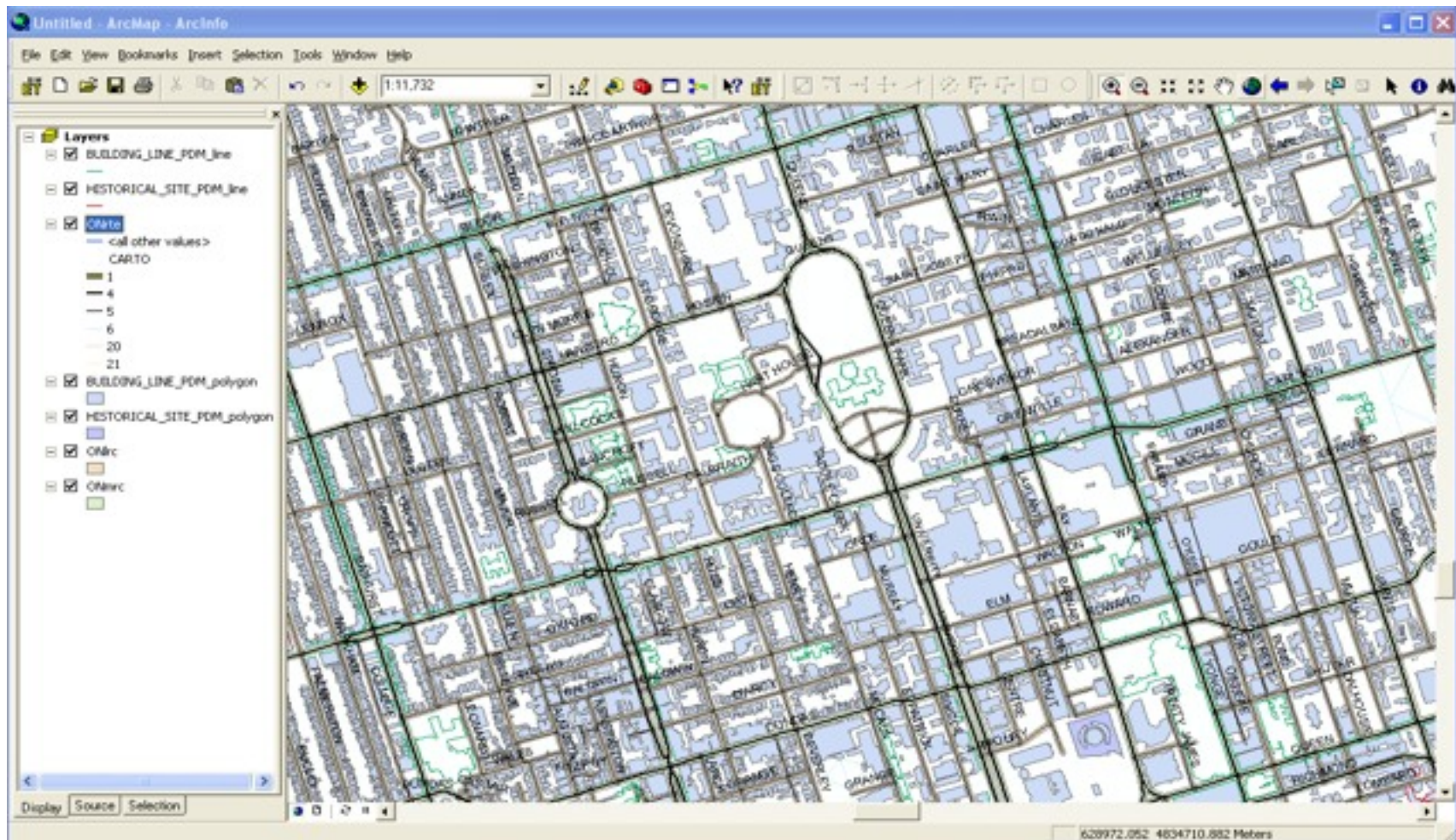
Source: DMTI Spatial Road Network File v2009.4

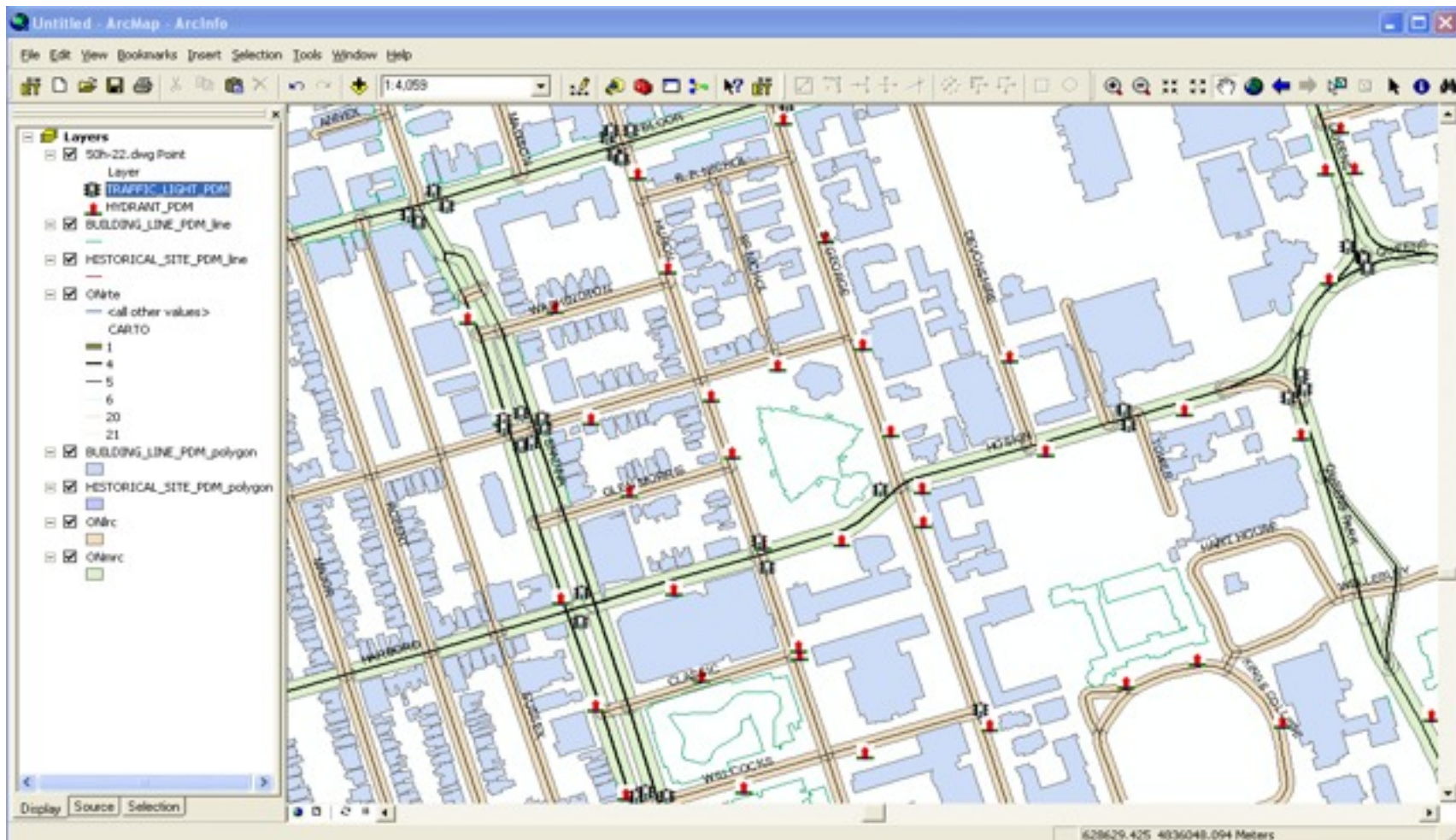




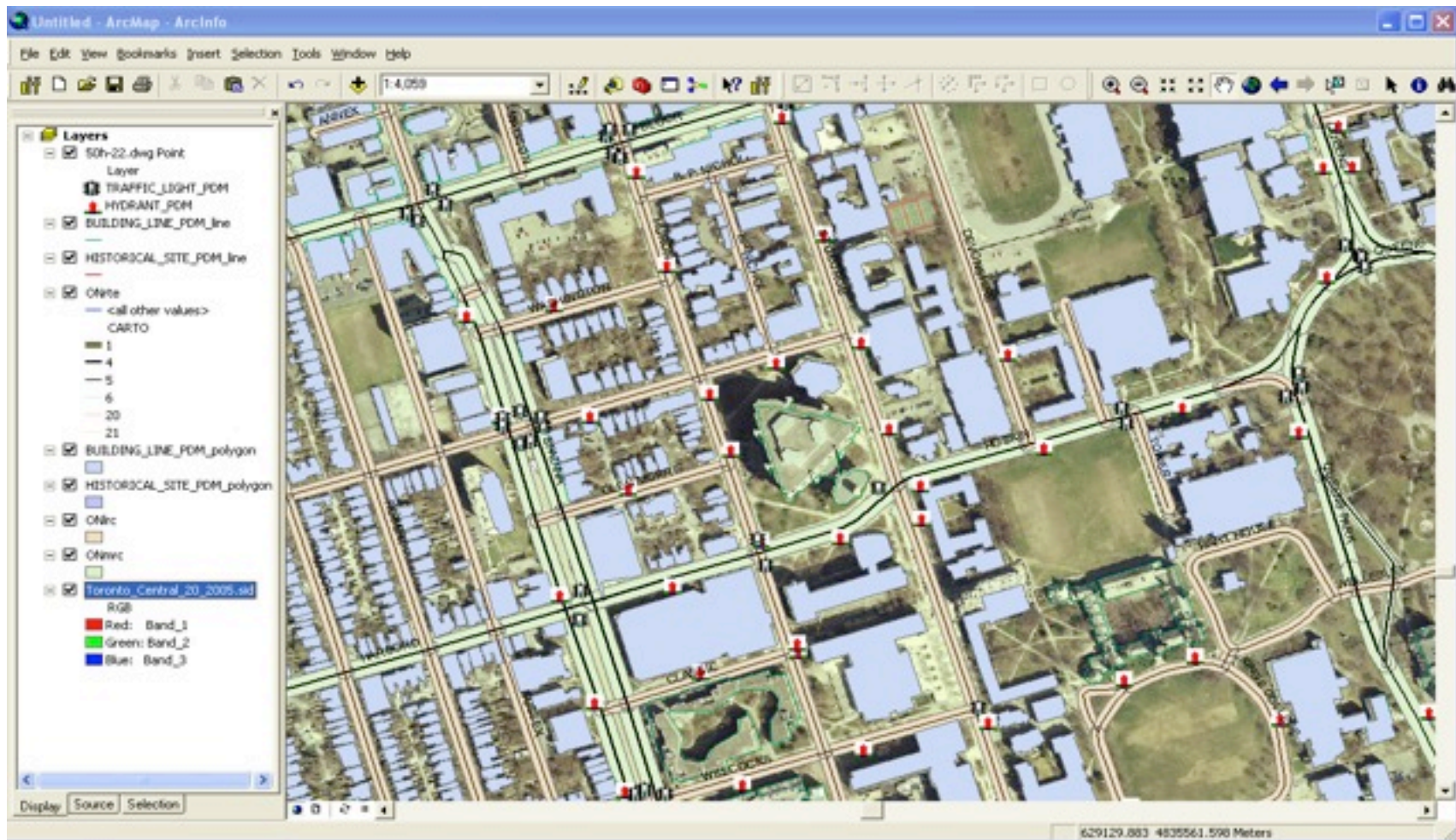






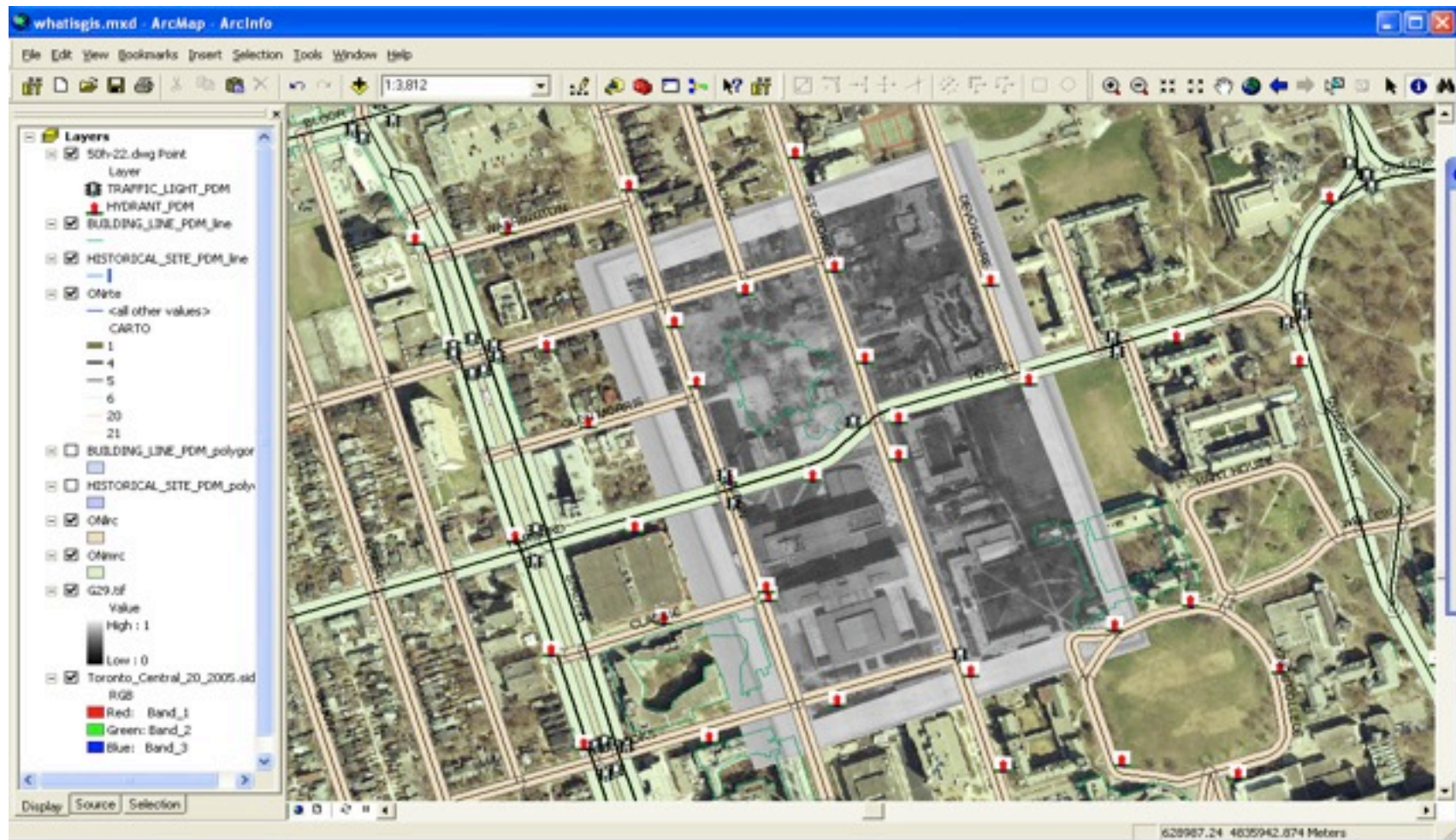


City of Toronto, Works and Emergency Fire Hydrants and Traffic Lights

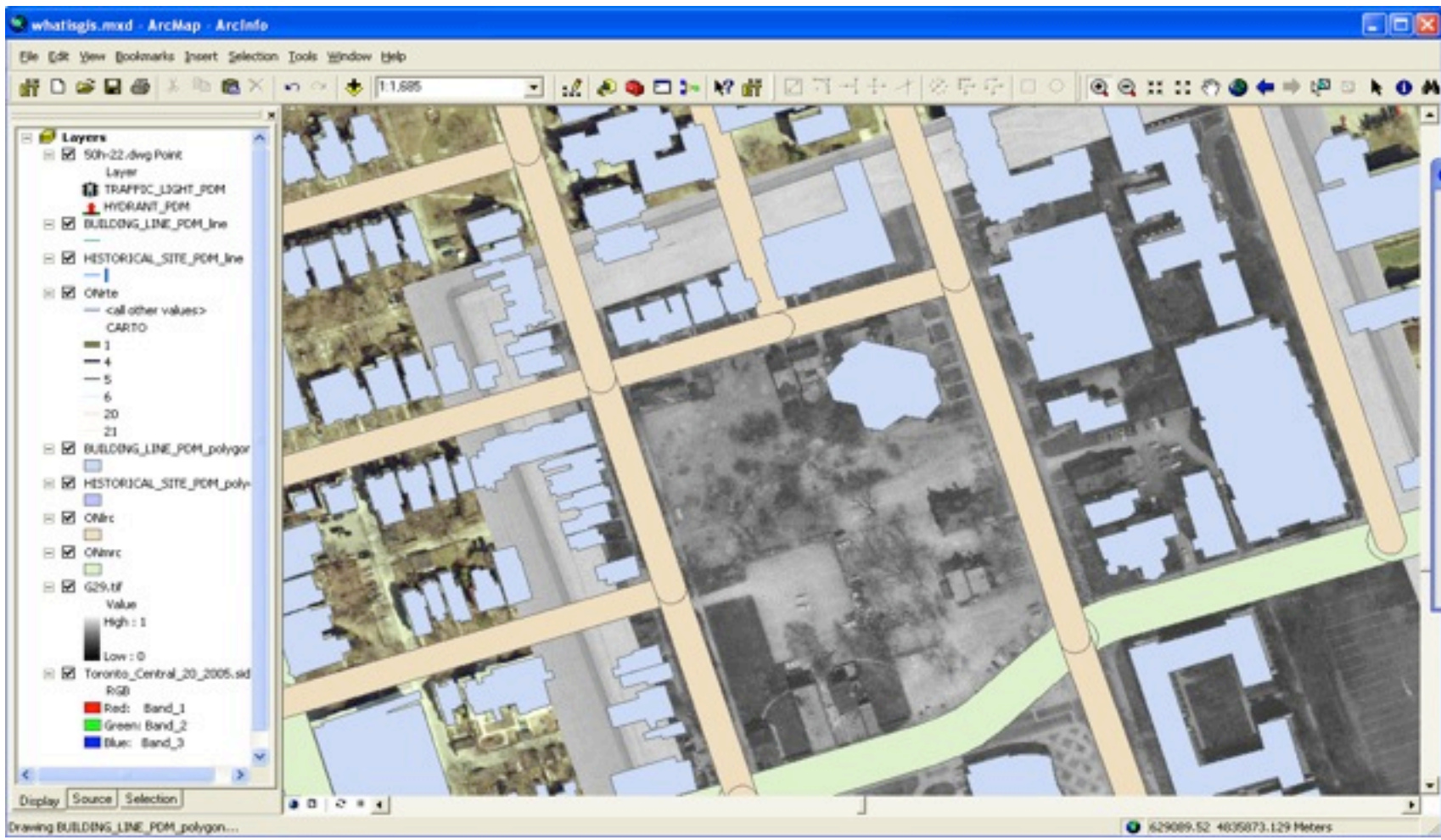


Ontario Min. of Natural Resources 20cm resolution Orthophotography





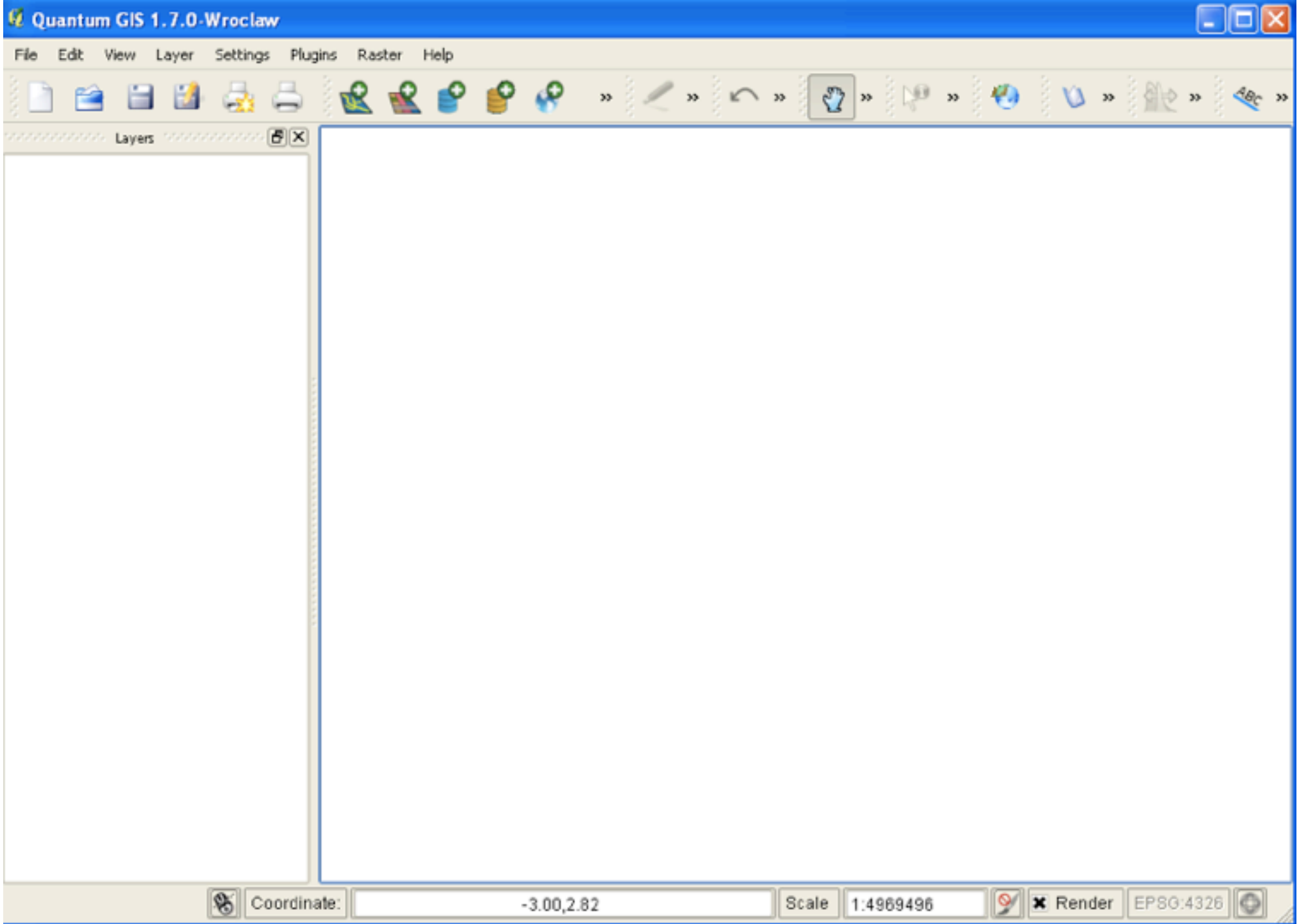
City of Toronto, 1968 Paper Air Photo



City of Toronto, 1968 Paper Air Photo



Download the software and workshop data from <http://maps.library.utoronto.ca/FTP/hgis.zip> (username is mapguest password is )





**Add vector layer** [?] [X]

Source type

File     Directory     Database     Protocol

Encoding: System [v]

Source

Dataset:  [Browse]

[Open]    [Cancel]    [Help]



### Add vector layer

Source type

File    Directory    Database    Protocol

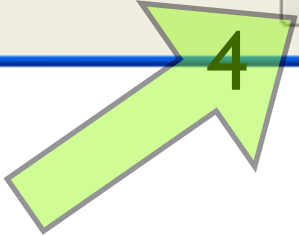
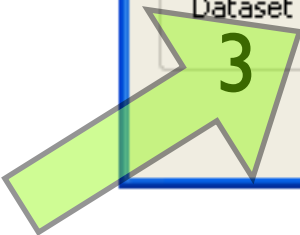
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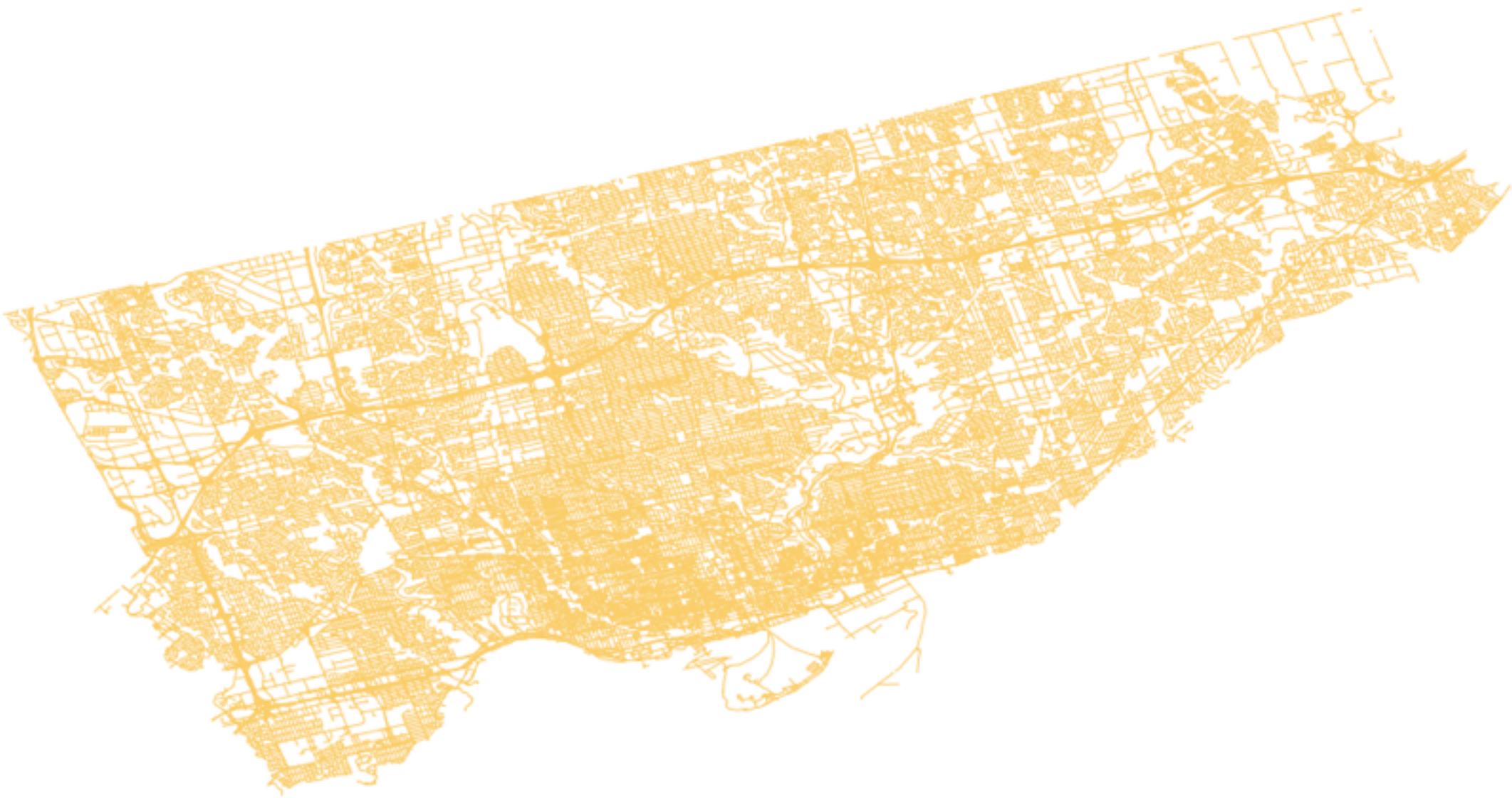
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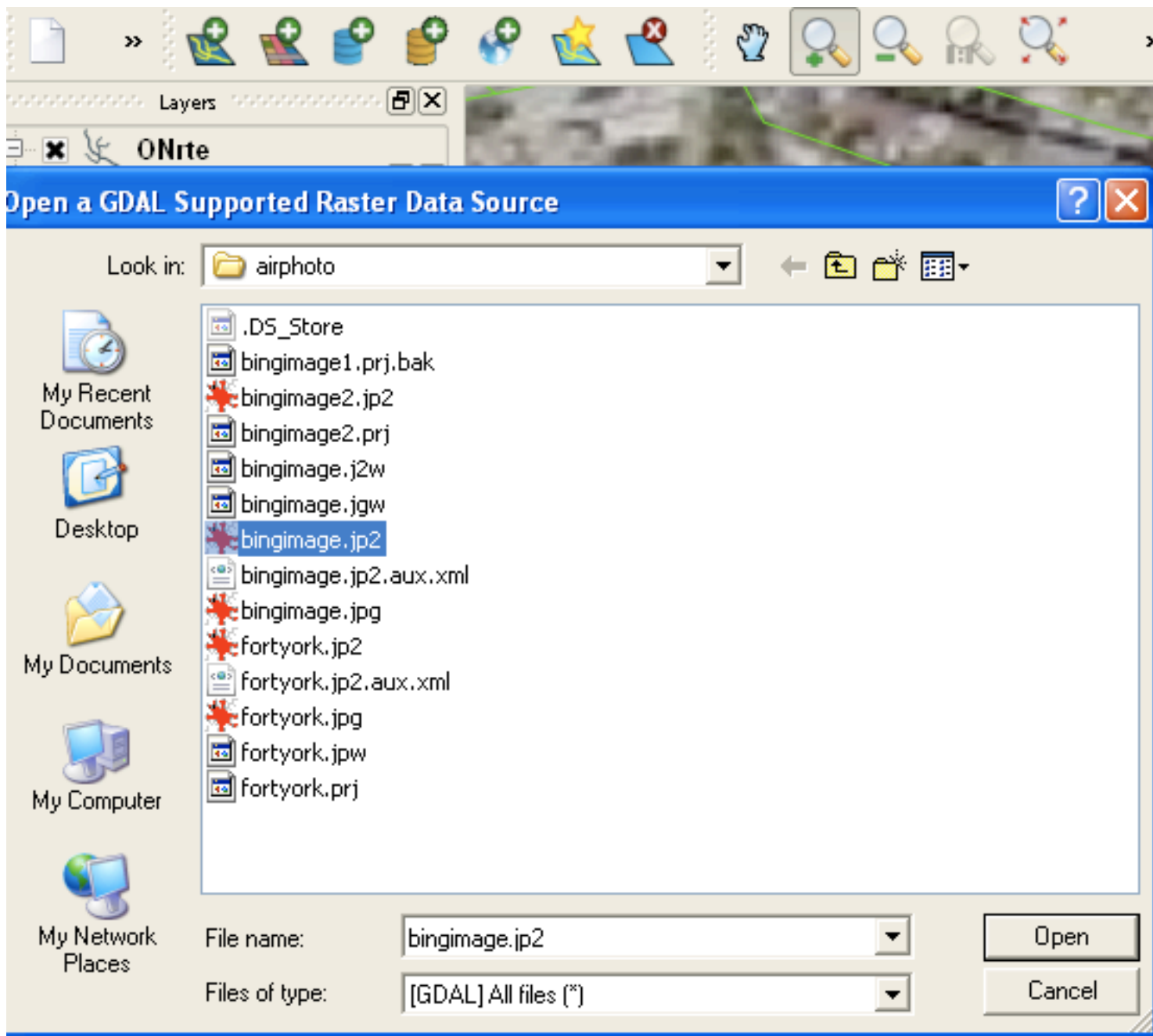
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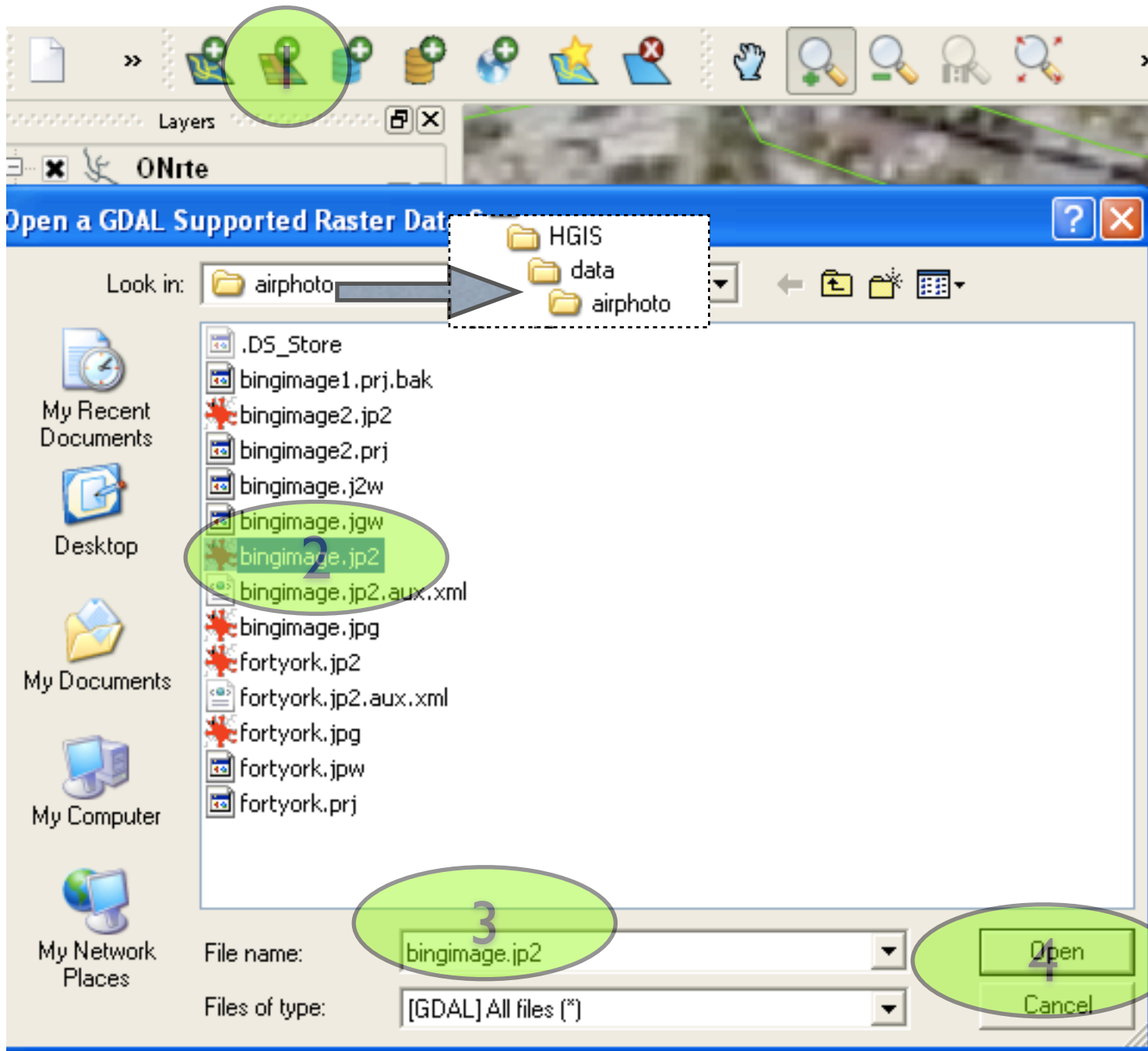
Open   Cancel   Help

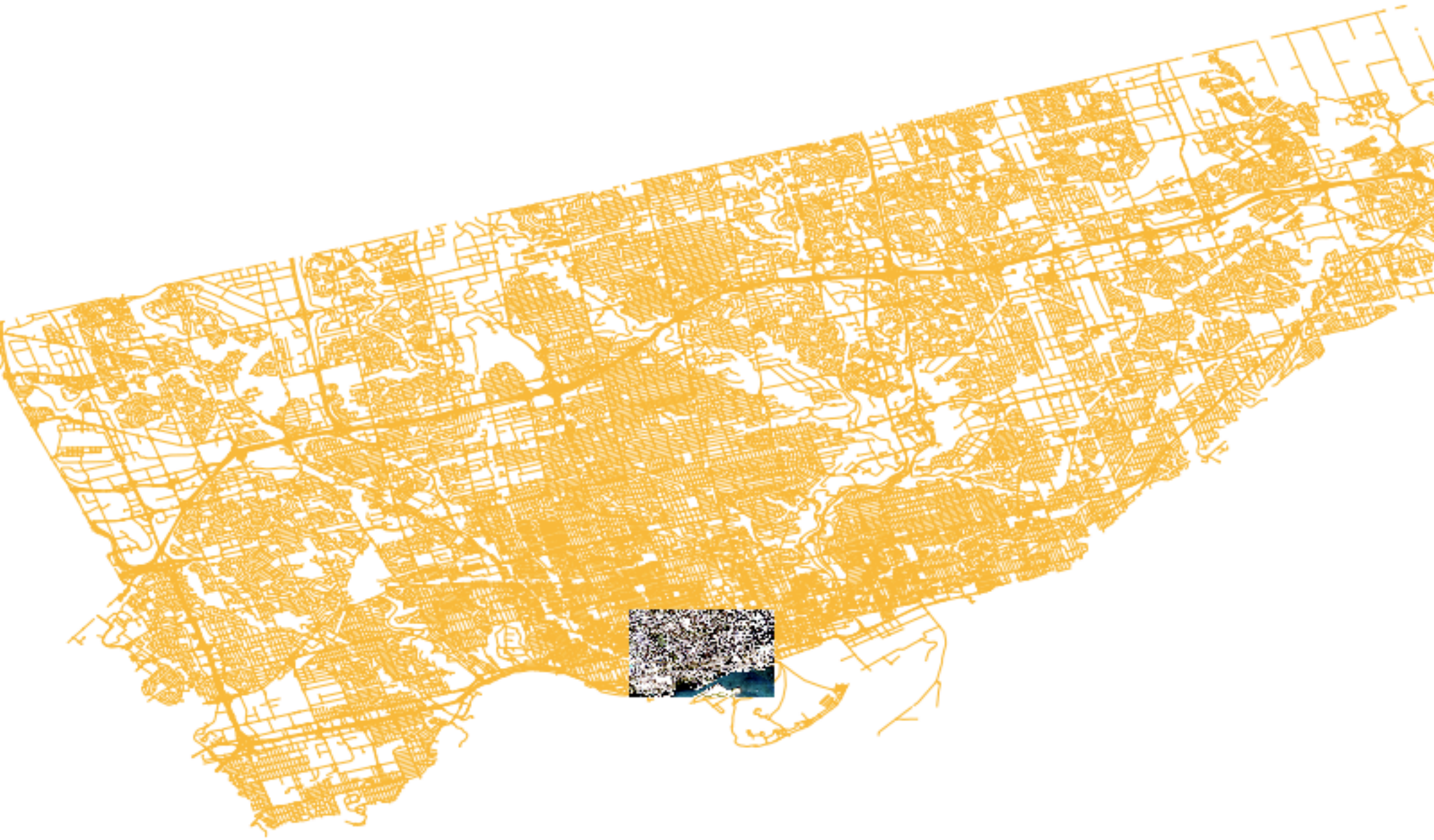


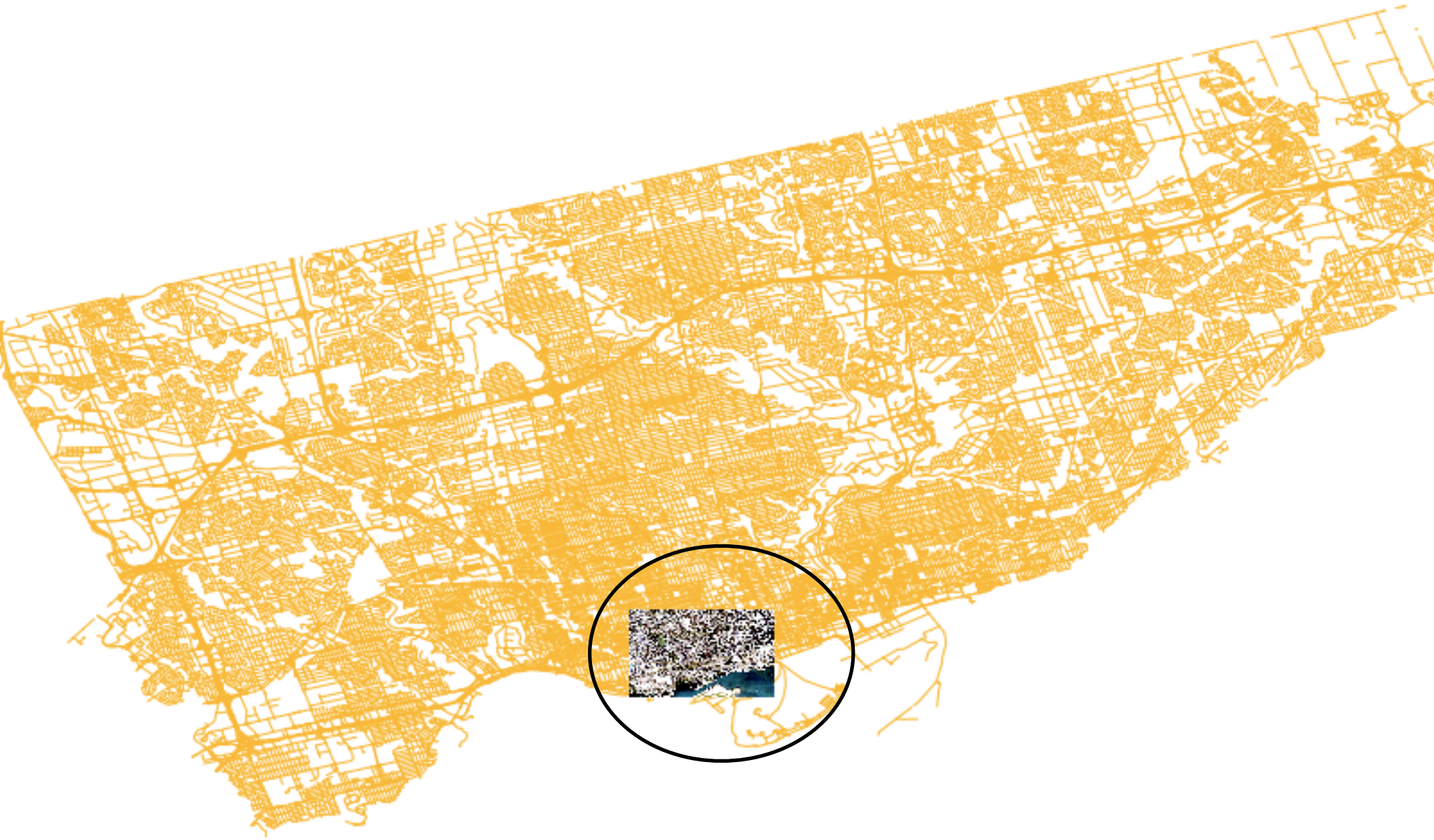


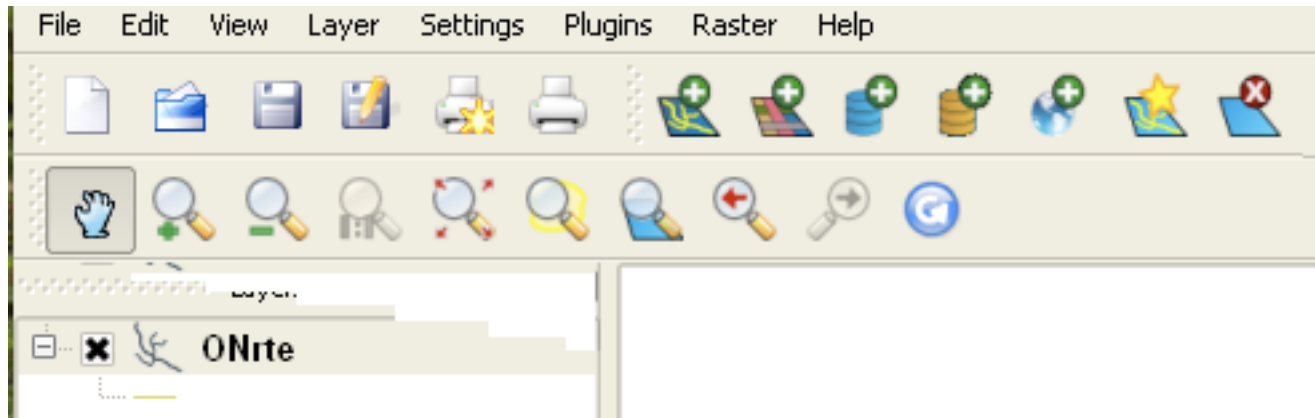
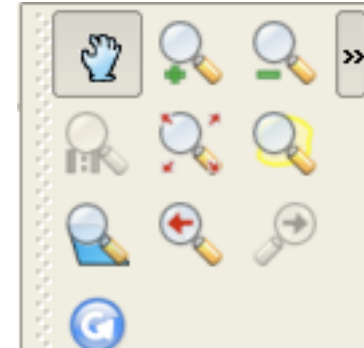


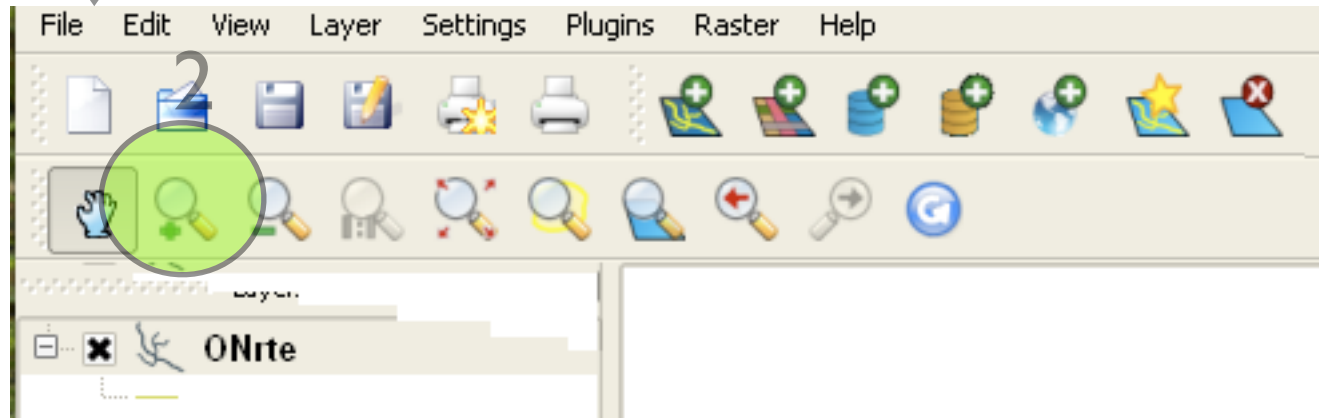
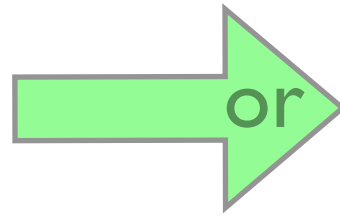
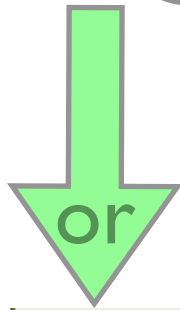


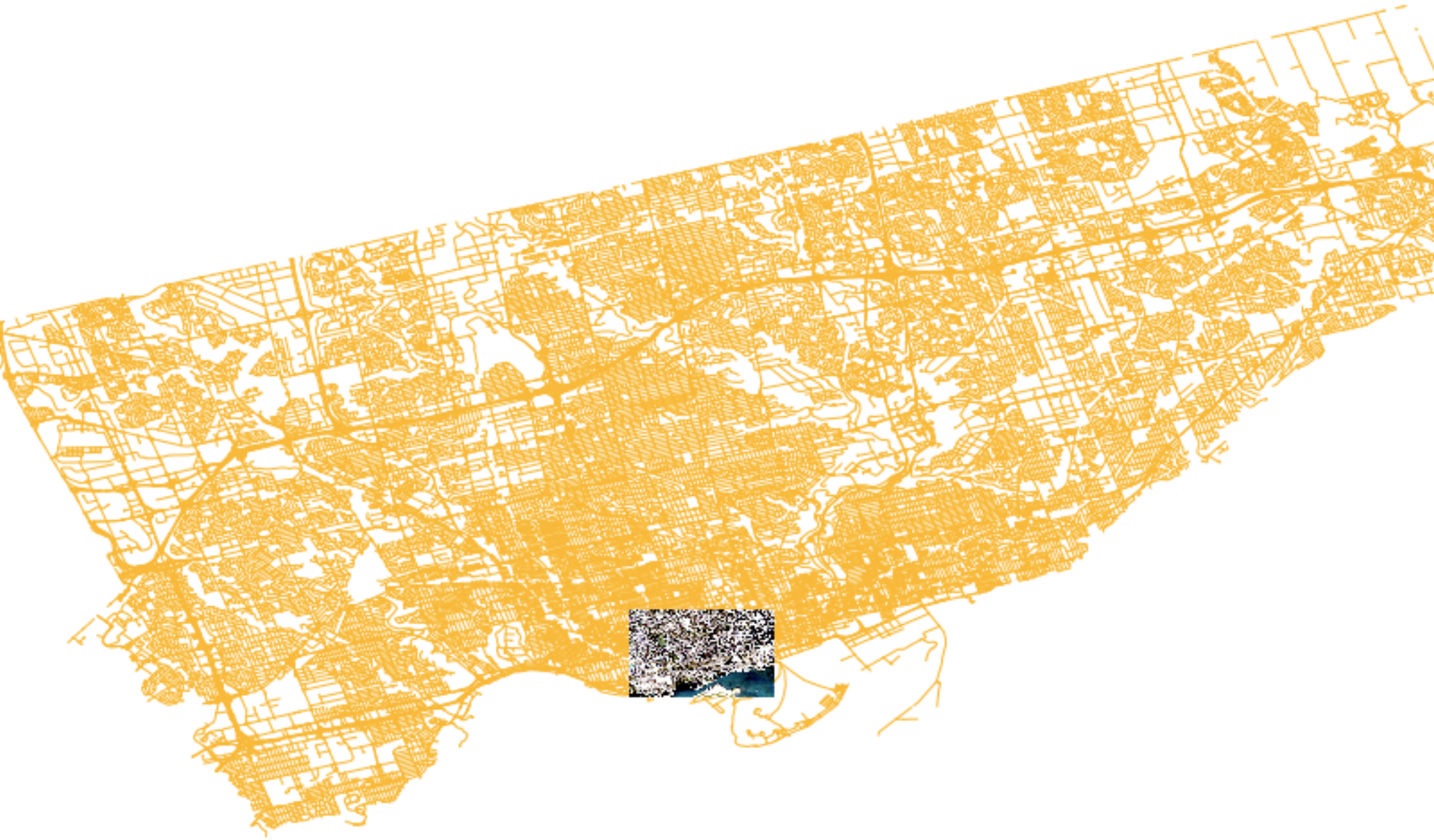


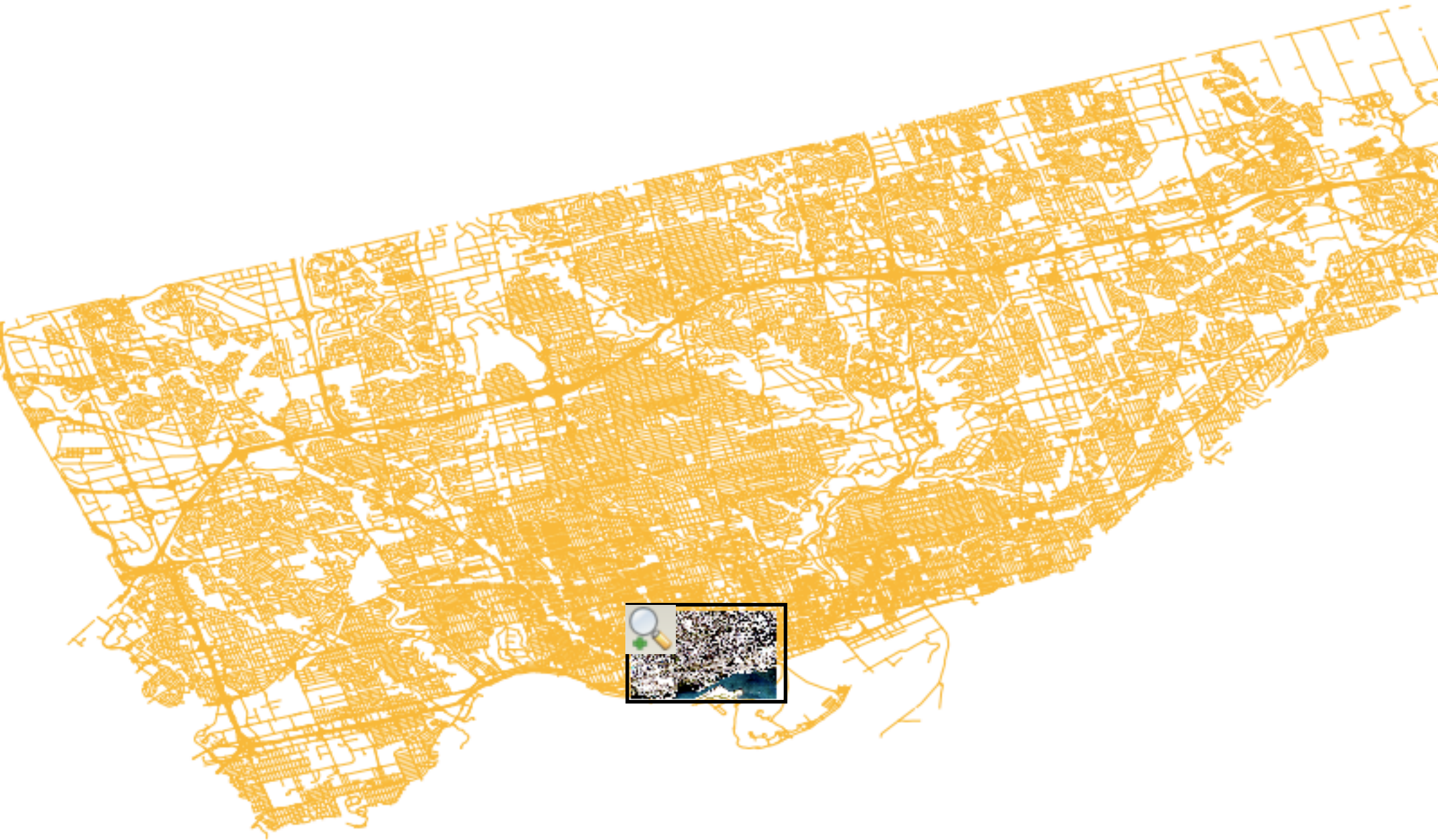


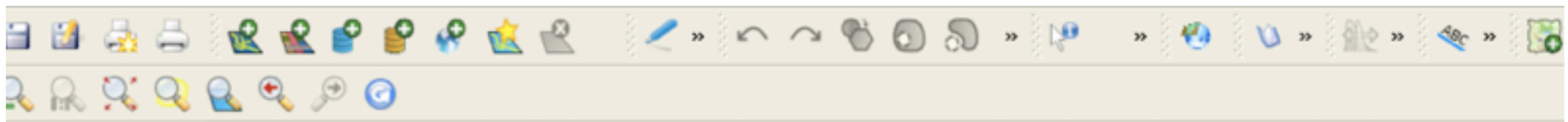












Layers

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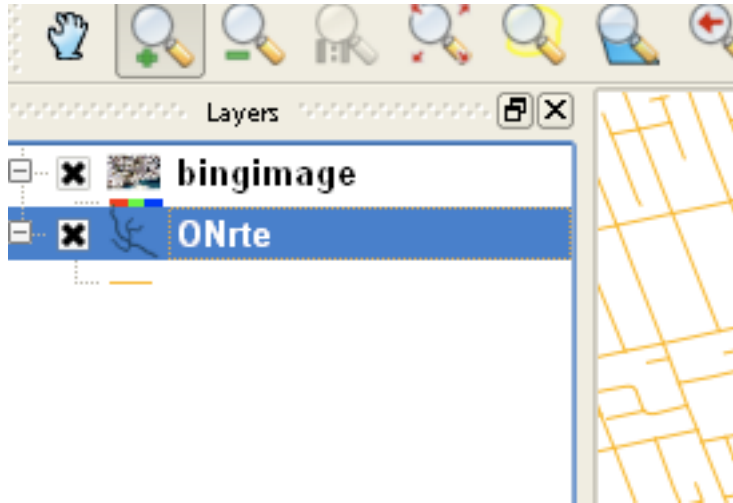
Text



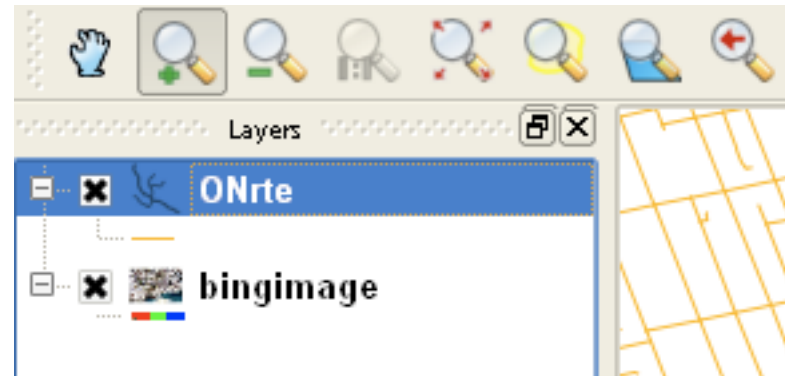
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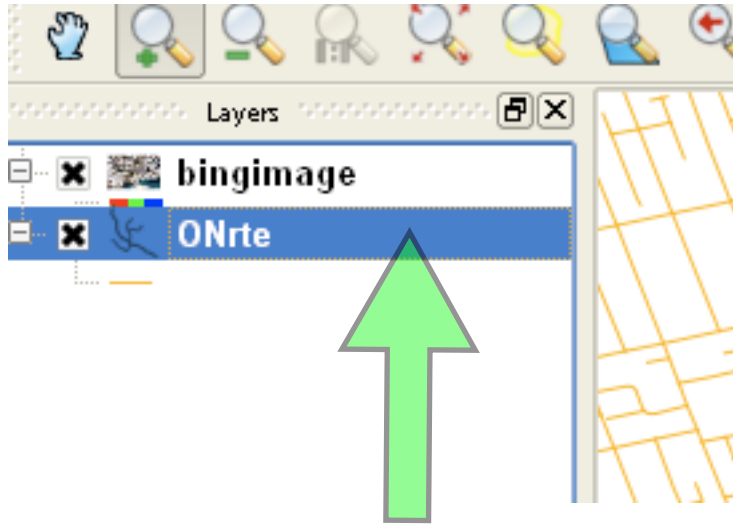
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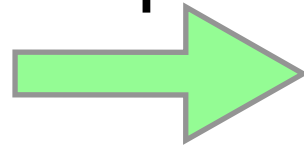
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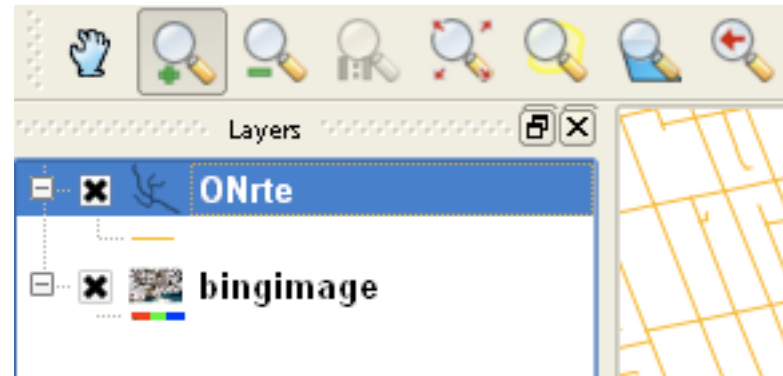
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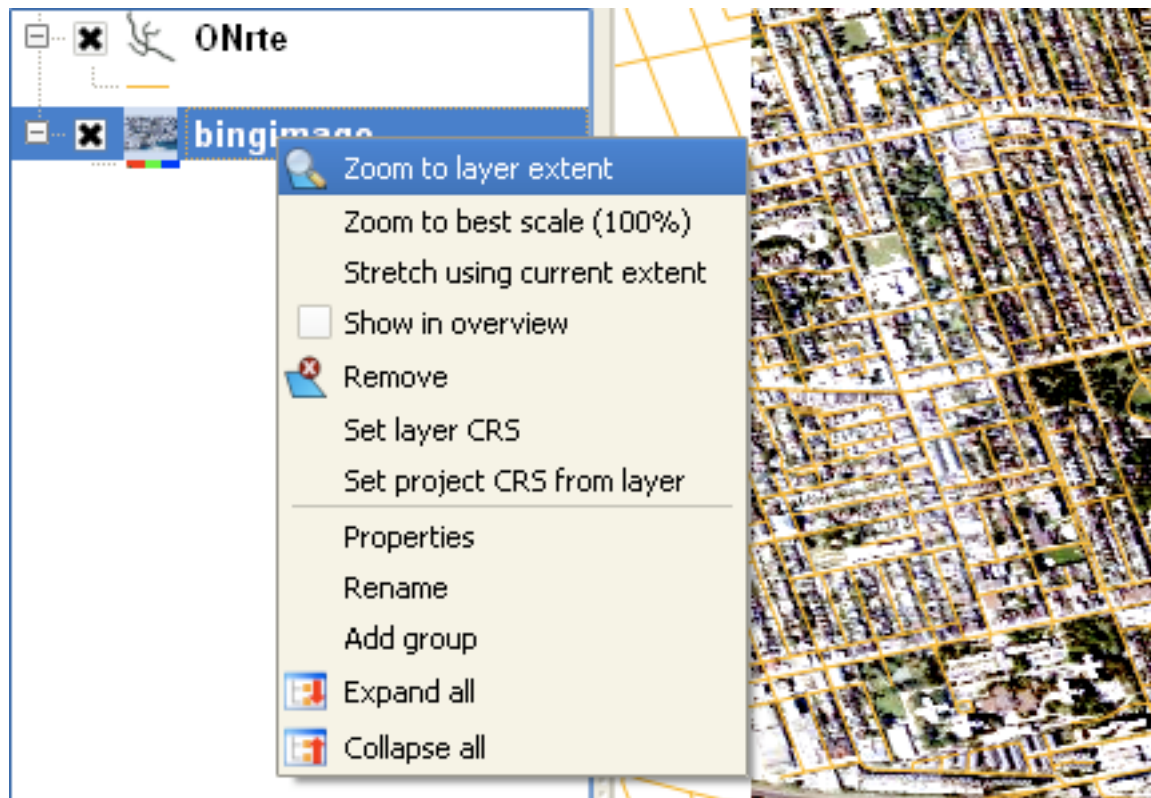
Click-hold and  
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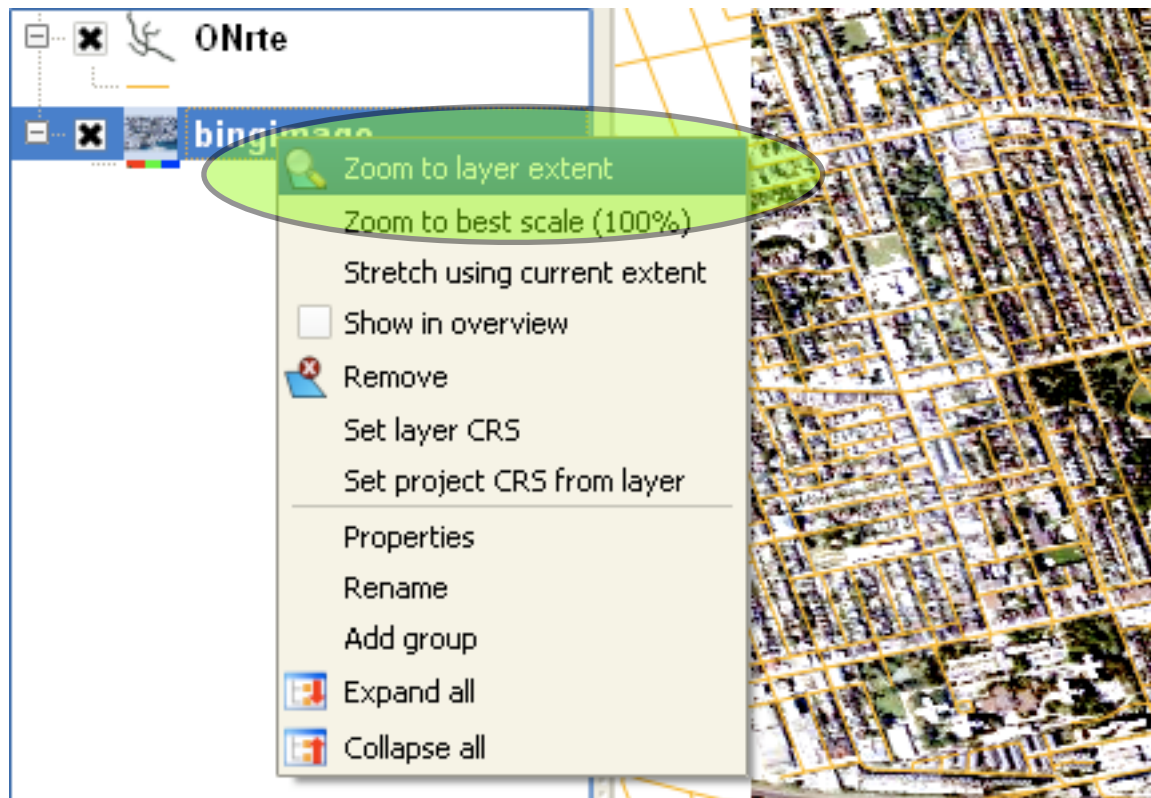


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ONite

bingimage



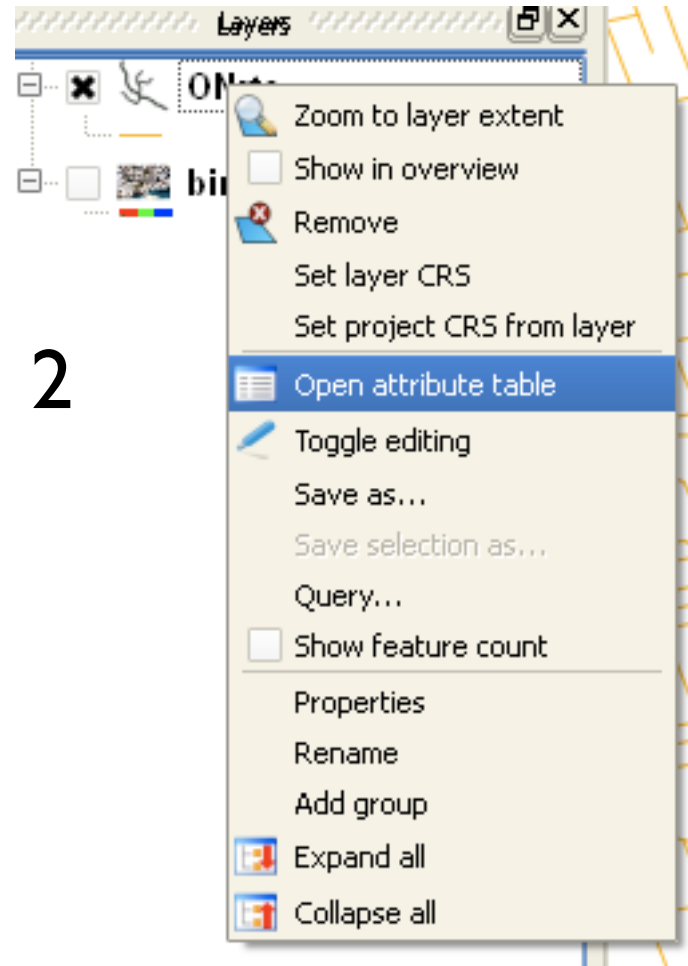
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bingimage



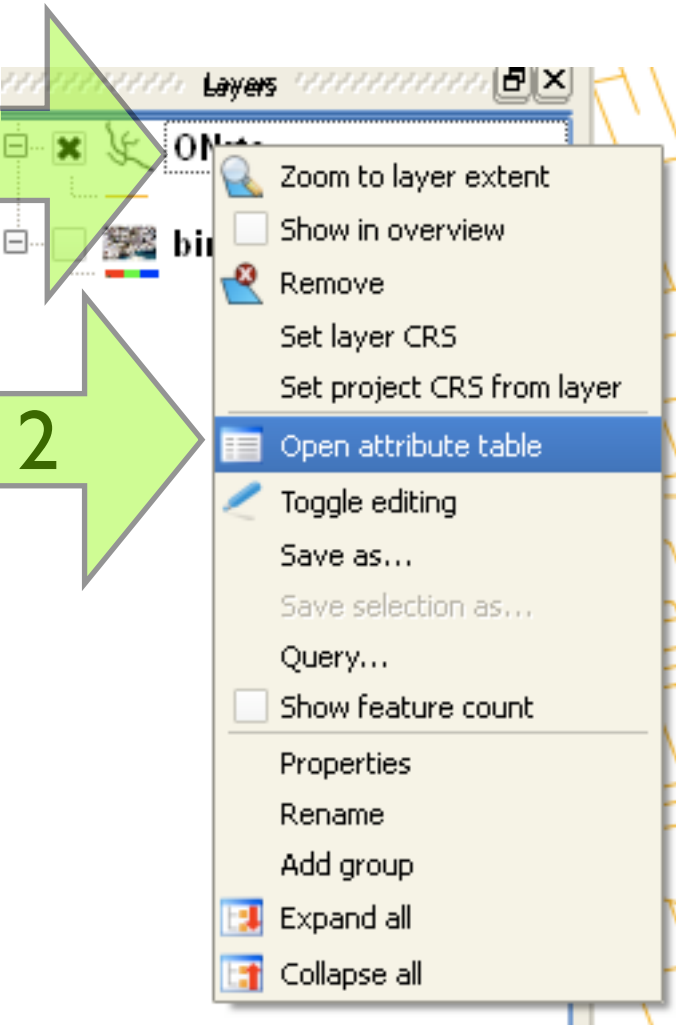
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2



1 Right-Click



2



	STREET	STREETNAME	CARTO
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1	WESTON RD	WESTON	4
2	NULL	NULL	6
3	NULL	NULL	5
4	YONGE ST	YONGE	4
5	HIGHWAY 27	27	4
6	MARTIN GROVE RD	MARTIN GROVE	4
7	ISLINGTON AVE	ISLINGTON	4
8	PINE VALLEY DR	PINE VALLEY	4
9	GAUDAUR RD	GAUDAUR	5
10	SCHOLES RD	SCHOLES	5
11	WESTON RD	WESTON	4
12	NULL	NULL	1
13	NULL	NULL	1
14	DIRECTOR CRT	DIRECTOR	5
15	ADESSO DR	ADESSO	5
16	STEELES AVE W	STEELES	4
17	DUFFERIN ST	DUFFERIN	4
18	CONLEY ST	CONLEY	5
19	NEW WESTMINS...	NEW WESTMINS...	5
20	THURMAN RD	THURMAN	5
21	BATHURST ST	BATHURST	4
22	EMERALD LANE	EMERALD	5

Show selected only  
  Search selected only  
  Case sensitive

Look for  in



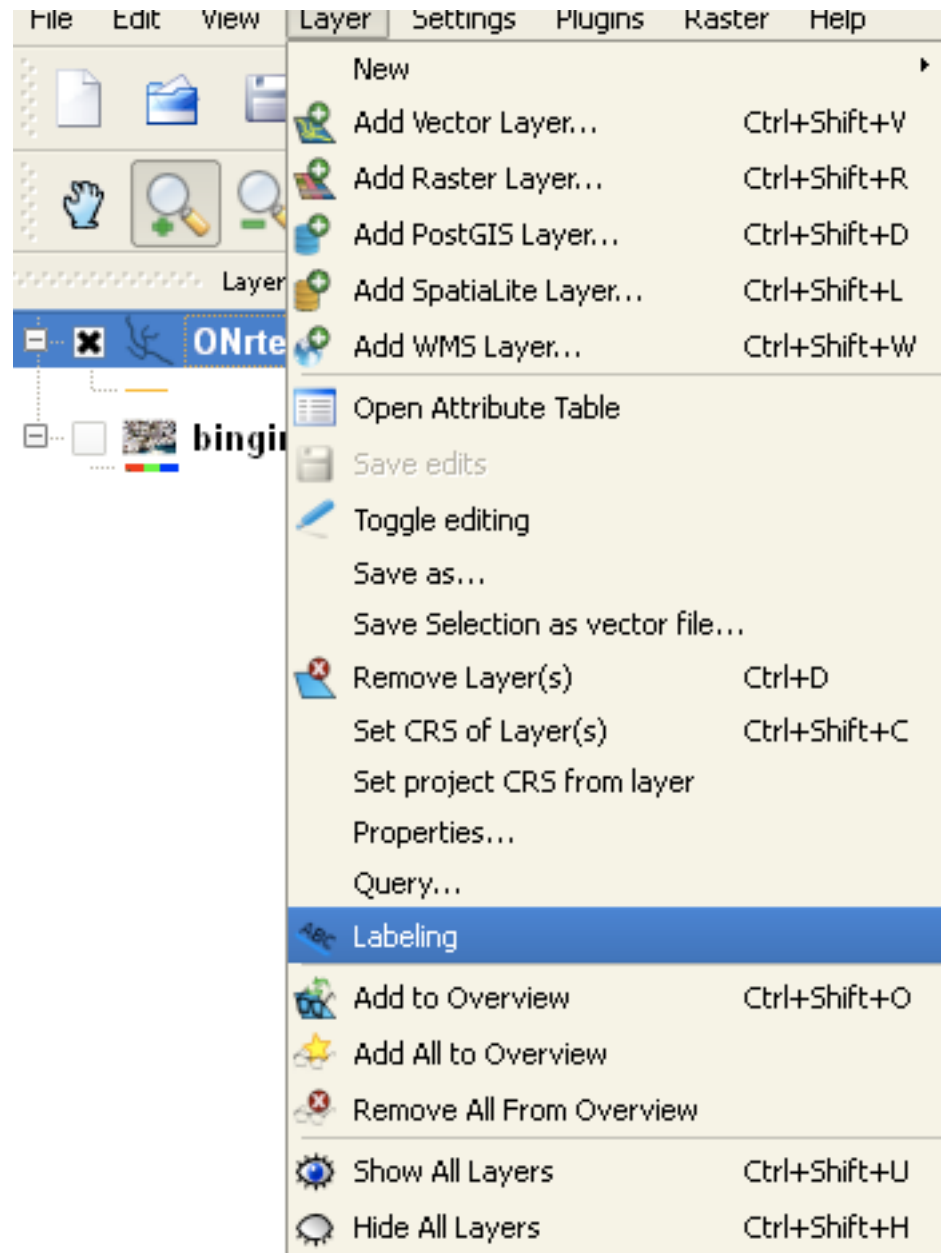
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7	ISLINGTON AVE	ISLINGTON	4
8	PINE VALLEY DR	PINE VALLEY	4
9	GAUDAUR RD	GAUDAUR	5
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14	DIRECTOR CRT	DIRECTOR	5
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17	DUFFERIN ST	DUFFERIN	4
18	CONLEY ST	CONLEY	5
19	NEW WESTMINS...	NEW WESTMINS...	5
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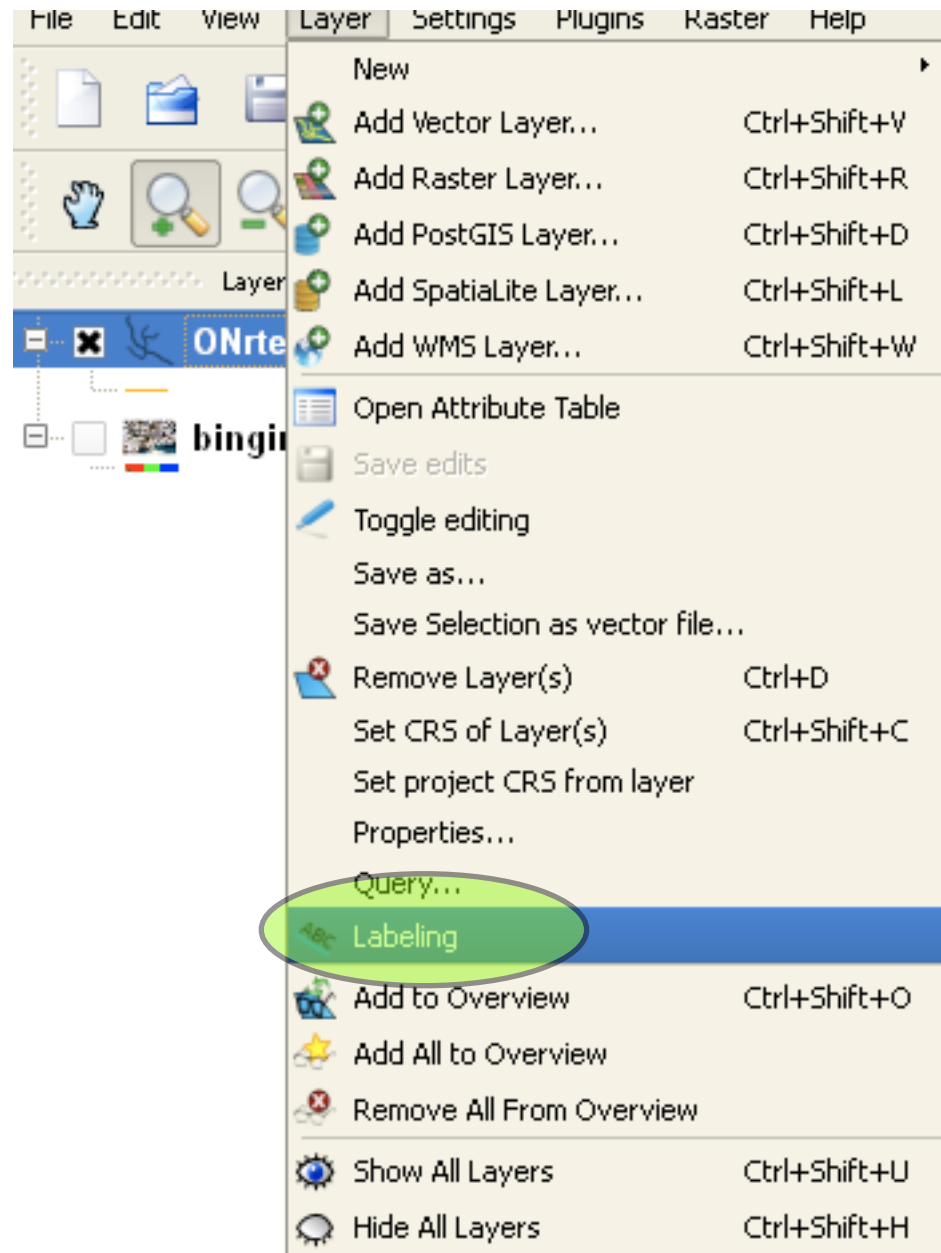
Look for  in   Search

Show selected only  Search selected only  Case sensitive

Advanced search

?





# Layer labeling settings



Label this layer

Field with labels

Sample Lorem Ipsum

Label settings

Advanced

Data defined settings

Text style

Font MS Shell Dlg 2, 8.25 pt ... Color  Size 8.2500 In points

- STREET
- FROMLEFT
- TOLEFT
- FROMRIGHT
- TORIGHT
- PREDIR
- PRETYPE
- STREETNAME
- SUFTYPE
- SUFDIR

Buffer

Size 1.00 mm  Color

Scale-based visibility

Minimum 1  Maximum 10000000

OK Cancel Apply

# Layer labeling settings

Label this layer

Sample Lorem Ipsum

Field with labels

- STREET
- FROMLEFT
- TOLEFT
- FROMRIGHT
- TORIGHT
- PREDIR
- PRETYPE
- STREETNAME
- SUFTYPE
- SUFDIR

Label settings

Advanced

Data defined settings

Text style

Font

MS Shell Dlg 2, 8.25 pt

...

Color



Size

8.2500

In points

2  Buffer

Size 1.00 mm

Color



Scale-based visibility

Minimum 1

Maximum 10000000

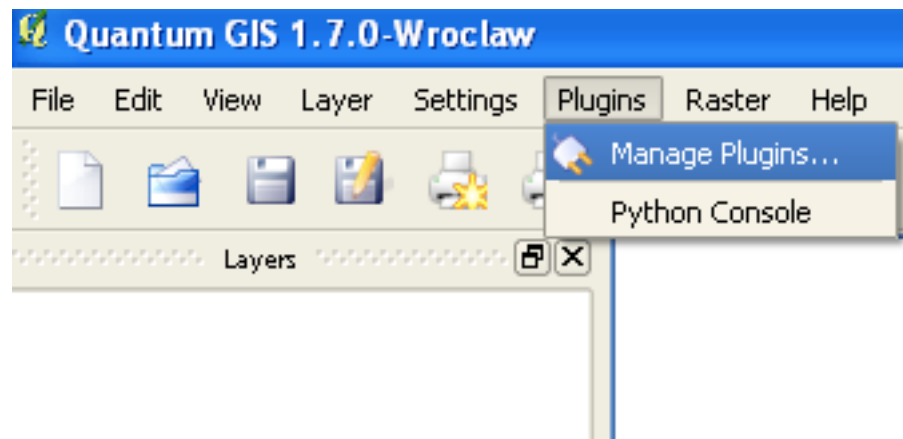
OK 4

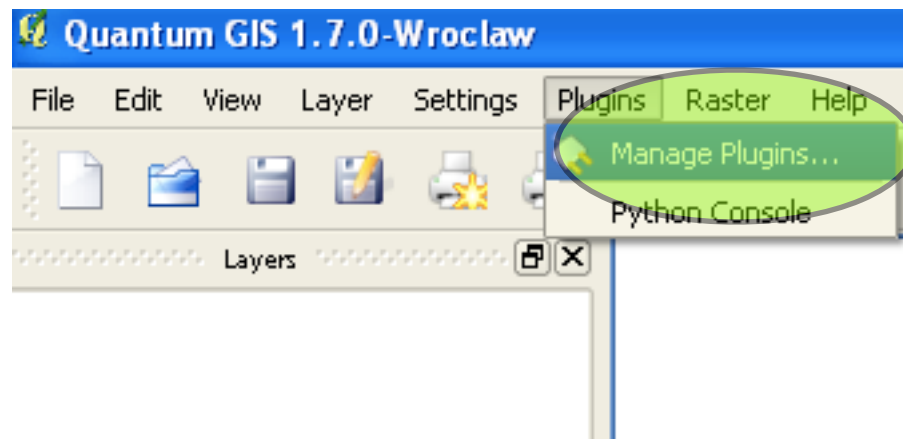
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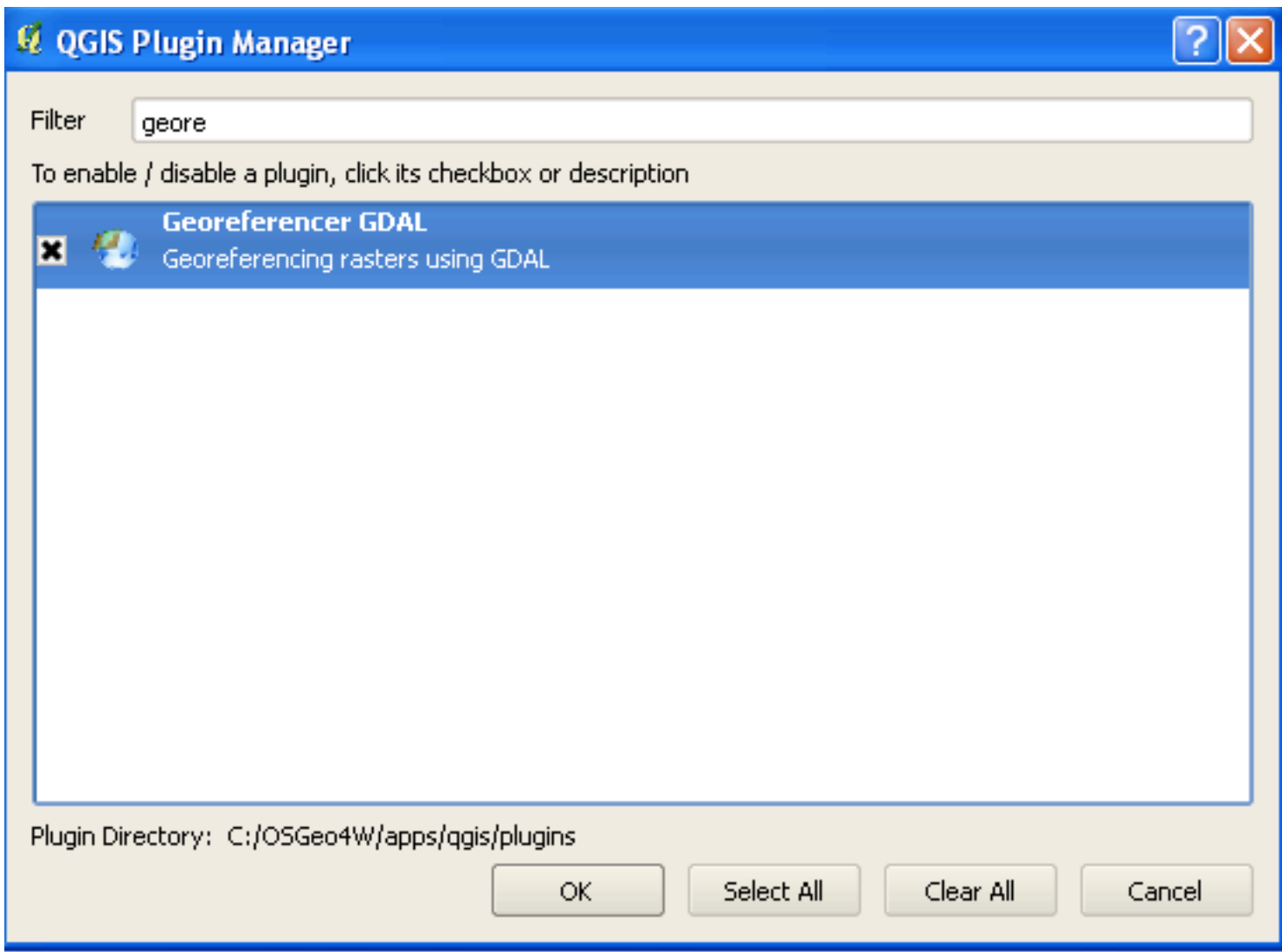
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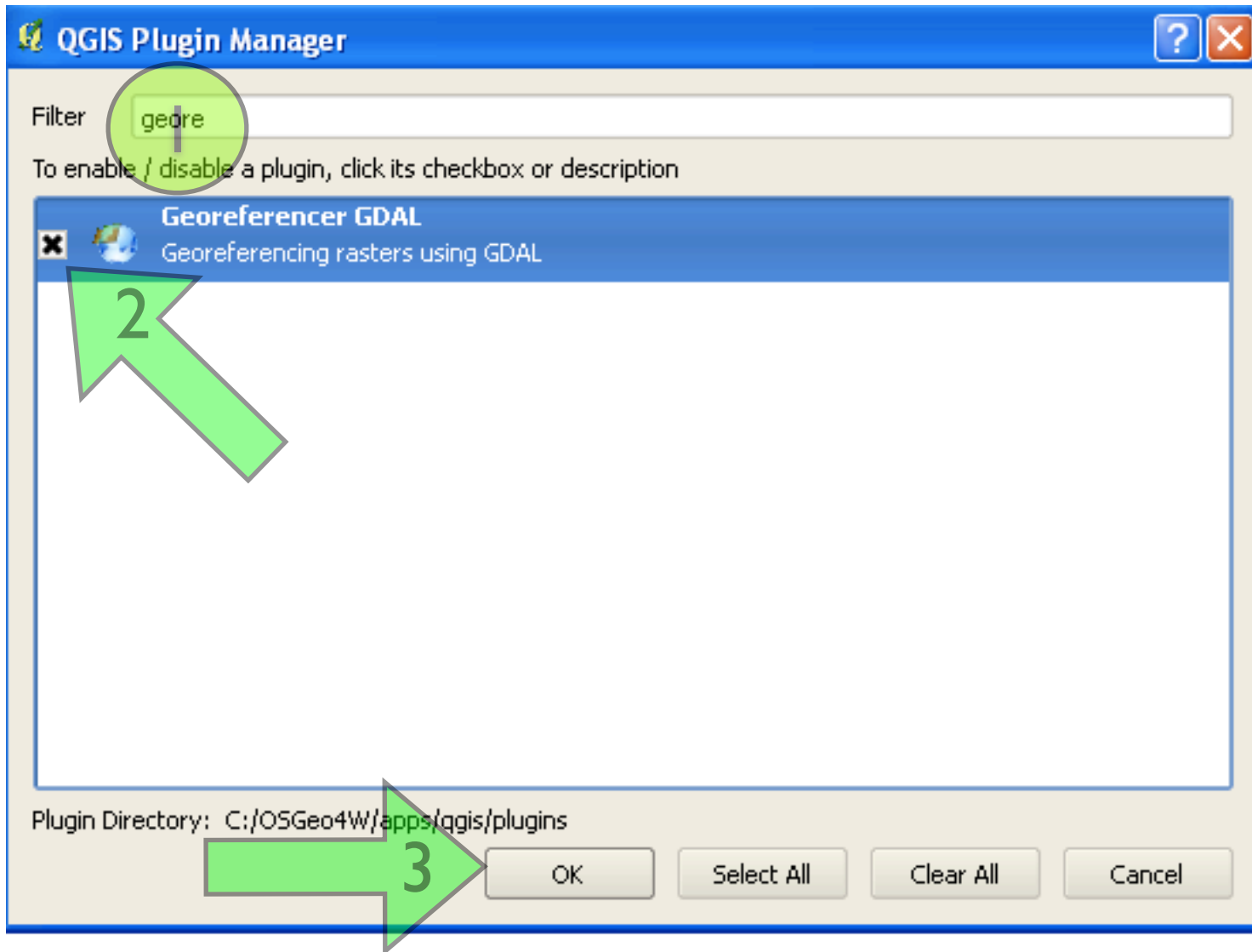













Plugins Raster Help

- Manage Plugins...
- Python Console
- Georeferencer
- OpenStreetMap

Georeferencer About

Georeferencer

File Edit View Settings Help



Open raster

Look in: maps

- NMC4453.jpg
- NMC23139.jpg

My Recent Documents

Desktop

My Documents

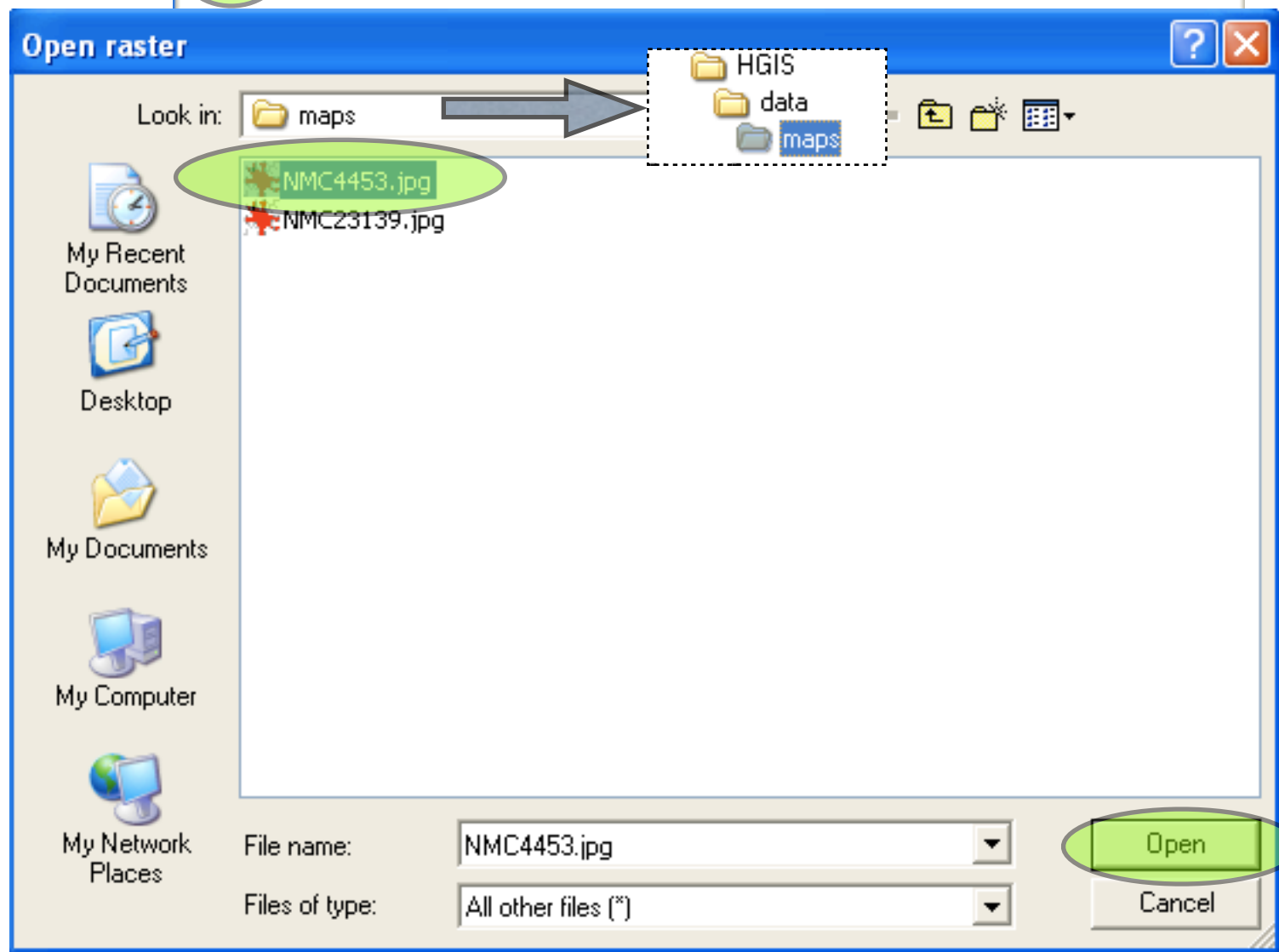
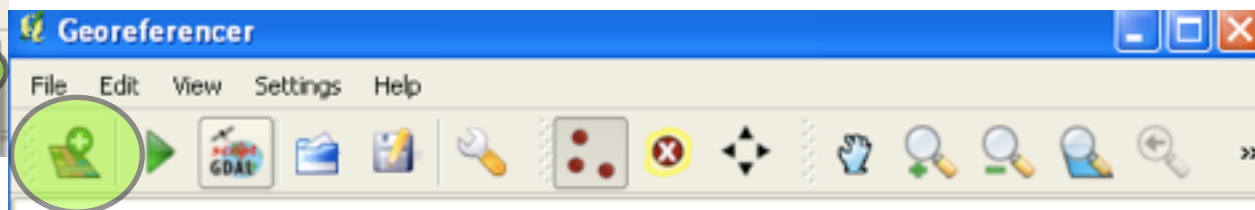
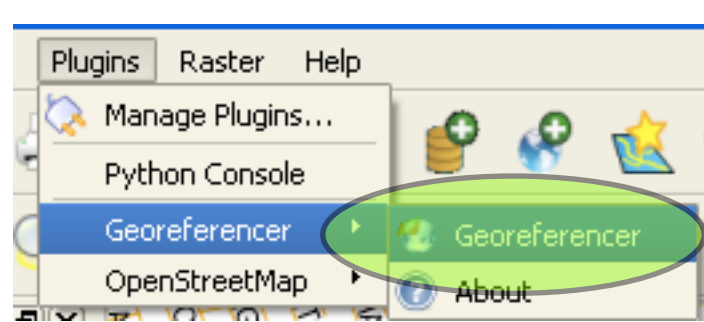
My Computer

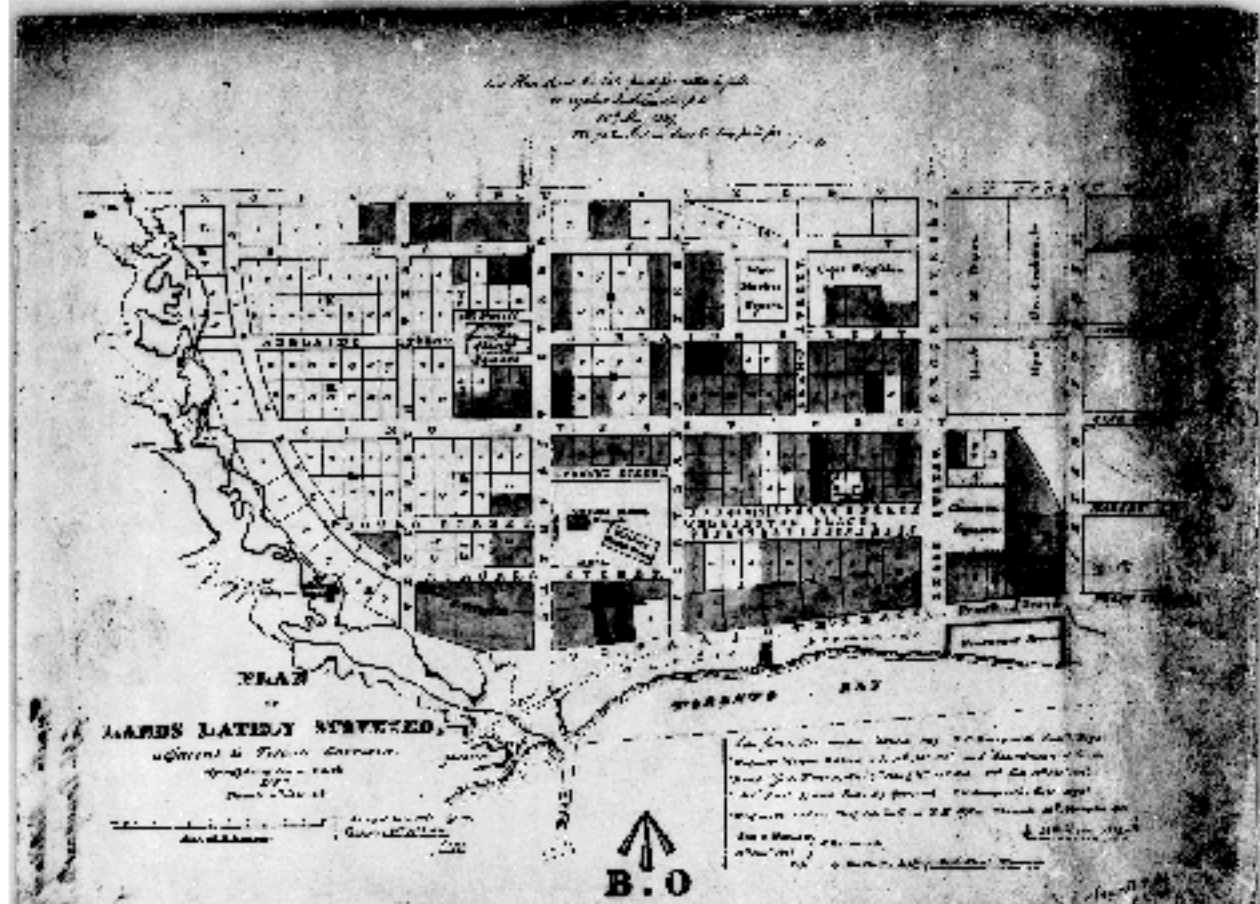
My Network Places

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Files of type: All other files (\*.\*)

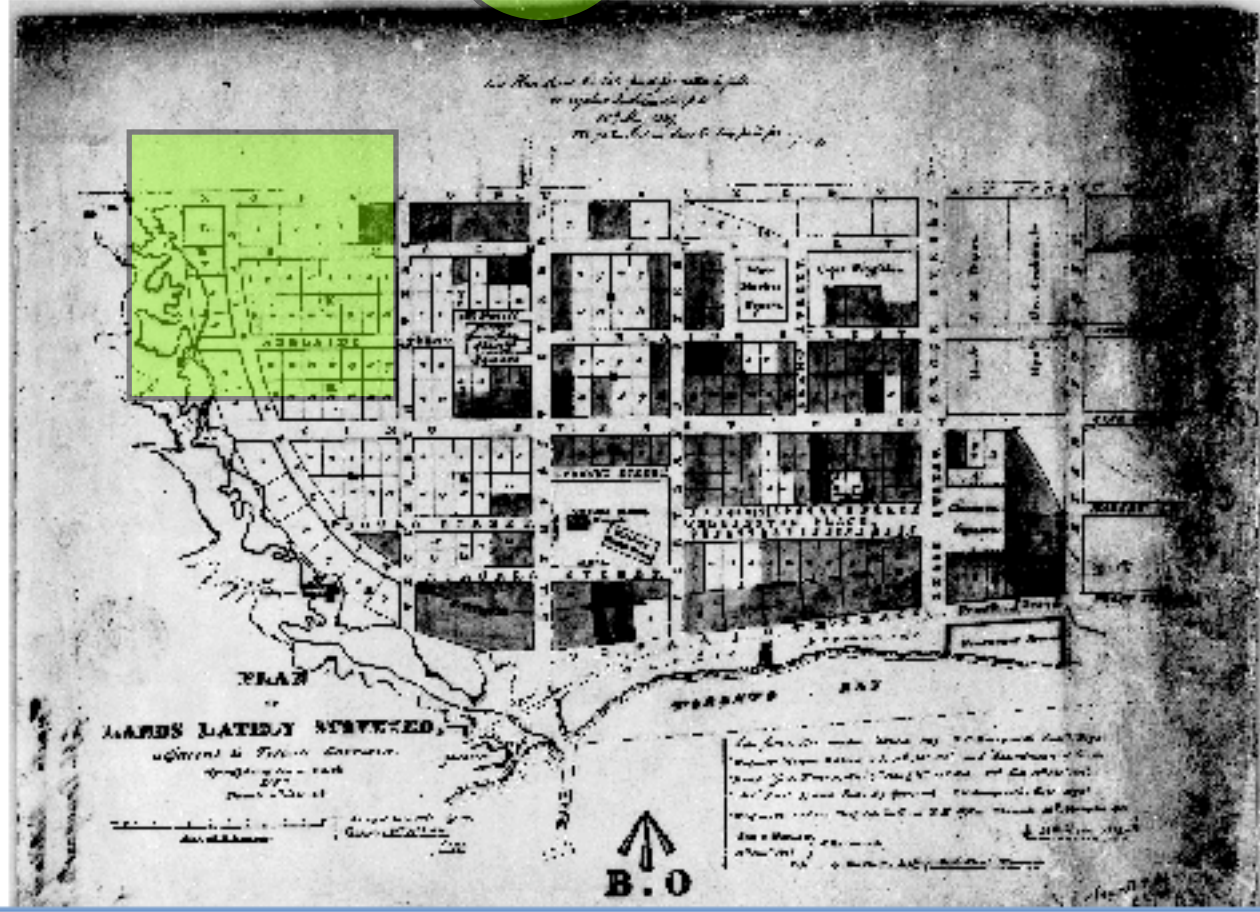
Open Cancel





GCP table

This map is from 1837 scale is 1inch 300 feet or about 1:3600



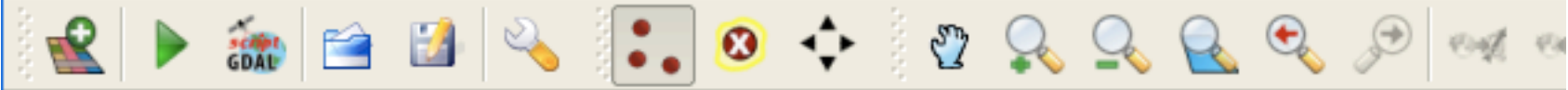
GCP table

This map is from 1837 scale is 1 inch 300 feet or about 1:3600



Georeferencer - NMC4453.jpg

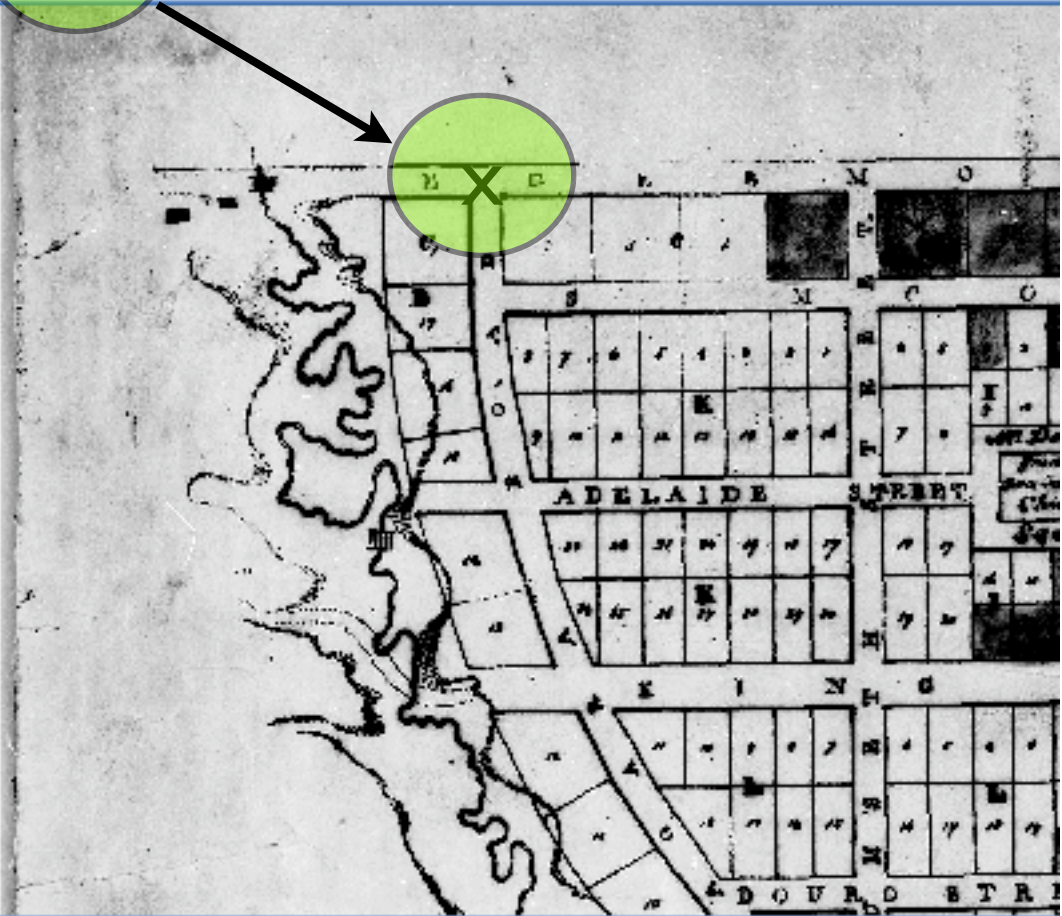
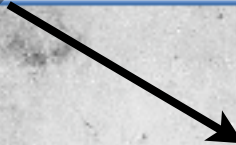
File Edit View Settings Help




GCP table

Georeferencer - NMC4453.jpg

File Edit View Settings Help



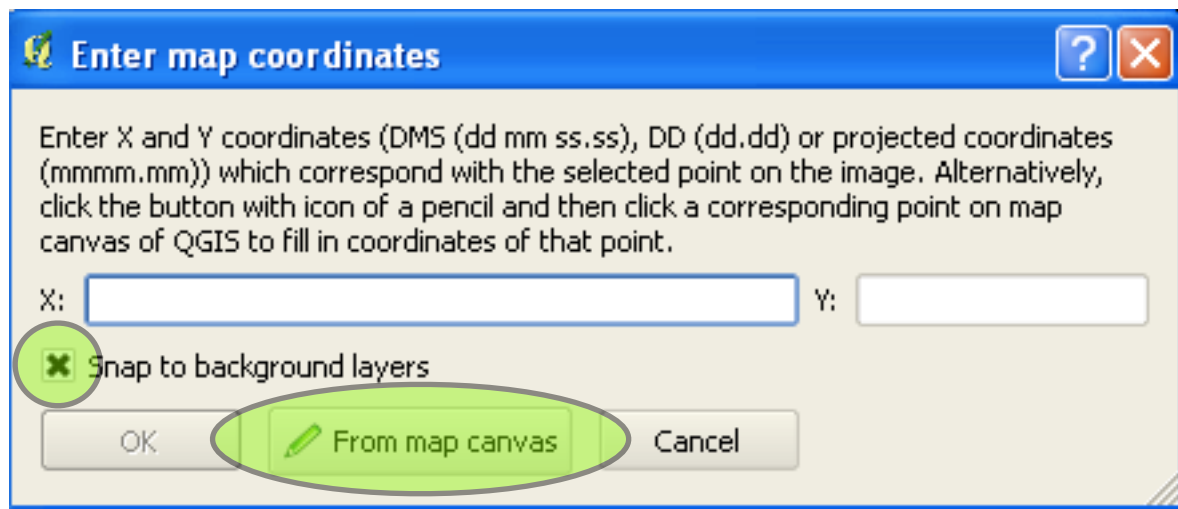
GCP table

 **Enter map coordinates** ? ✕

Enter X and Y coordinates (DMS (dd mm ss.ss), DD (dd.dd) or projected coordinates (mmmm.mm)) which correspond with the selected point on the image. Alternatively, click the button with icon of a pencil and then click a corresponding point on map canvas of QGIS to fill in coordinates of that point.

X:  Y:

Snap to background layers

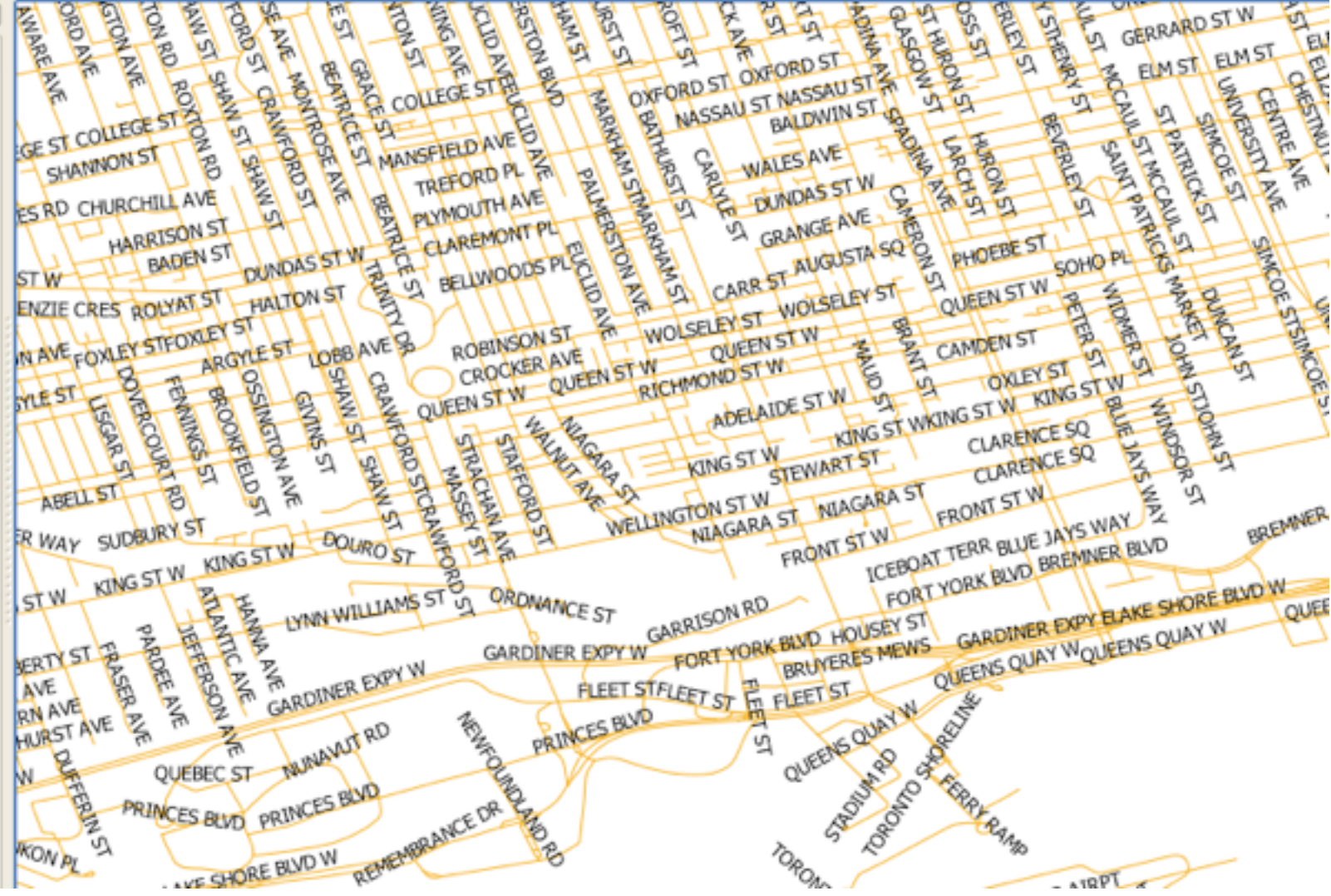




Layers [X]

ONrte

bingimage

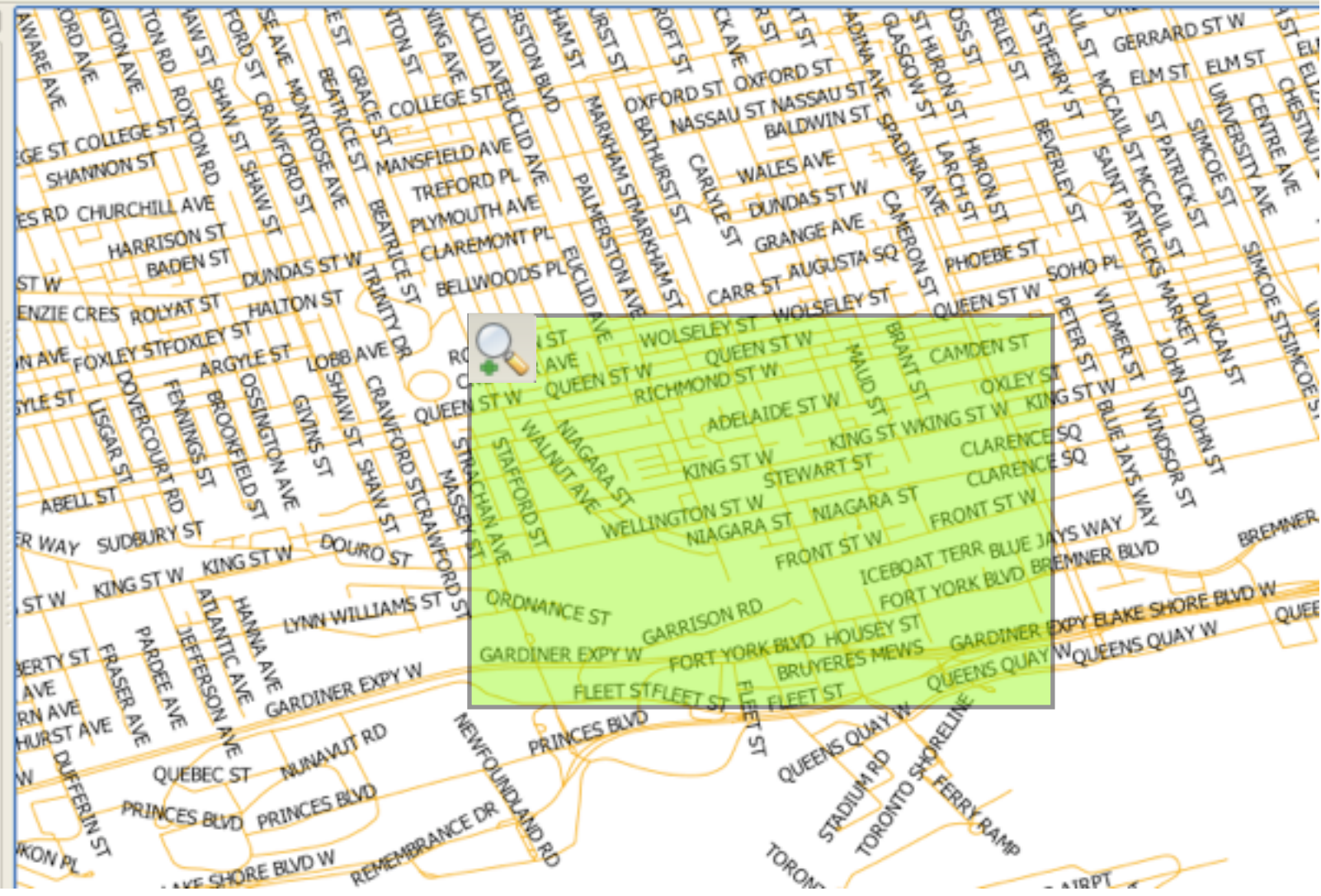


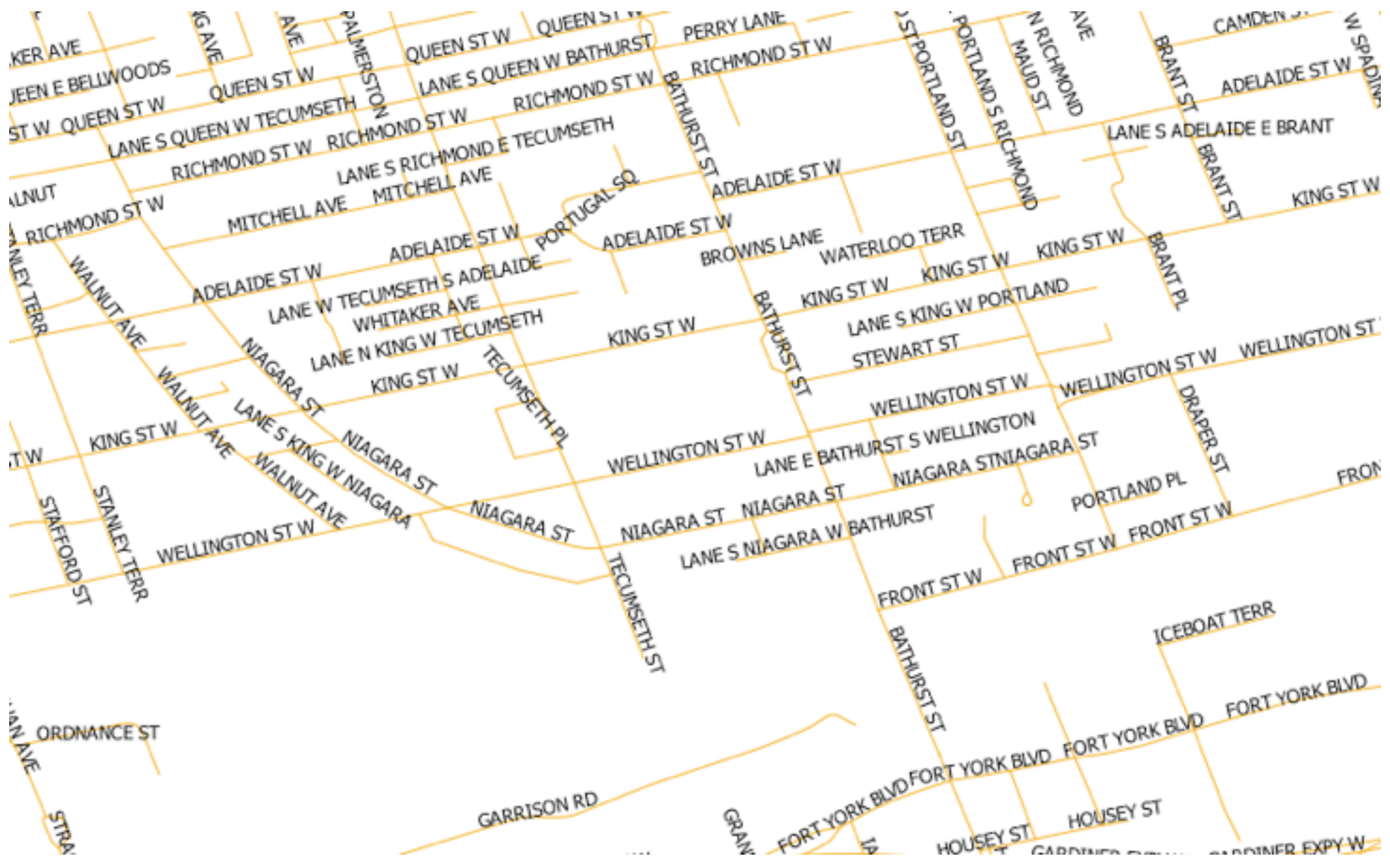


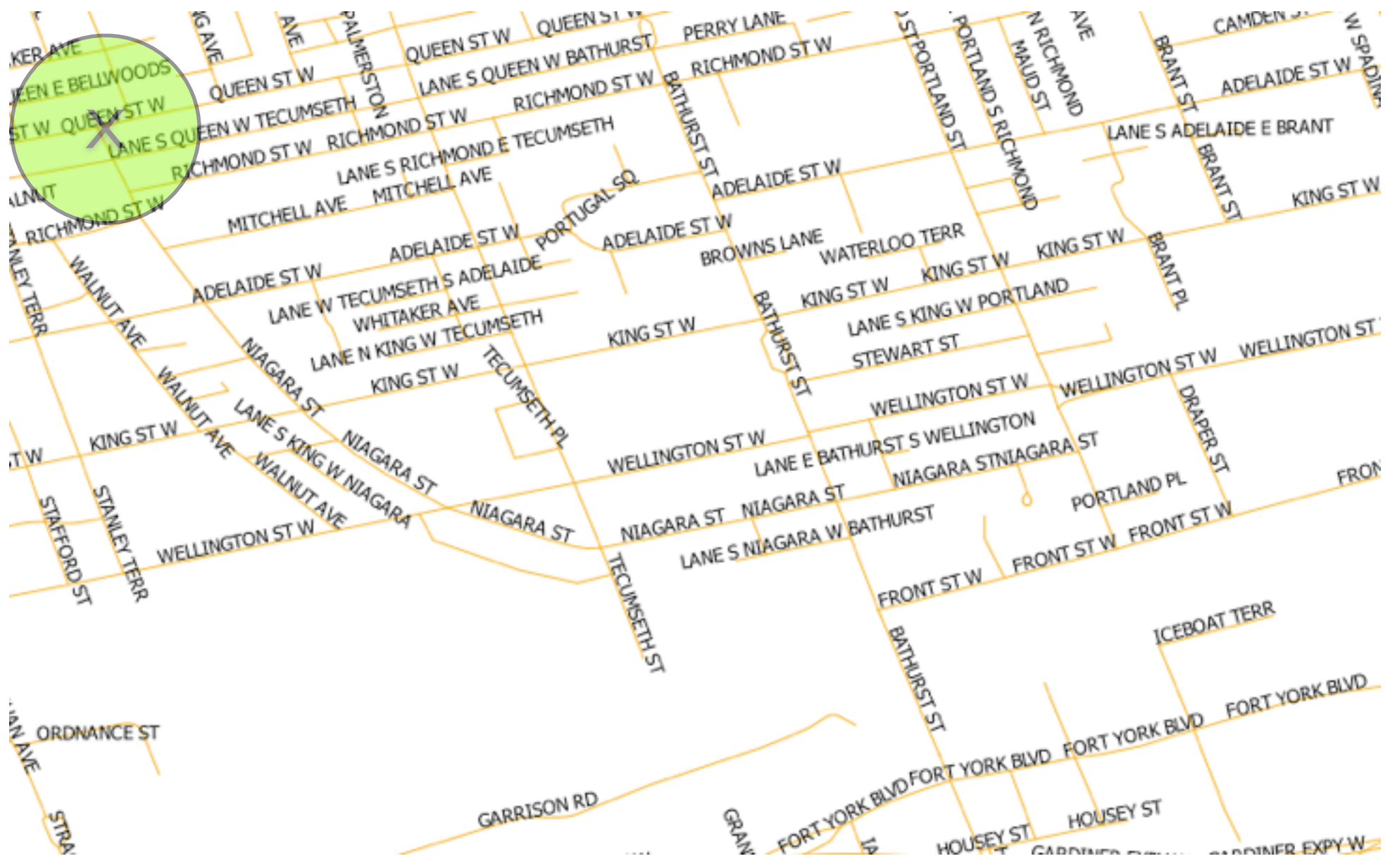
Layers [X]

ONrte


bingimage










 Enter map coordinates ? X

Enter X and Y coordinates (DMS (dd mm ss.ss), DD (dd.dd) or projected coordinates (mmm.mm)) which correspond with the selected point on the image. Alternatively, click the button with icon of a pencil and then click a corresponding point on map canvas of QGIS to fill in coordinates of that point.

X:  Y:

Snap to background layers

 Enter map coordinates ? X

Enter X and Y coordinates (DMS (dd mm ss.ss), DD (dd.dd) or projected coordinates (mmm.mm)) which correspond with the selected point on the image. Alternatively, click the button with icon of a pencil and then click a corresponding point on map canvas of QGIS to fill in coordinates of that point.

X:  Y:

Snap to background layers

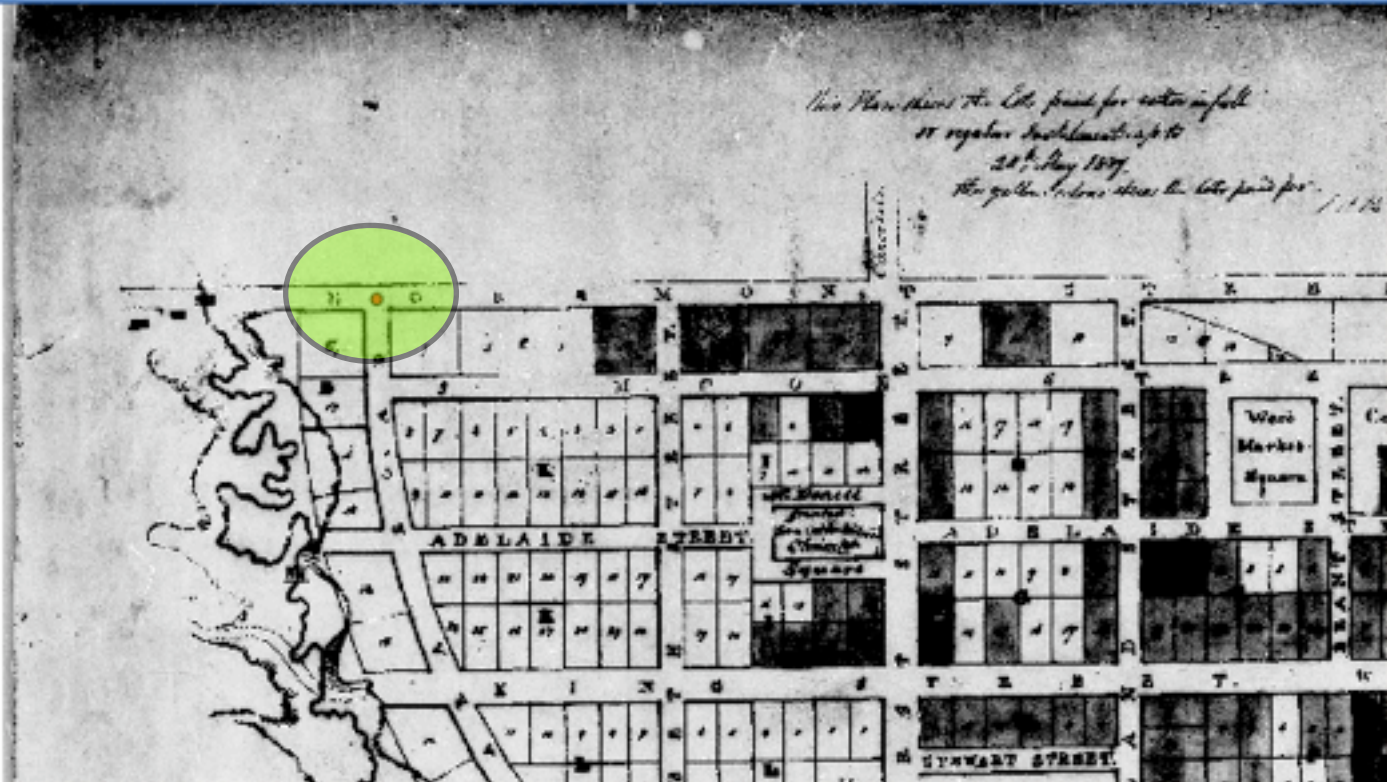
Georeferencer - NMC4453.jpg

File Edit View Settings Help



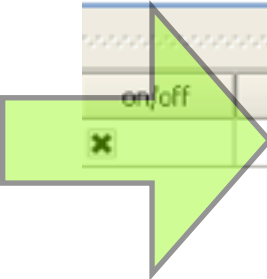
GCP table

on/off	id	srcX	srcY	dstX	dstY	dX[pixels]	dY[pixels]	residual[pixels]
<input checked="" type="checkbox"/>	0	715.08	644.90	-79.41	43.65	0.00	0.00	0.00



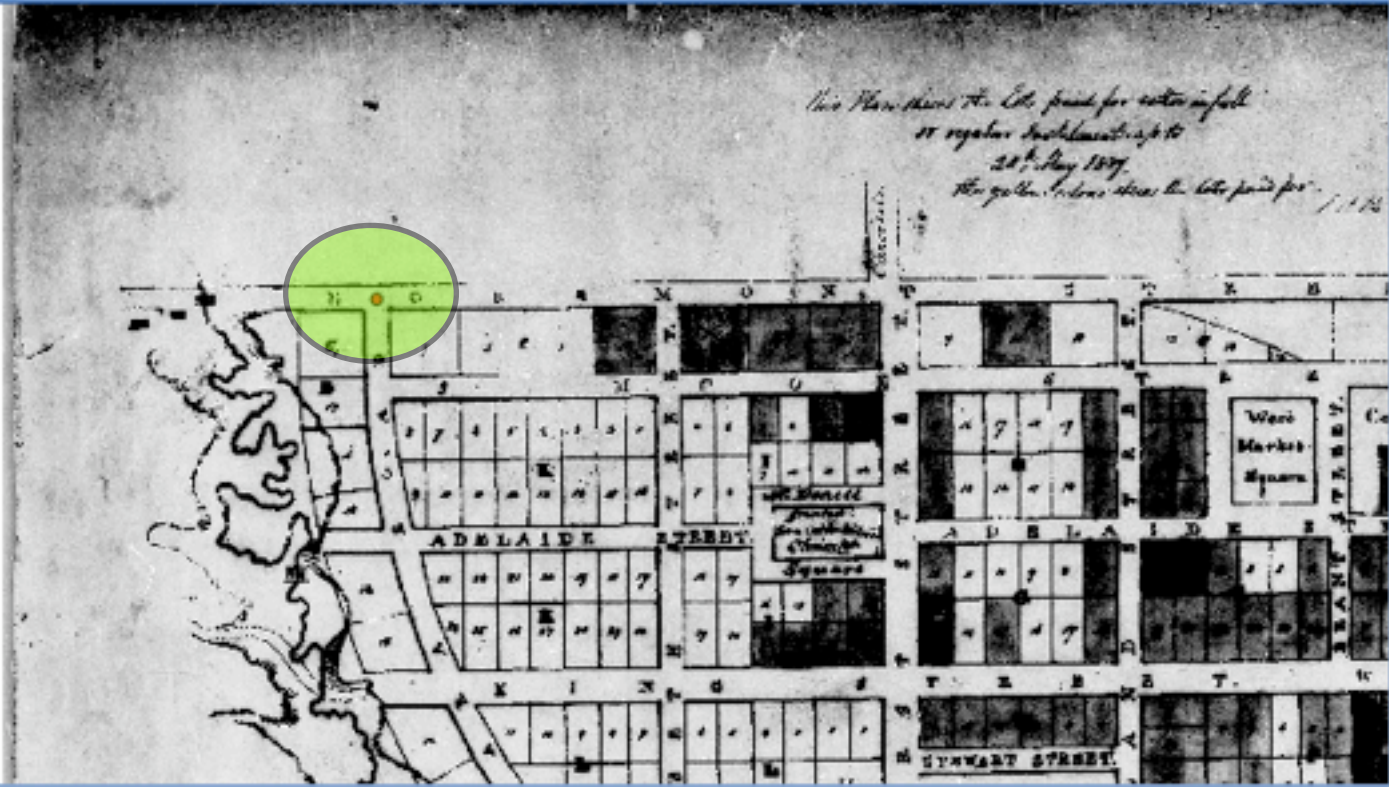
GCP table

on/off	id	srcX	srcY	dstX	dstY	dX[pixels]	dY[pixels]	residual[pixels]
<input checked="" type="checkbox"/>	0	715.08	644.90	-79.41	43.65	0.00	0.00	0.00



Georeferencer - NMC4453.jpg

File Edit View Settings Help



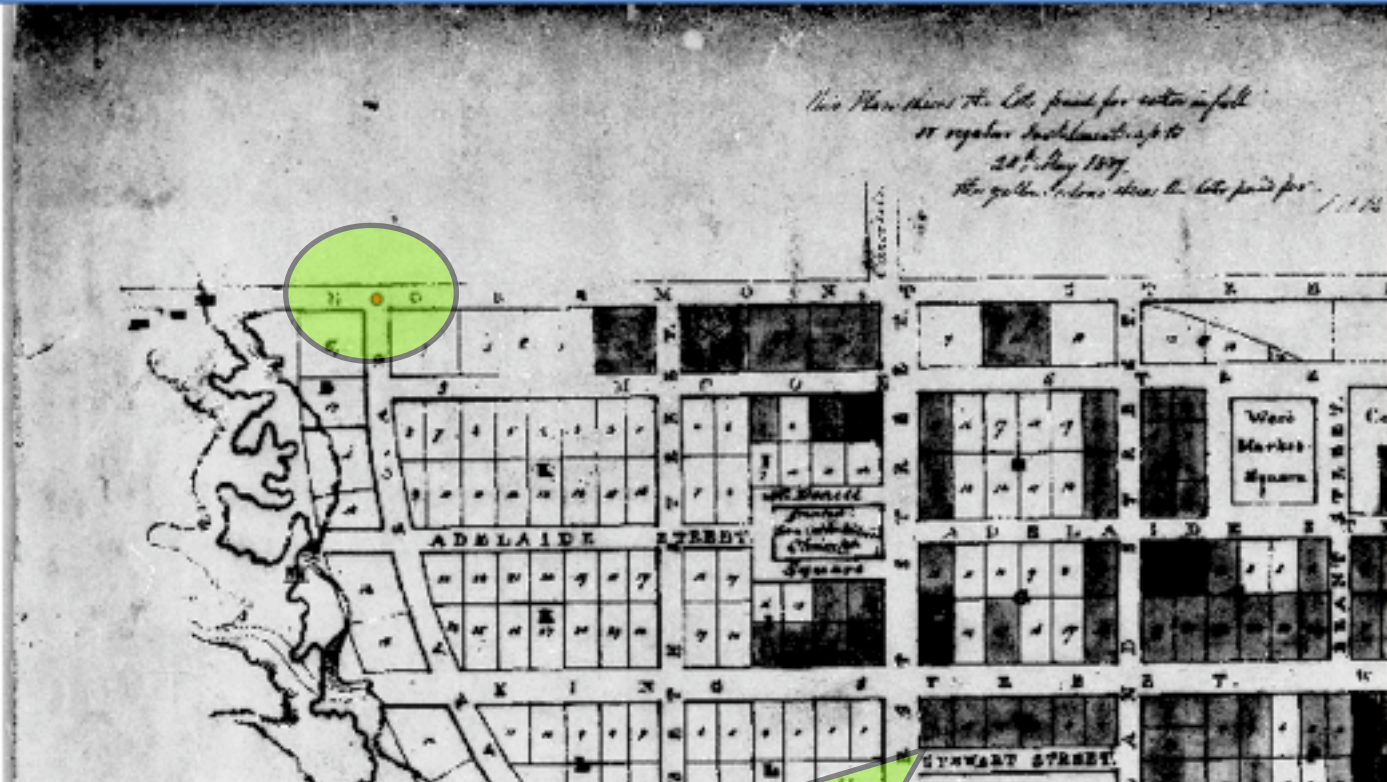
GCP table

on/off	id	srcX	srcY	dstX	dstY	dX[pixels]	dY[pixels]	residual[pixels]
<input checked="" type="checkbox"/>	0	715.08	644.90	-79.41	43.65	0.00	0.00	0.00

Double-Click

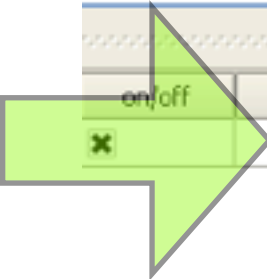
Georeferencer - NMC4453.jpg

File Edit View Settings Help

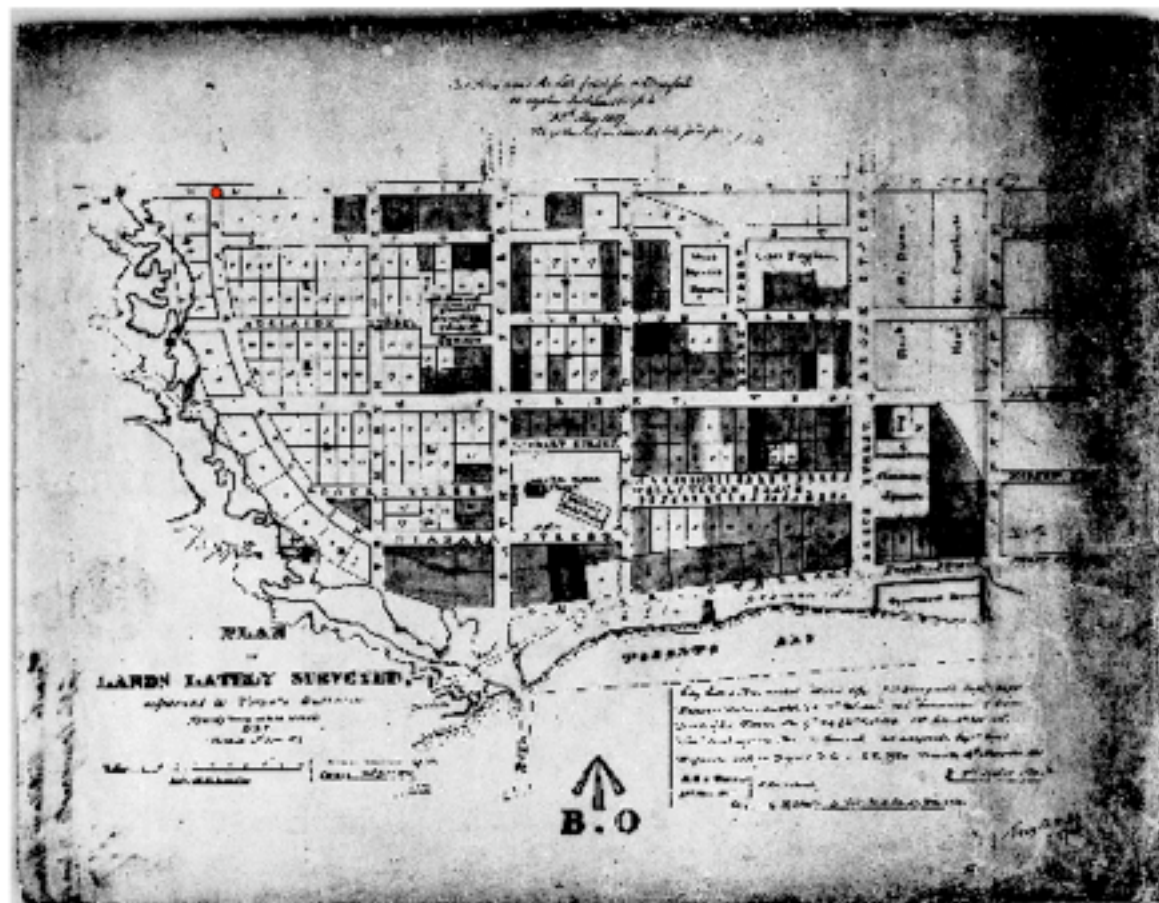


GCP table

on/off	id	srcX	srcY	dstX	dstY	dX[pixels]	dY[pixels]	residual[pixels]
<input checked="" type="checkbox"/>	0	715.08	644.90	-79.41	43.65	0.00	0.00	0.00

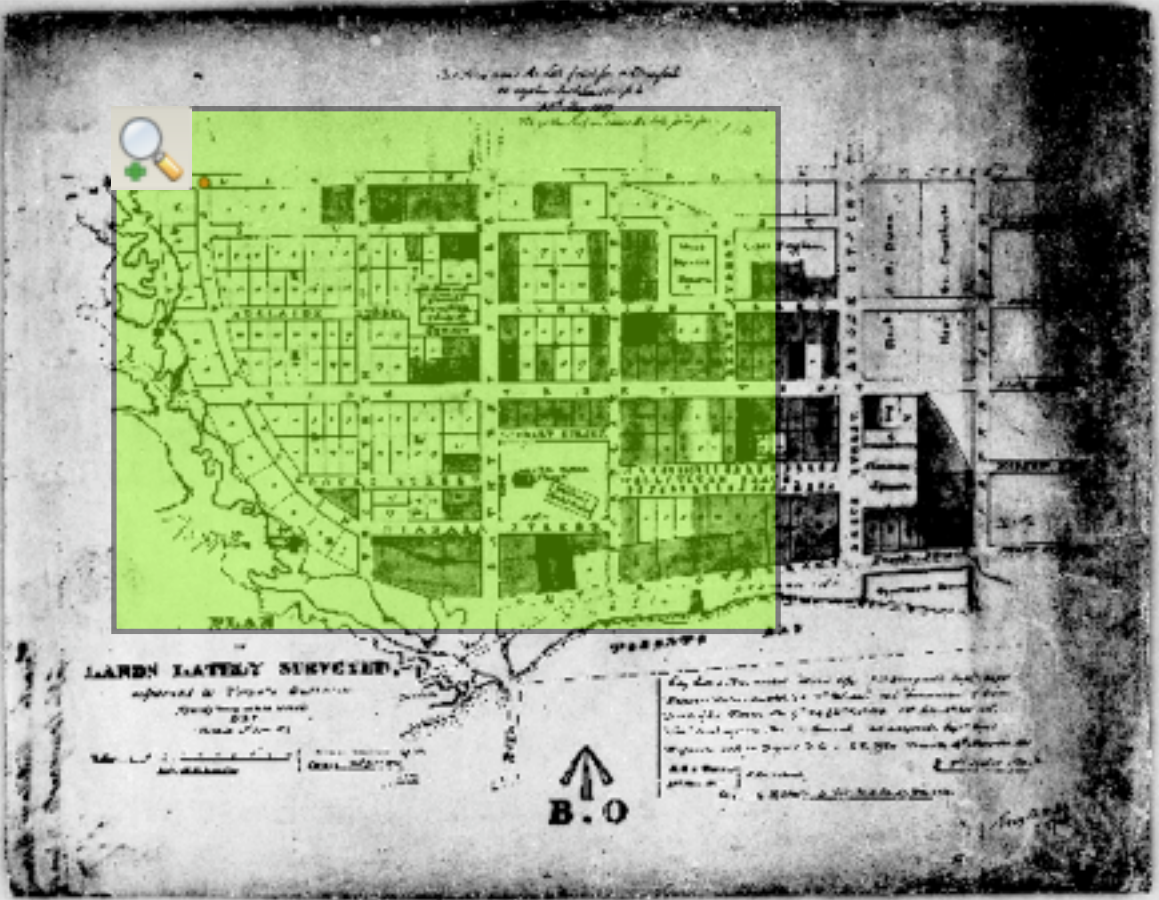
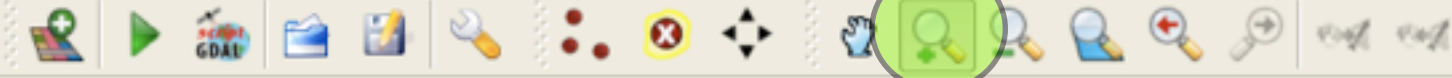


Double-Click



GCP table

on/off	id	srcX	srcY	ds
<input checked="" type="checkbox"/>	0	715.08	644.90	-

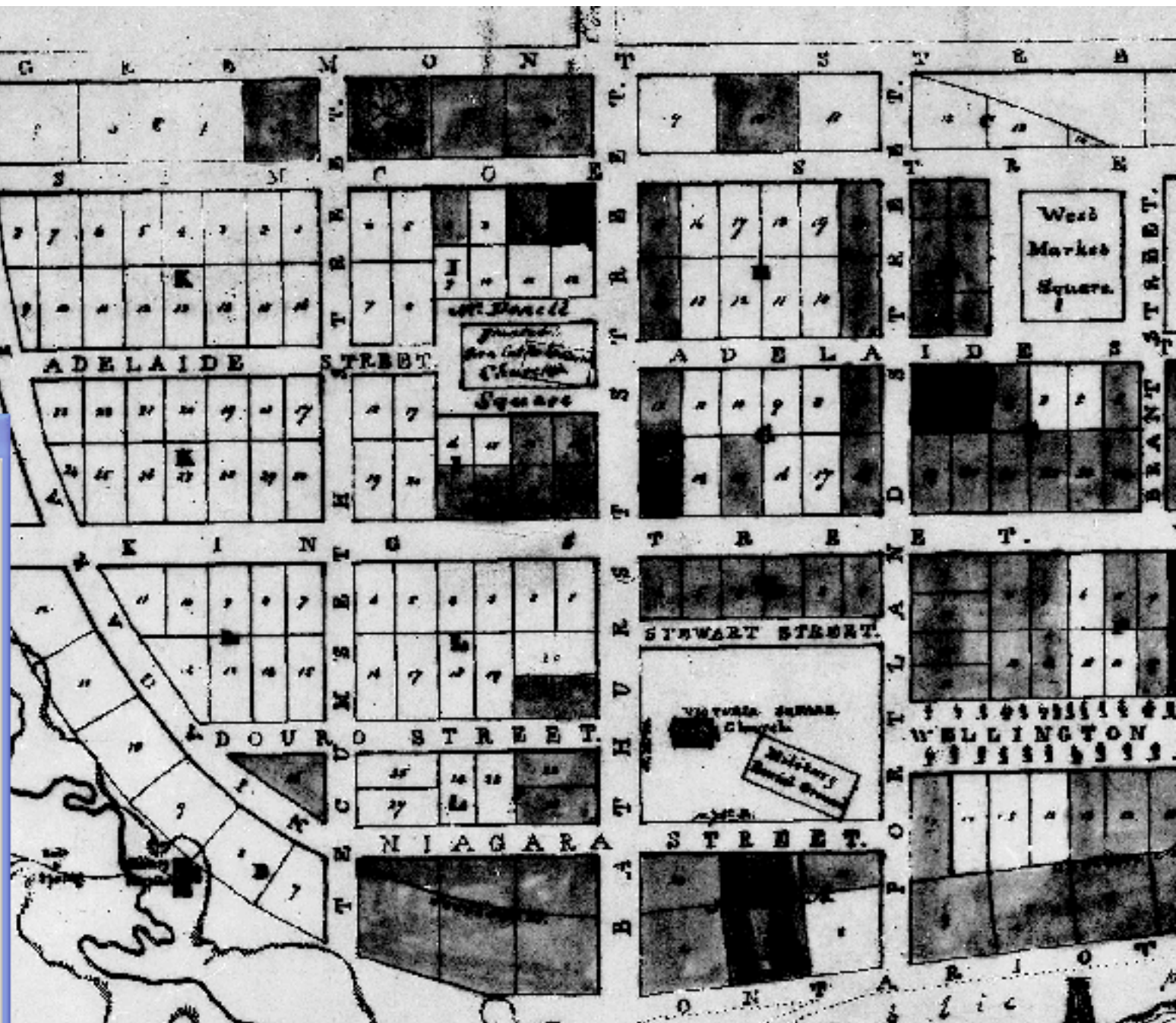


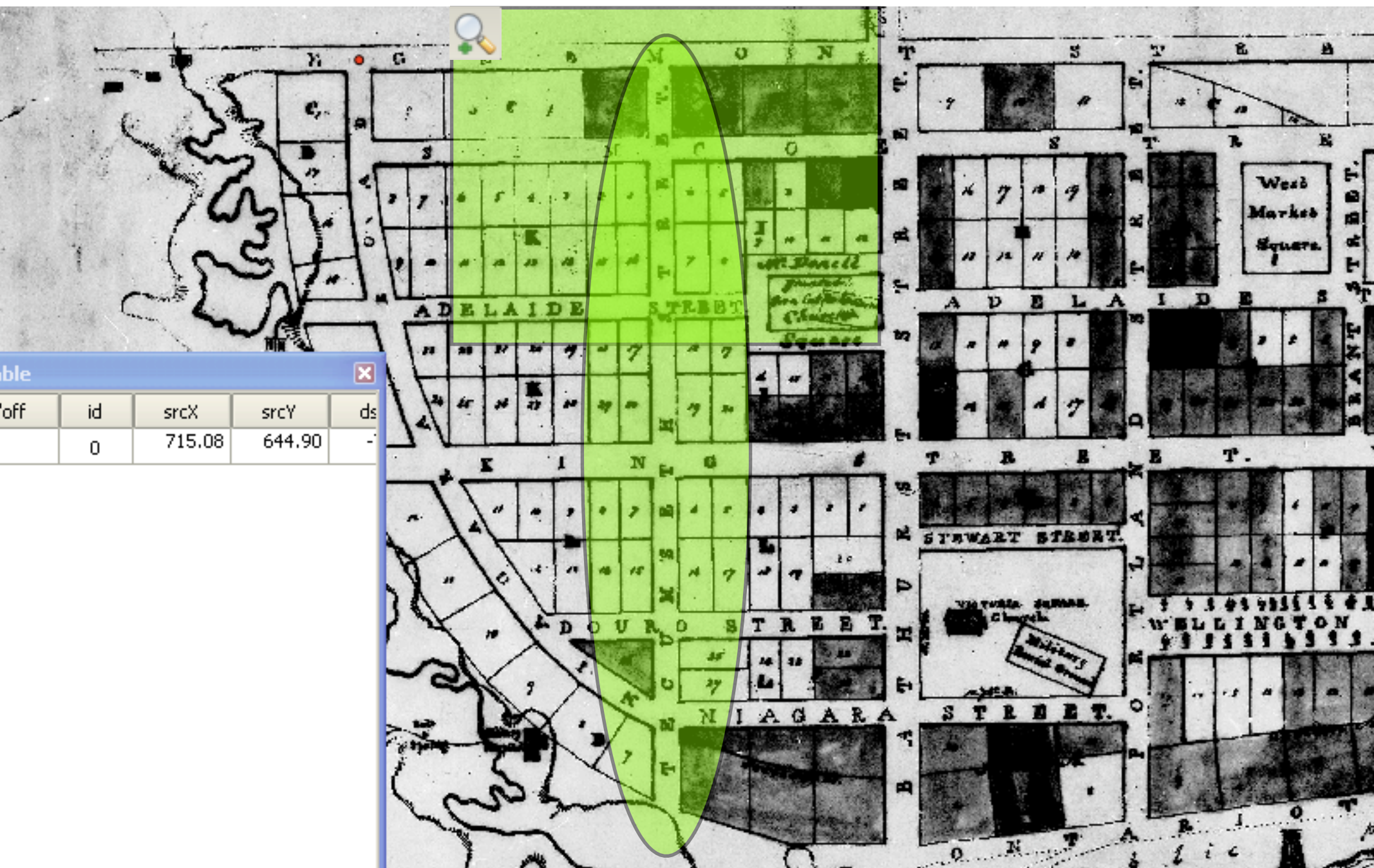
GCP table

on/off	id	srcX	srcY	ds
<input checked="" type="checkbox"/>	0	715.08	644.90	-



off	id	srcX	srcY	ds
0		715.08	644.90	





id	srcX	srcY
0	715.08	644.90

Georeferencer - NMC4453.jpg

File Edit View Settings Help



GCP table

on/off	id	srcX	srcY	dstX	dstY
<input checked="" type="checkbox"/>	0	715.08	644.90		

Enter map coordinates

Enter X and Y coordinates (DMS (dd mm ss.ss), DD (dd.dd) or projected coordinates (mmmm.mm)) which correspond with the selected point on the image. Alternatively, click the button with icon of a pencil and then click a corresponding point on map canvas of QGIS to fill in coordinates of that point.

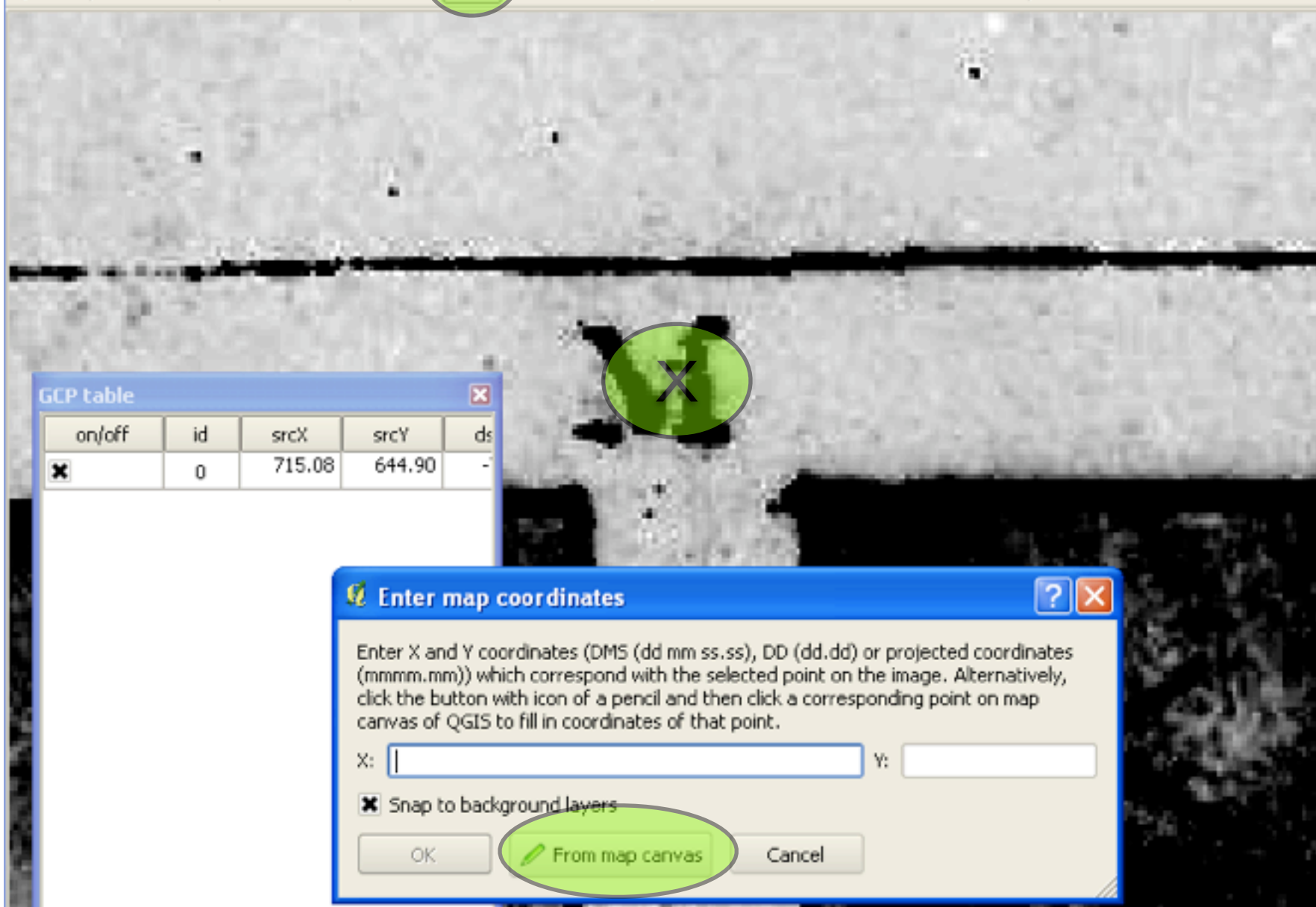
X:  Y:

Snap to background layers

OK

 From map canvas

Cancel



GCP table

on/off	id	srcX	srcY	dstX	dstY
<input checked="" type="checkbox"/>	0	715.08	644.90		

**Enter map coordinates**

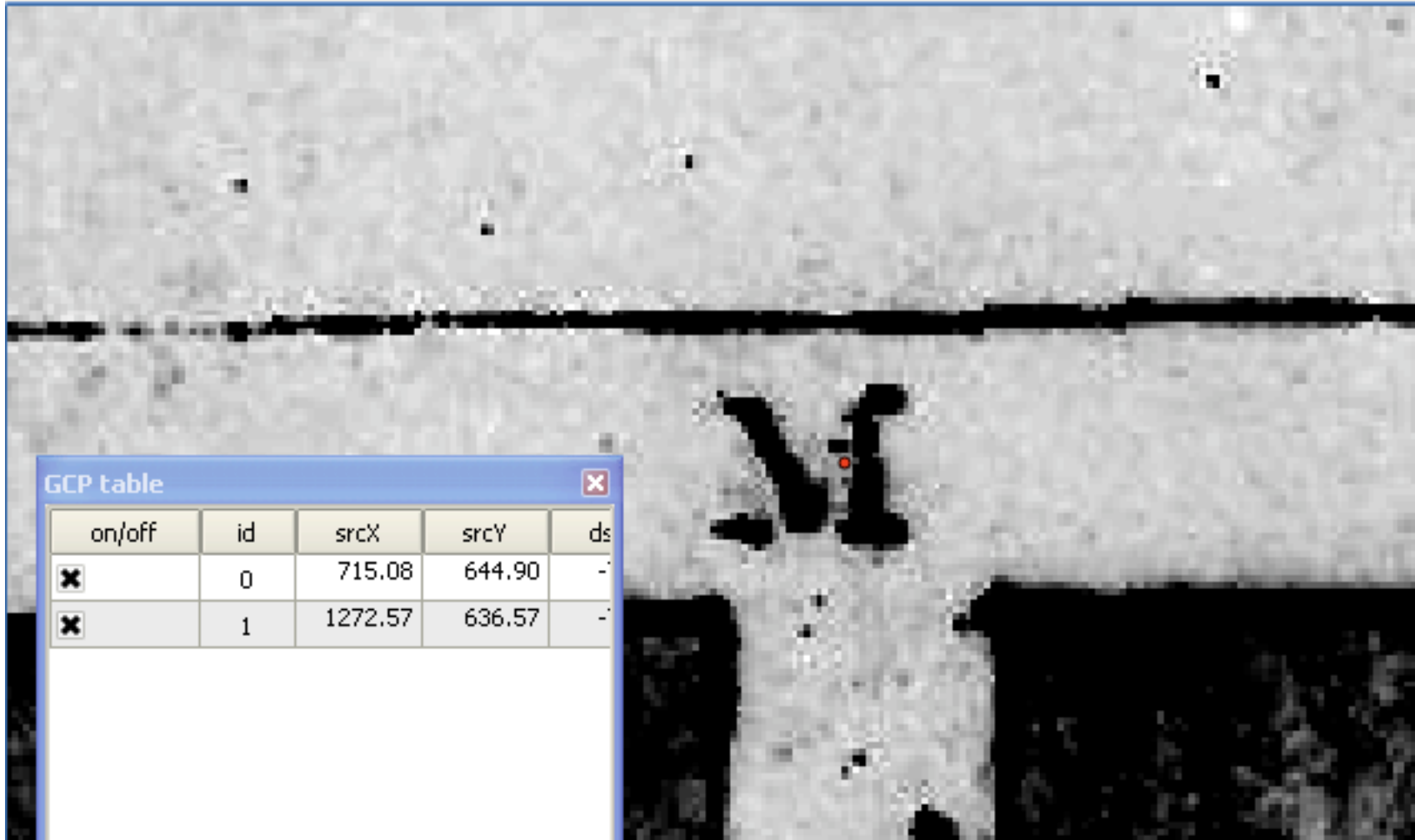
Enter X and Y coordinates (DMS (dd mm ss.ss), DD (dd.dd) or projected coordinates (mmmm.mm)) which correspond with the selected point on the image. Alternatively, click the button with icon of a pencil and then click a corresponding point on map canvas of QGIS to fill in coordinates of that point.

X:  Y:

Snap to background layers

Georeferencer - NMC4453.jpg

File Edit View Settings Help



GCP table

on/off	id	srcX	srcY	dstX	dstY
<input checked="" type="checkbox"/>	0	715.08	644.90	-	-
<input checked="" type="checkbox"/>	1	1272.57	636.57	-	-



GCP table

on/off	id	srcX	srcY	dstX	dstY
<input checked="" type="checkbox"/>	0	715.08	644.90	-	-
<input checked="" type="checkbox"/>	1	1272.57	636.57	-	-

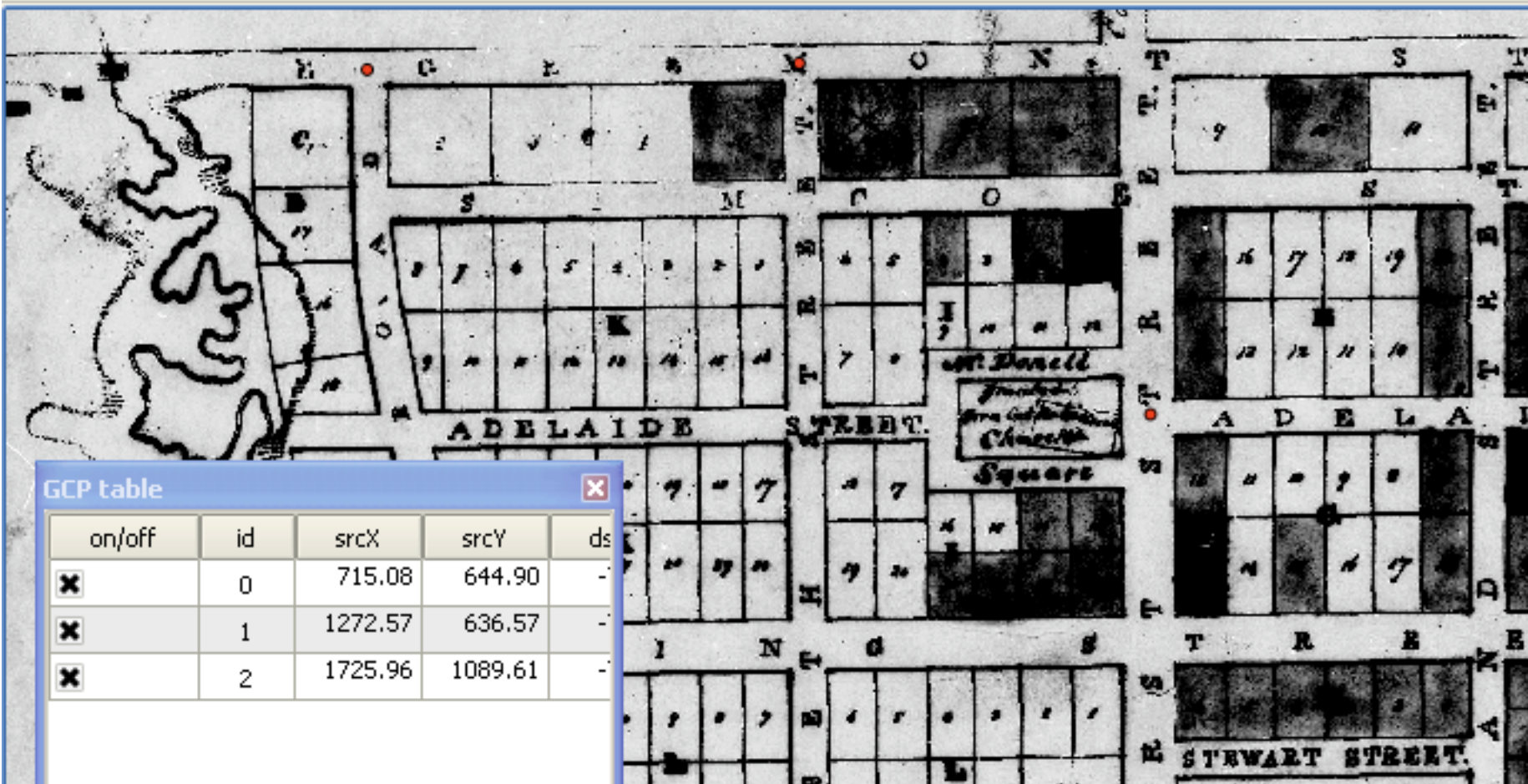


GCP table

on/off	id	srcX	srcY	dstX	dstY
<input checked="" type="checkbox"/>	0	715.08	644.90		
<input checked="" type="checkbox"/>	1	1272.57	636.57		

# Georeferencer - NMC4453.jpg

File Edit View Settings Help



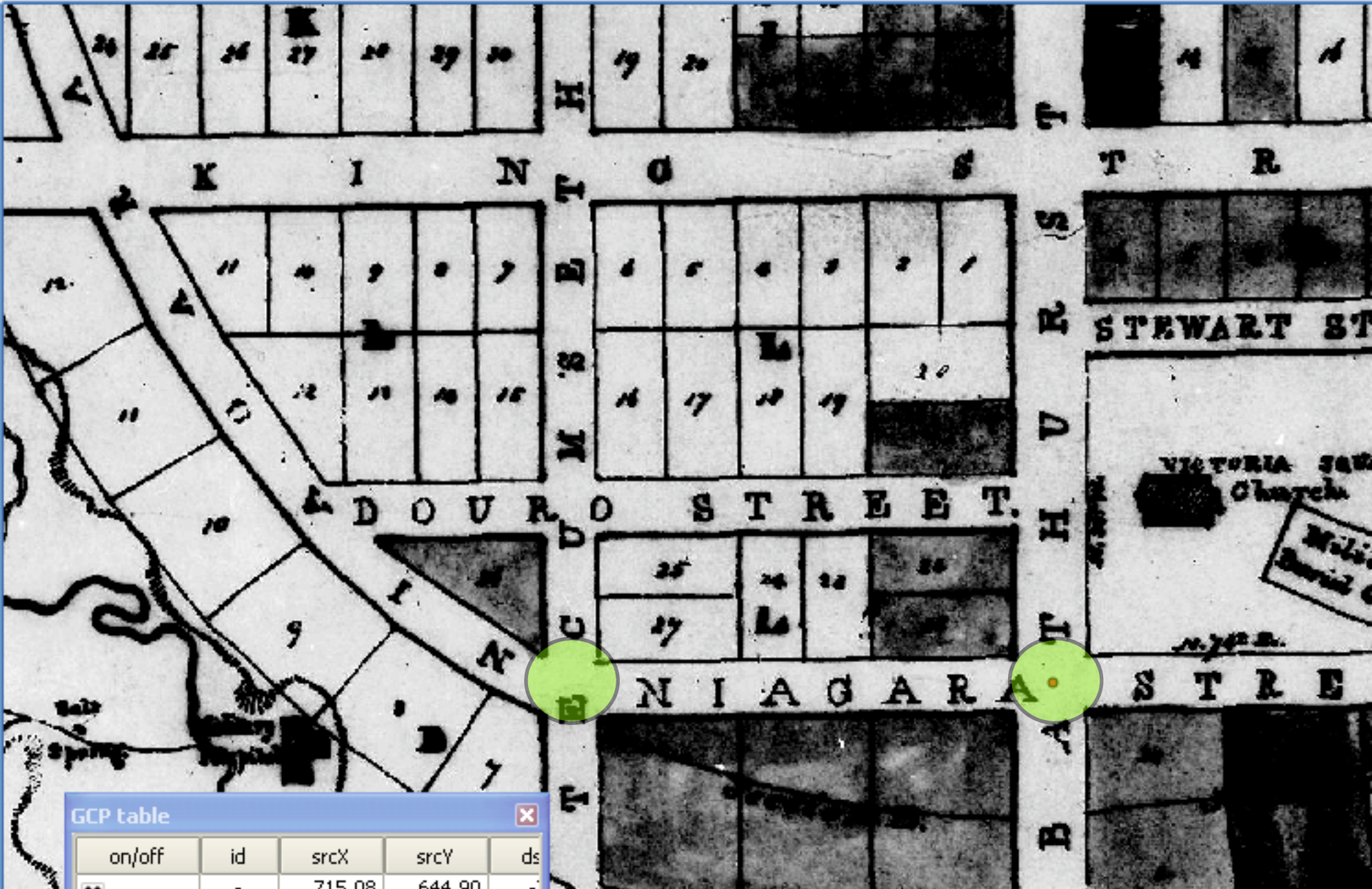
on/off	id	srcX	srcY	dstX	dstY
<input checked="" type="checkbox"/>	0	715.08	644.90	-	-
<input checked="" type="checkbox"/>	1	1272.57	636.57	-	-
<input checked="" type="checkbox"/>	2	1725.96	1089.61	-	-





GCP table

on/off	id	srcX	srcY	ds
<input type="checkbox"/>	1	715.08	644.90	-



GCP table

on/off	id	srcX	srcY	ds
		715.08	644.90	

# Georeferencer - NMC4453.jpg

File Edit View Settings Help

- Open raster Ctrl+O
- Start georeferencing Ctrl+G
- Generate GDAL script Ctrl+C
- Load GCP points Ctrl+L
- Save GCP points as... Ctrl+S
- Quit Ctrl+Q



on/off	id	srcX	srcY	dstX	dstY
<input checked="" type="checkbox"/>	0	715.08	644.90	-	-
<input checked="" type="checkbox"/>	1	1272.57	636.57	-	-
<input checked="" type="checkbox"/>	2	1725.96	1089.61	-	-
<input checked="" type="checkbox"/>	3	1727.53	1857.67	-	-
<input checked="" type="checkbox"/>	4	1288.09	1859.35	-	-

Save GCP points



Save in: maps



- My Recent Documents
- Desktop
- My Documents
- My Computer
- My Network Places

NMC4453.jpg.points

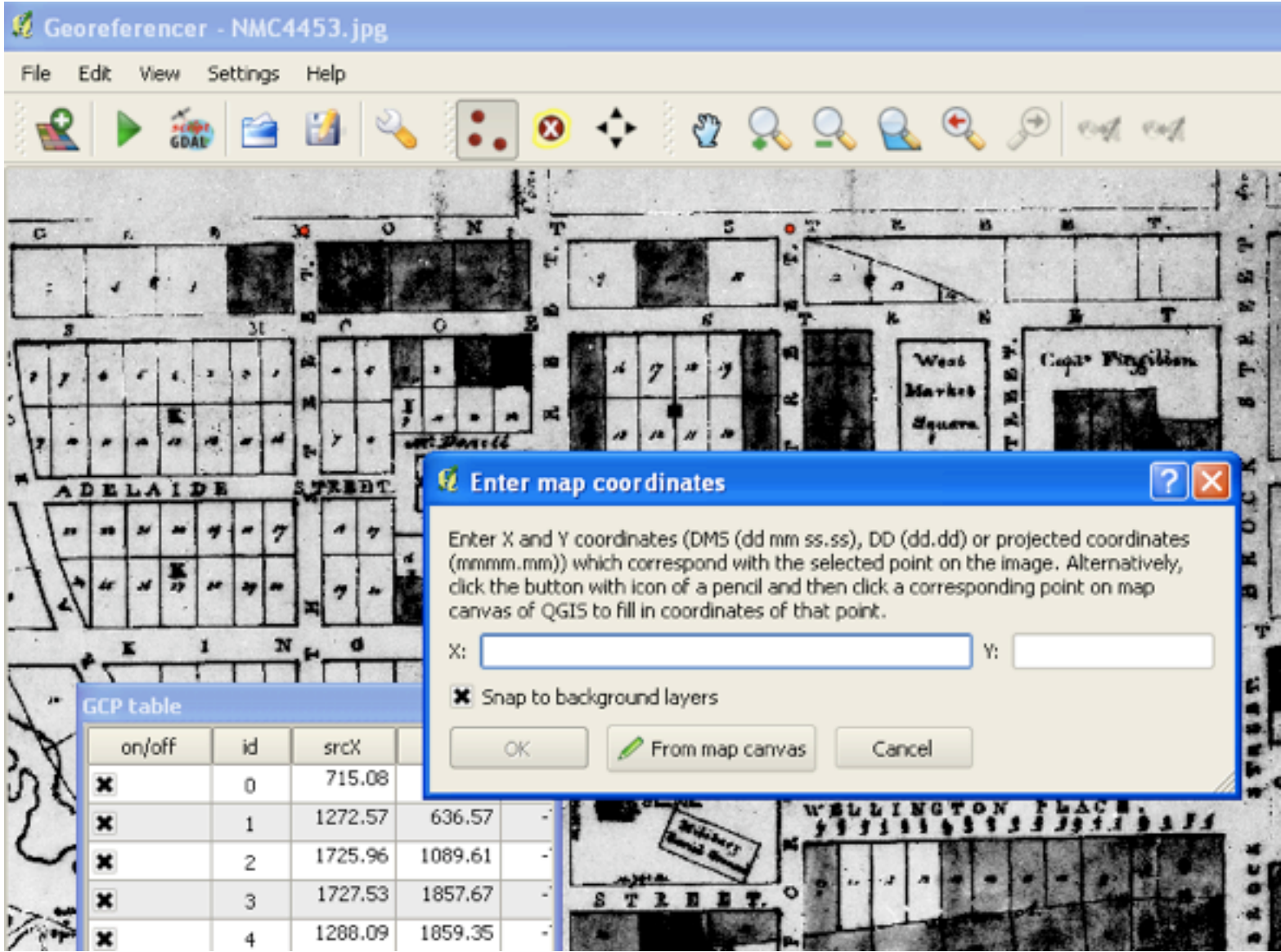
Type: POINTS File  
Size: 448 bytes  
Date Modified: 6/21/2011 3:30 PM

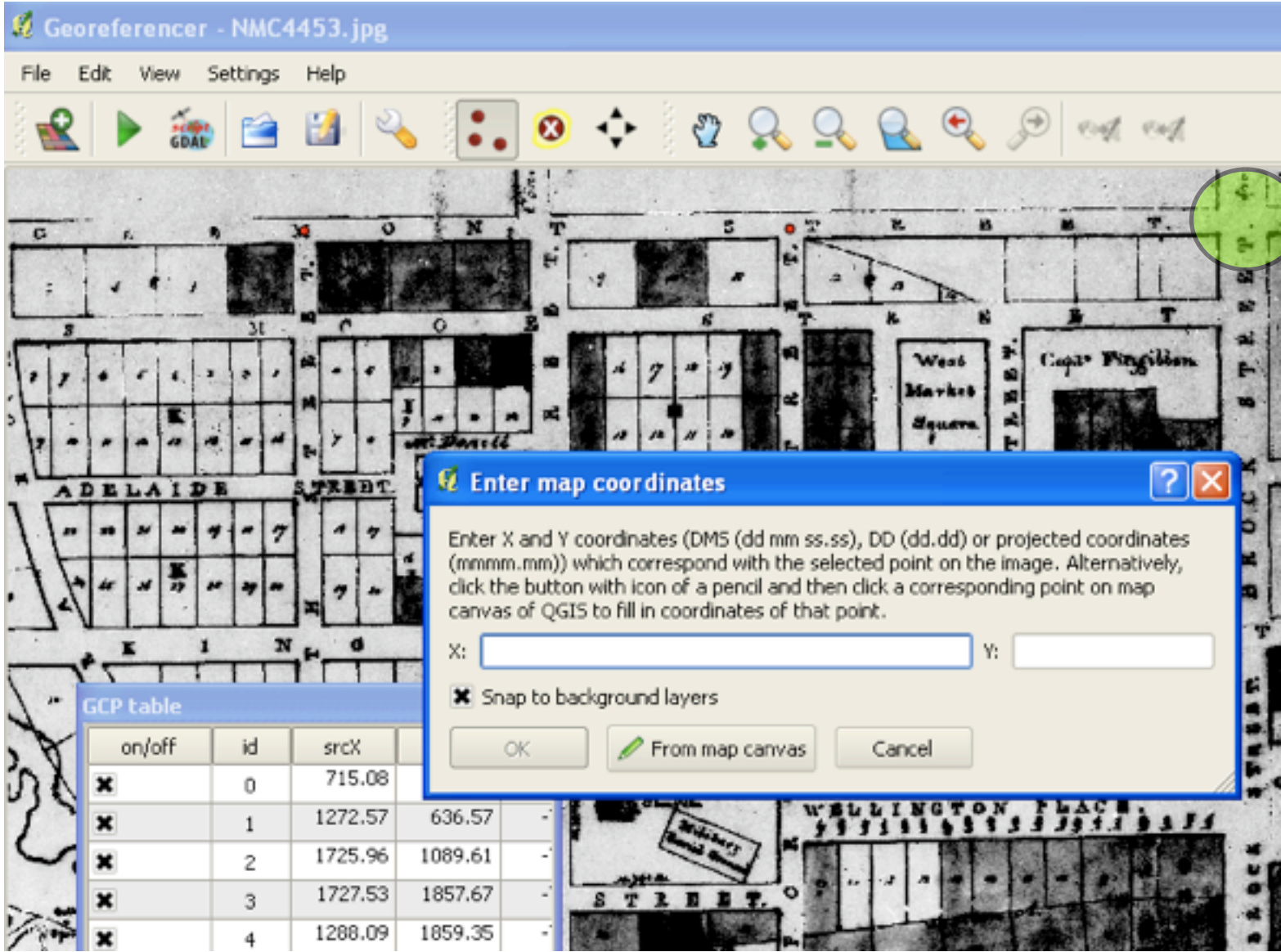
File name: NMC4453.jpg.points

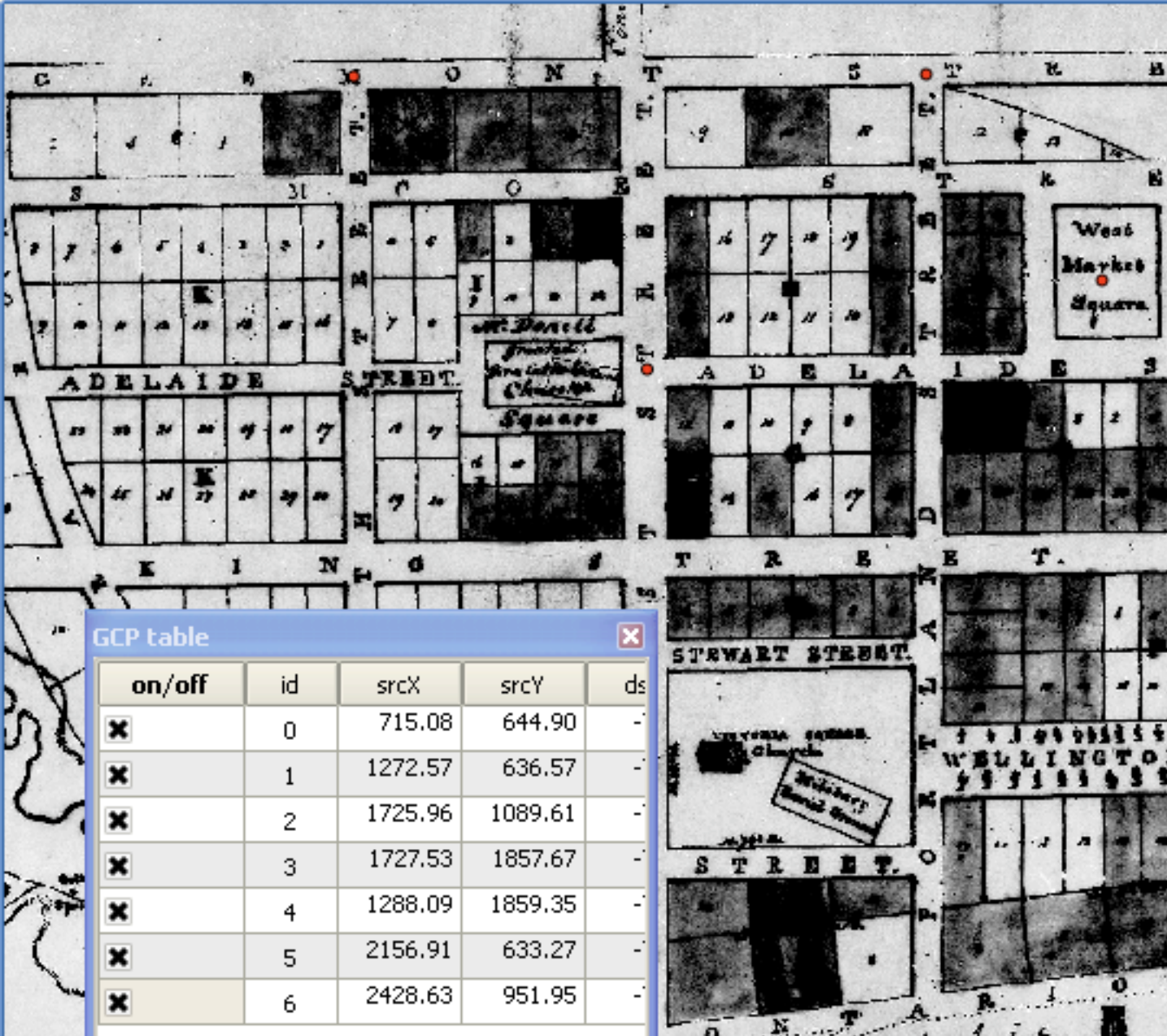
Save as type: GCP file (\*.points)

Save

Cancel

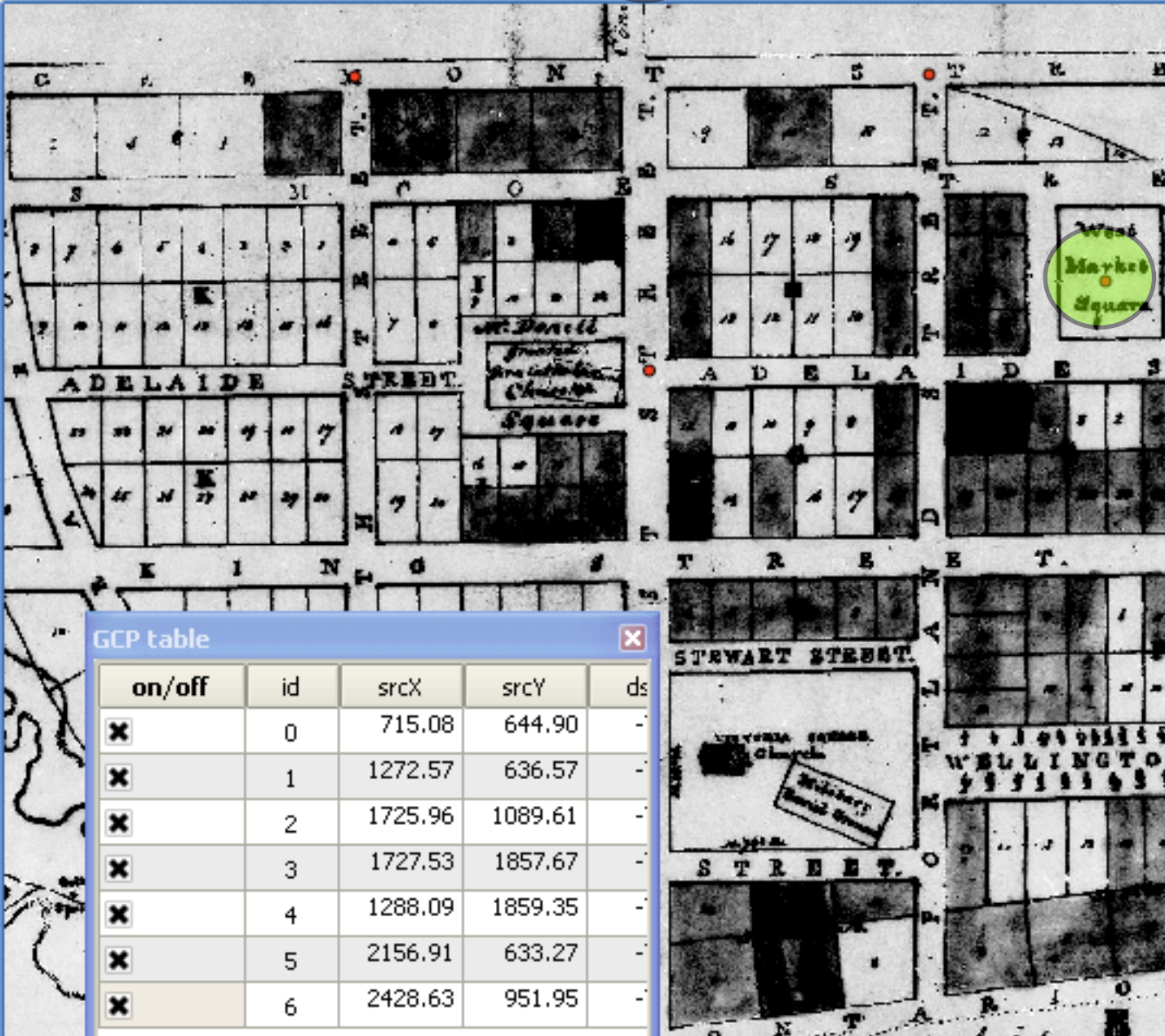






GCP table

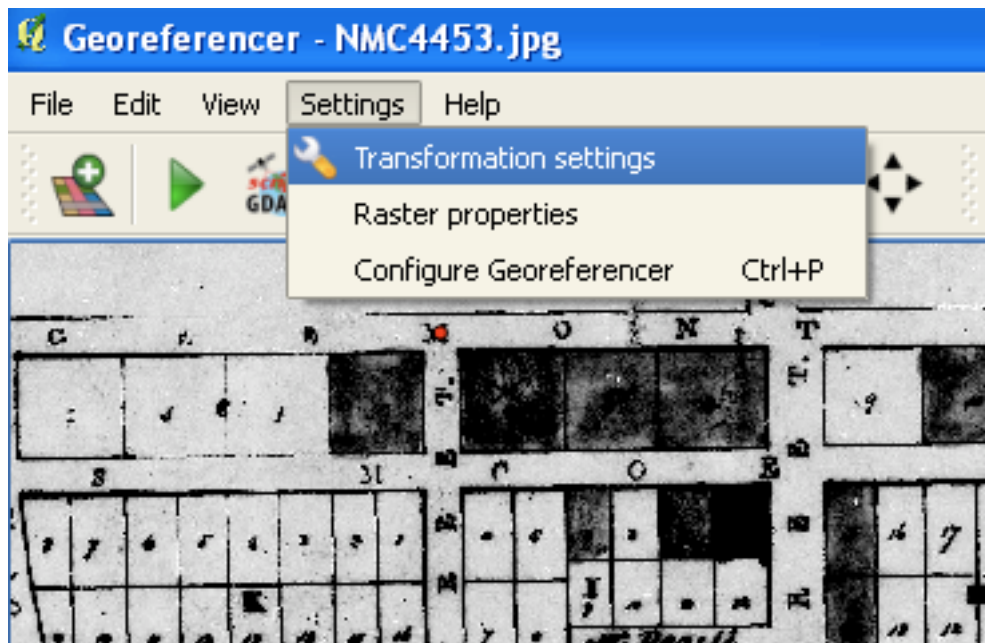
on/off	id	srcX	srcY	dstX	dstY
<input checked="" type="checkbox"/>	0	715.08	644.90		
<input checked="" type="checkbox"/>	1	1272.57	636.57		
<input checked="" type="checkbox"/>	2	1725.96	1089.61		
<input checked="" type="checkbox"/>	3	1727.53	1857.67		
<input checked="" type="checkbox"/>	4	1288.09	1859.35		
<input checked="" type="checkbox"/>	5	2156.91	633.27		
<input checked="" type="checkbox"/>	6	2428.63	951.95		



GCP table

on/off	id	srcX	srcY	dstX	dstY
<input checked="" type="checkbox"/>	0	715.08	644.90		
<input checked="" type="checkbox"/>	1	1272.57	636.57		
<input checked="" type="checkbox"/>	2	1725.96	1089.61		
<input checked="" type="checkbox"/>	3	1727.53	1857.67		
<input checked="" type="checkbox"/>	4	1288.09	1859.35		
<input checked="" type="checkbox"/>	5	2156.91	633.27		
<input checked="" type="checkbox"/>	6	2428.63	951.95		





## Transformation settings



Transformation type: Polynomial 1

Resampling method: Nearest neighbour

Compression: NONE

Create world file

Output raster: elfortin/Desktop/HGIS/data/maps/NMC4453\_modified.tif

Target SRS: EPSG:26917

Generate pdf map:

Generate pdf report:

Set Target Resolution

Horizontal: 1.00000

Vertical: -1.00000

Use 0 for transparency when needed

Load in QGIS when done

OK

Cancel

Help

Coordinate Reference System	Authority ID	ID
Voiron 1879 (Paris)	EPSG:4821	3628
WGS 66	EPSG:4760	3603
WGS 72	EPSG:4322	3450
WGS 72BE	EPSG:4324	3451
<b>WGS 84</b>	<b>EPSG:4326</b>	<b>3452</b>
WGS72	IGNF:WGS72G	10050
Wake Island 1952	EPSG:4733	3576
Wallis - Uvea 1978 (MOP78)	IGNF:WALL78GEO	10049
World Geodetic System 1984	IGNF:WGS84G	10051

+proj=longlat +ellps=WGS84 +datum=WGS84 +no\_defs +towgs84=0,0,0

Search

Authority All Search for ID  Hide deprecated CRSs

Recently used coordinate references systems

Coordinate Reference System	Authority ID	ID
NAD83 / UTM zone 17N	EPSG:26917	2294
WGS 84	EPSG:4326	3452



Coordinate Reference System	Authority ID	ID
Voiron 1879 (Paris)	EPSG:4821	3628
WGS 66	EPSG:4760	3603
WGS 72	EPSG:4322	3450
WGS 72BE	EPSG:4324	3451
WGS 84	EPSG:4326	3452
WGS72	IGNF:WGS72G	10050
Wake Island 1952	EPSG:4733	3576
Wallis - Uvea 1978 (MOP78)	IGNF:WALL78GEO	10049
World Geodetic System 1984	IGNF:WGS84G	10051

+proj=longlat +ellps=WGS84 +datum=WGS84 +no\_defs +towgs84=0,0,0

Search

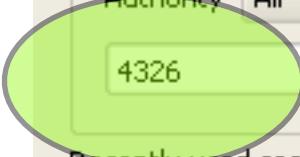
Authority: All Search for: ID  Hide deprecated CRSs

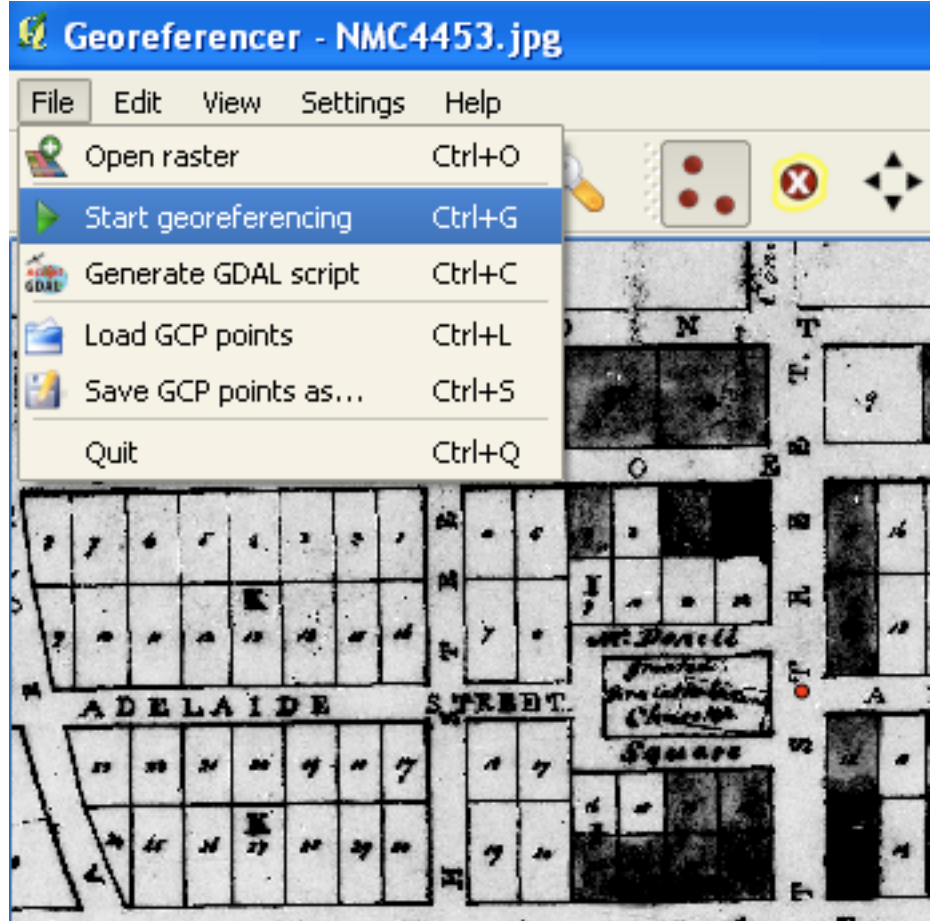
4326 Find

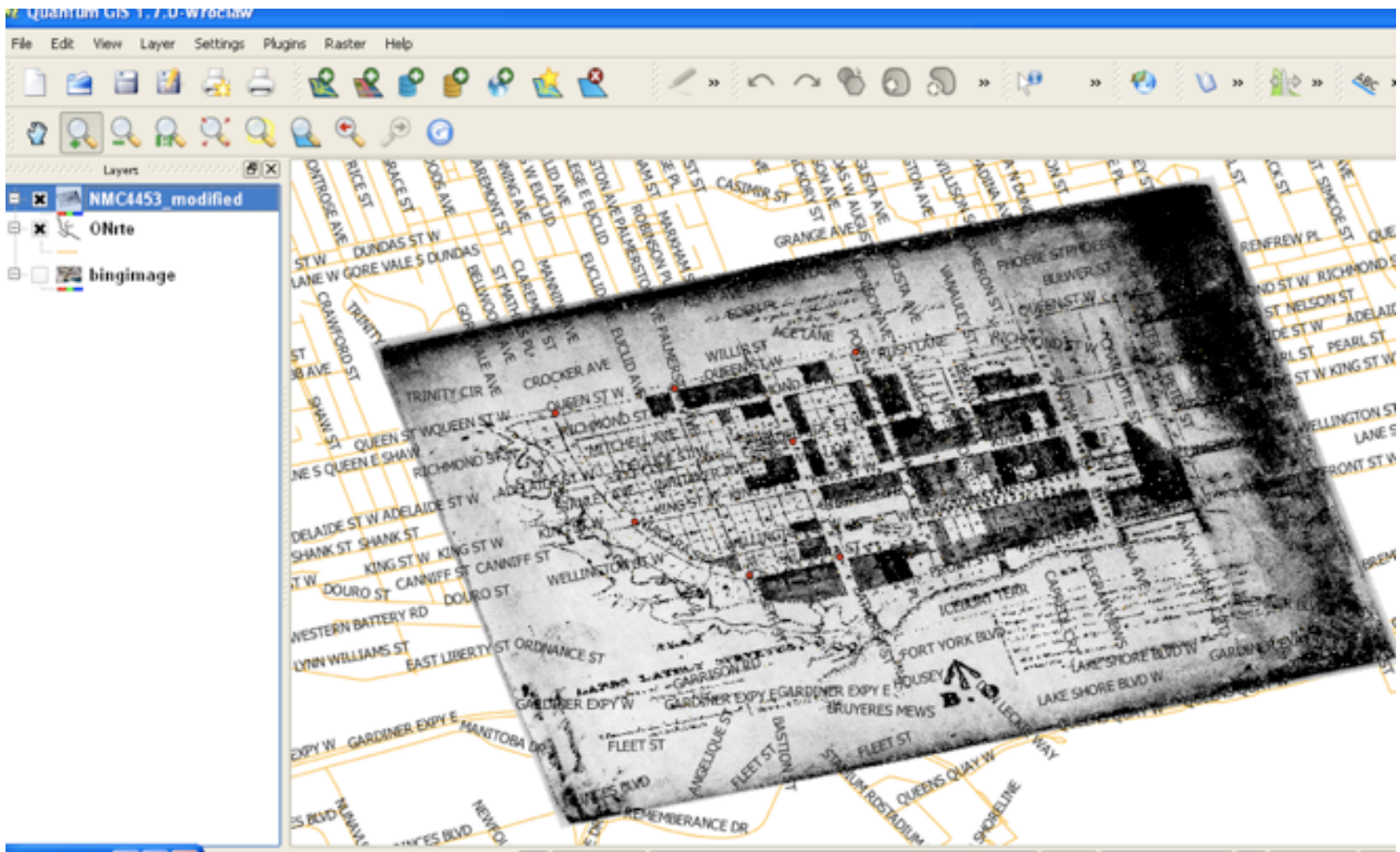
Recently used coordinate references systems

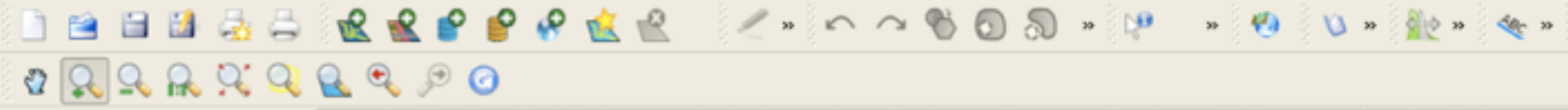
Coordinate Reference System	Authority ID	ID
NAD83 / UTM zone 17N	EPSG:26917	2294
WGS 84	EPSG:4326	3452

OK Close

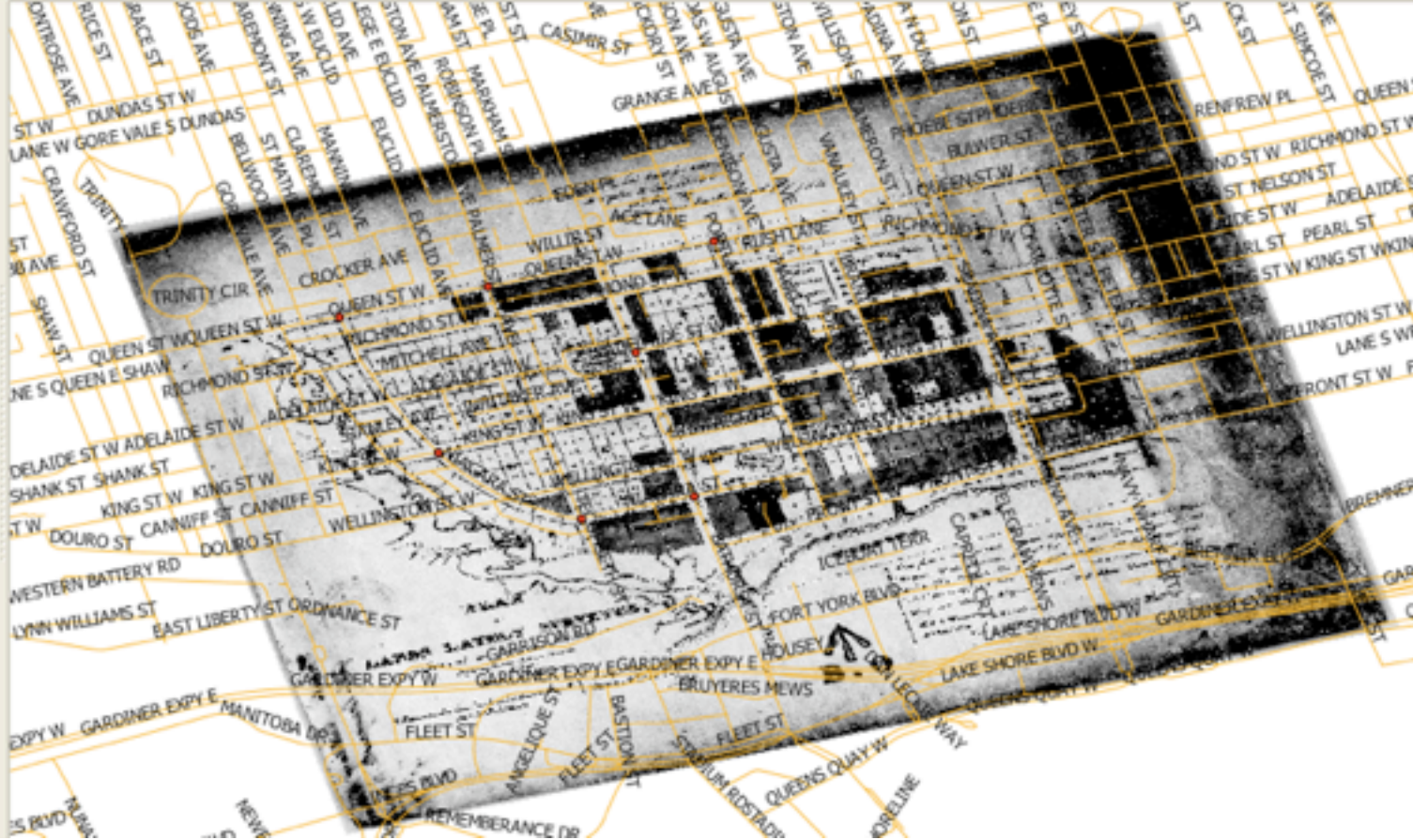








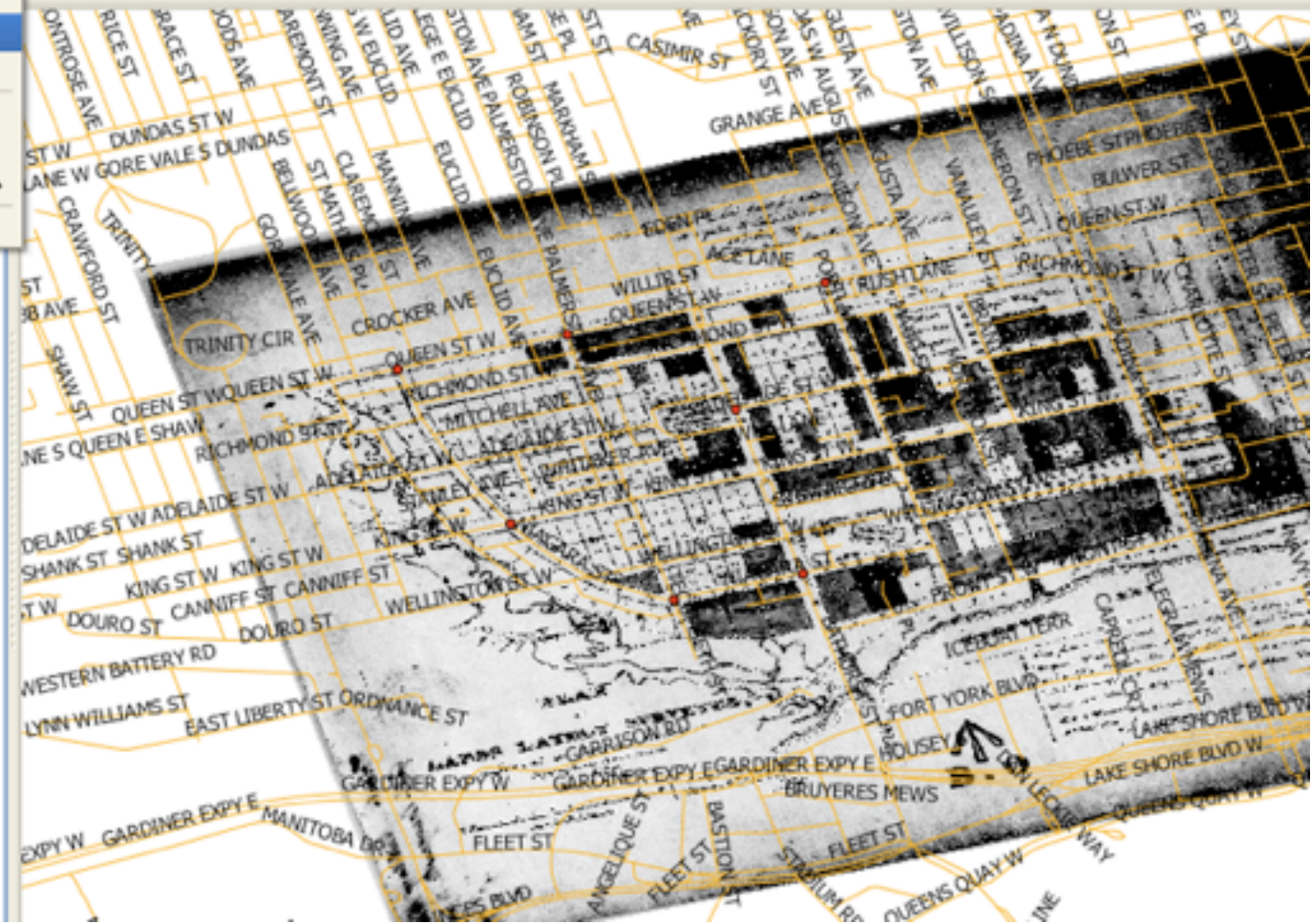
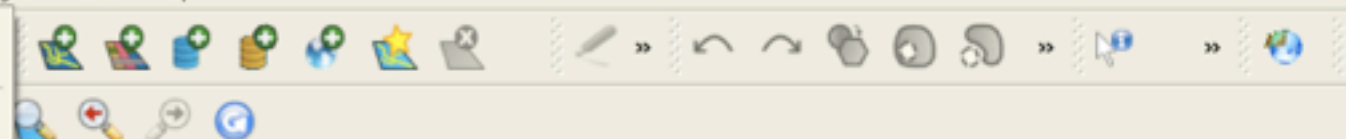
- ONrte
- NMC4453\_modified
- bingimage



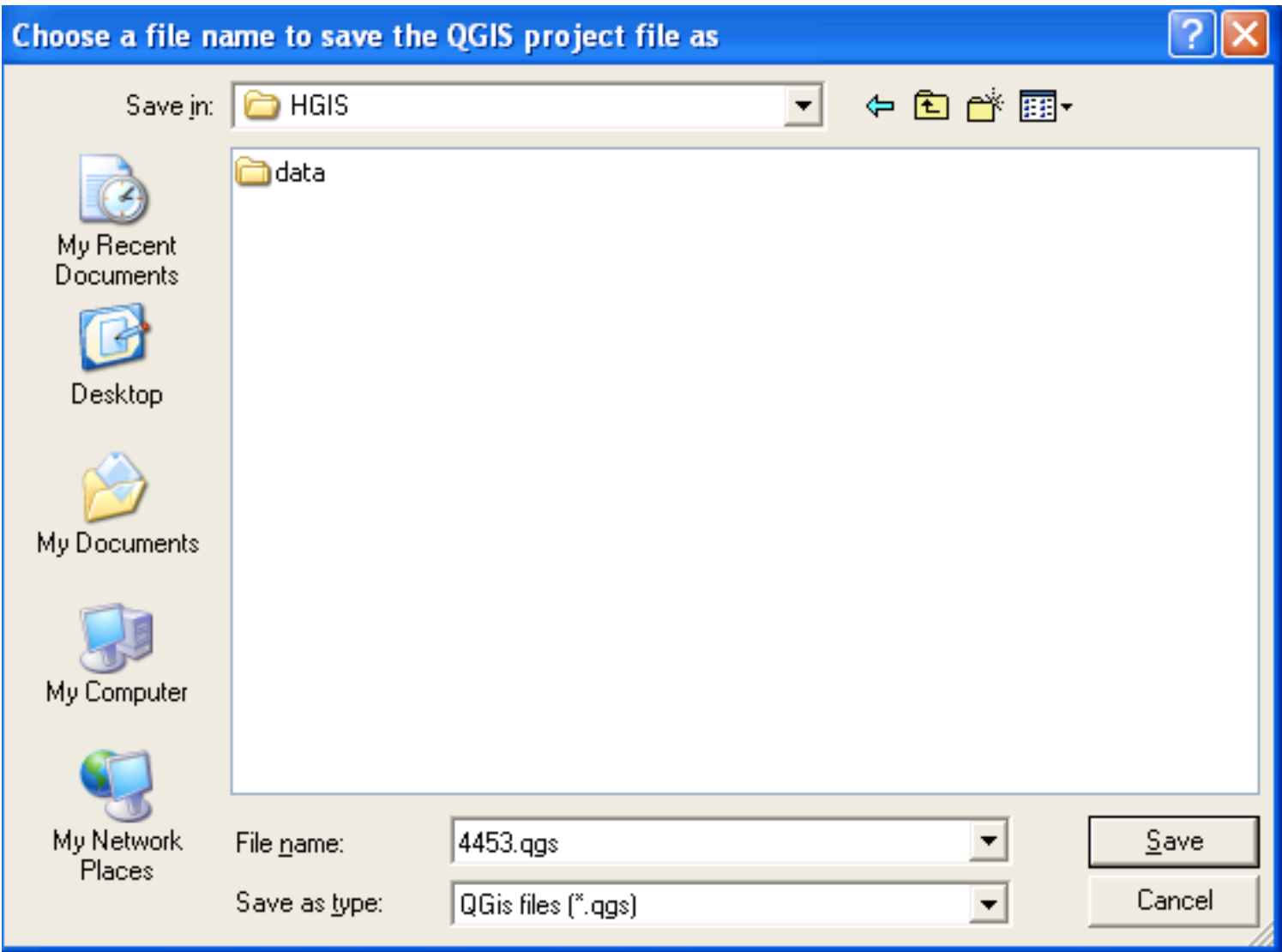
Quantum GIS 1.7.0 - Wrocław

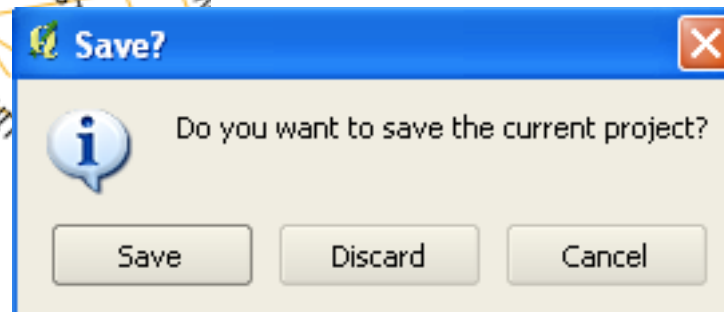
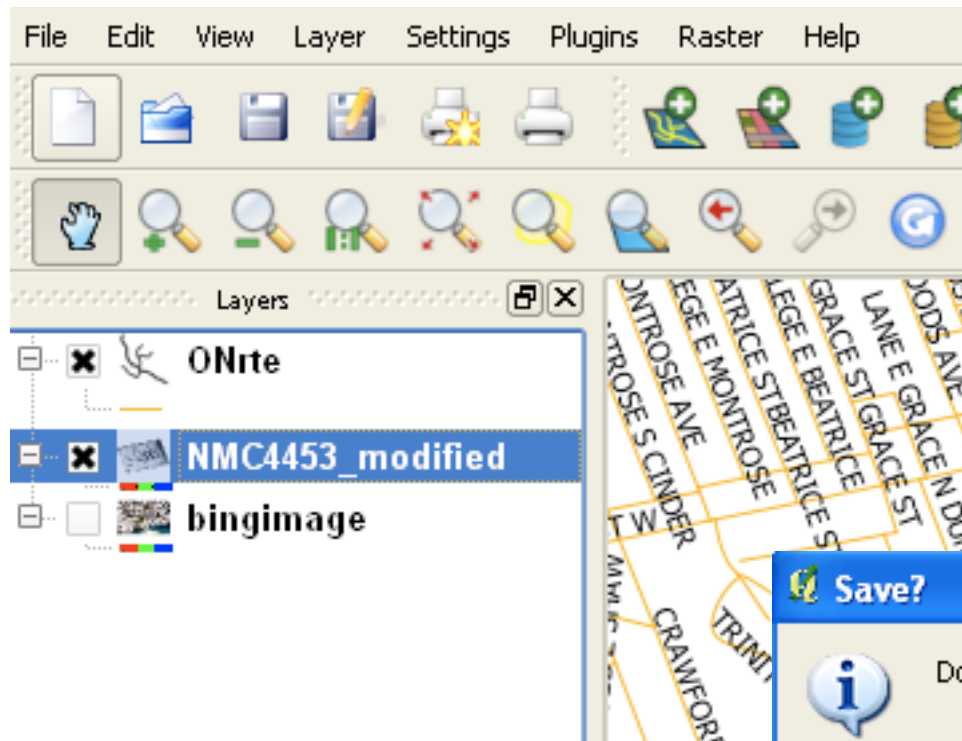
File Edit View Layer Settings Plugins Raster Help

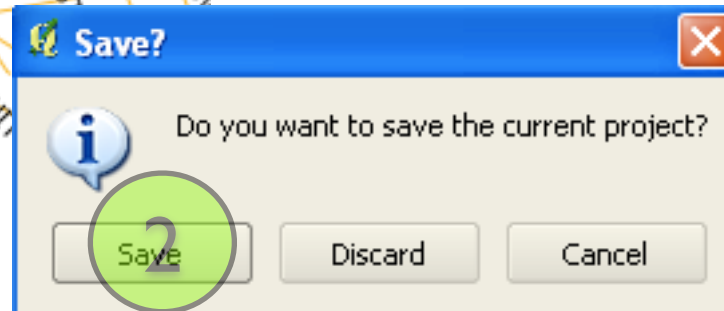
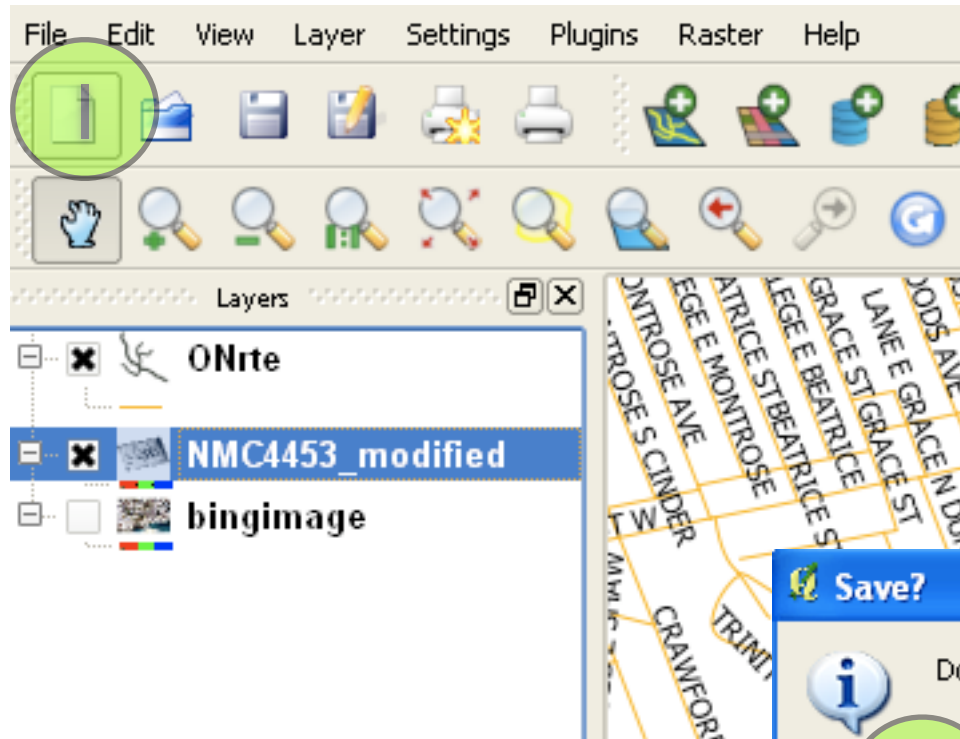
New Project Ctrl+N  
Open Project... Ctrl+O  
Open Recent Projects  
Save Project Ctrl+S  
Save Project As... Ctrl+Shift+S  
Save as Image...  
New Print Composer Ctrl+P  
Composer manager...  
Print Composers  
Exit Ctrl+Q











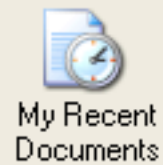
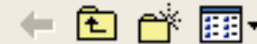
File Edit View Layer Settings Plugins Raster Help



### Choose a QGIS project file to open



Look in: HGIS



My Recent Documents



Desktop



My Documents



My Computer



My Network Places

data  
4453.qgs

File name: 4453.qgs

Files of type: QGIS files (\*.qgs)

Open

Cancel

File Edit View Layer Settings Plugins Raster Help



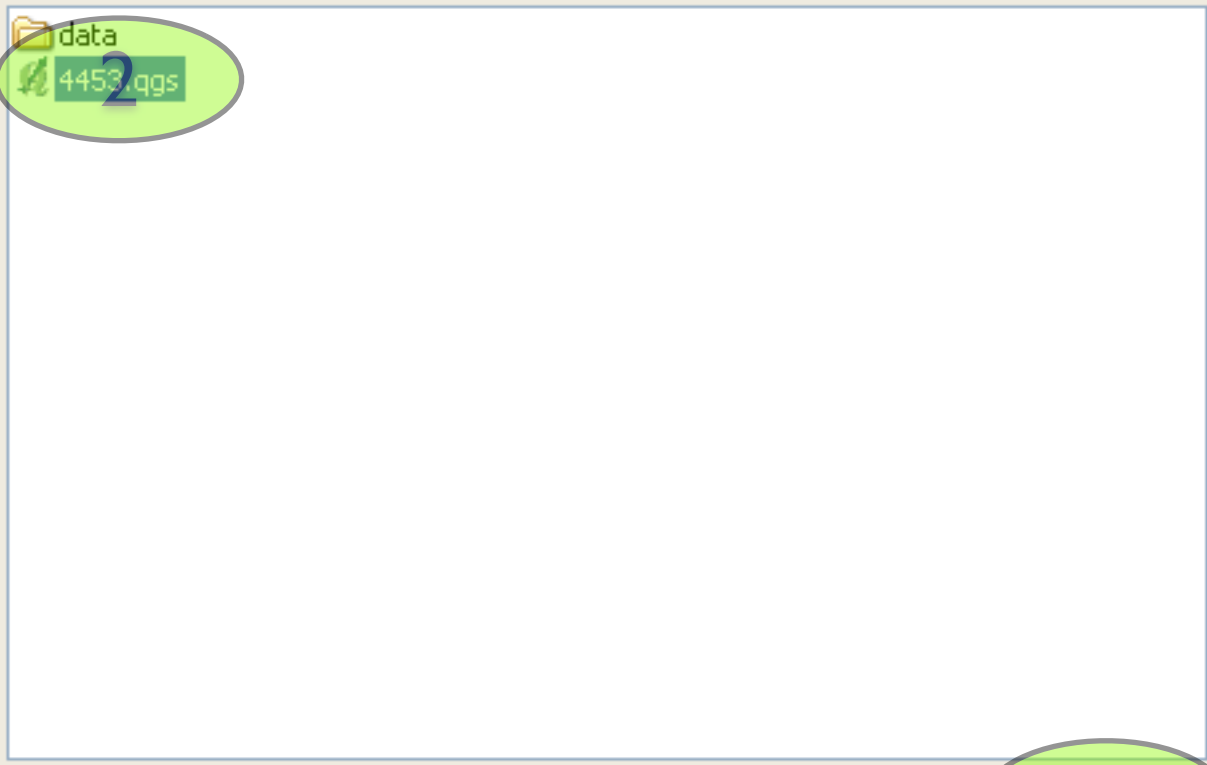
### Choose a QGIS project file to open



Look in: folder icon HGIS

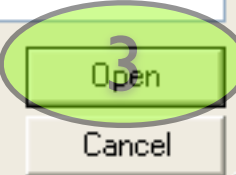


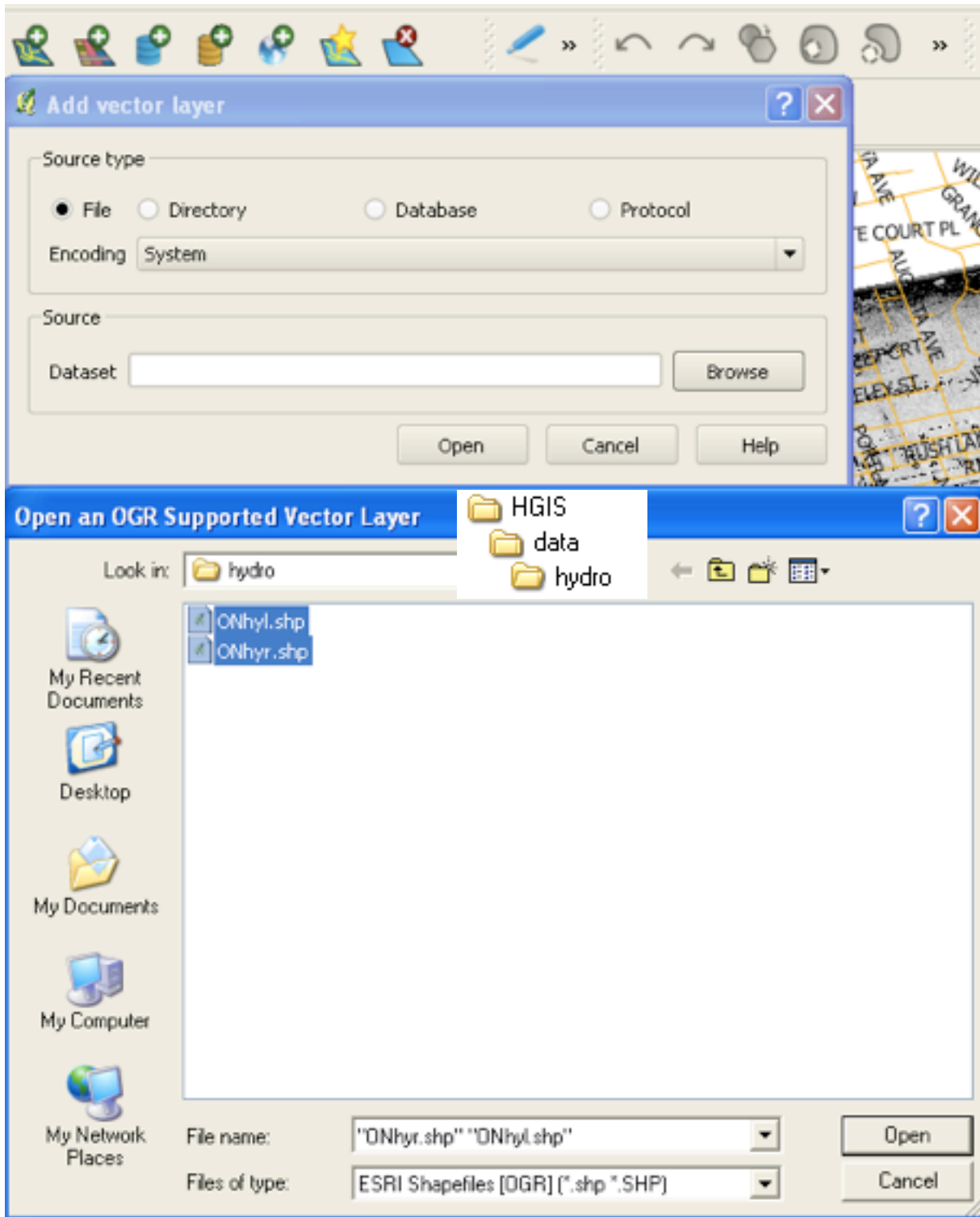
- My Recent Documents
- Desktop
- My Documents
- My Computer
- My Network Places

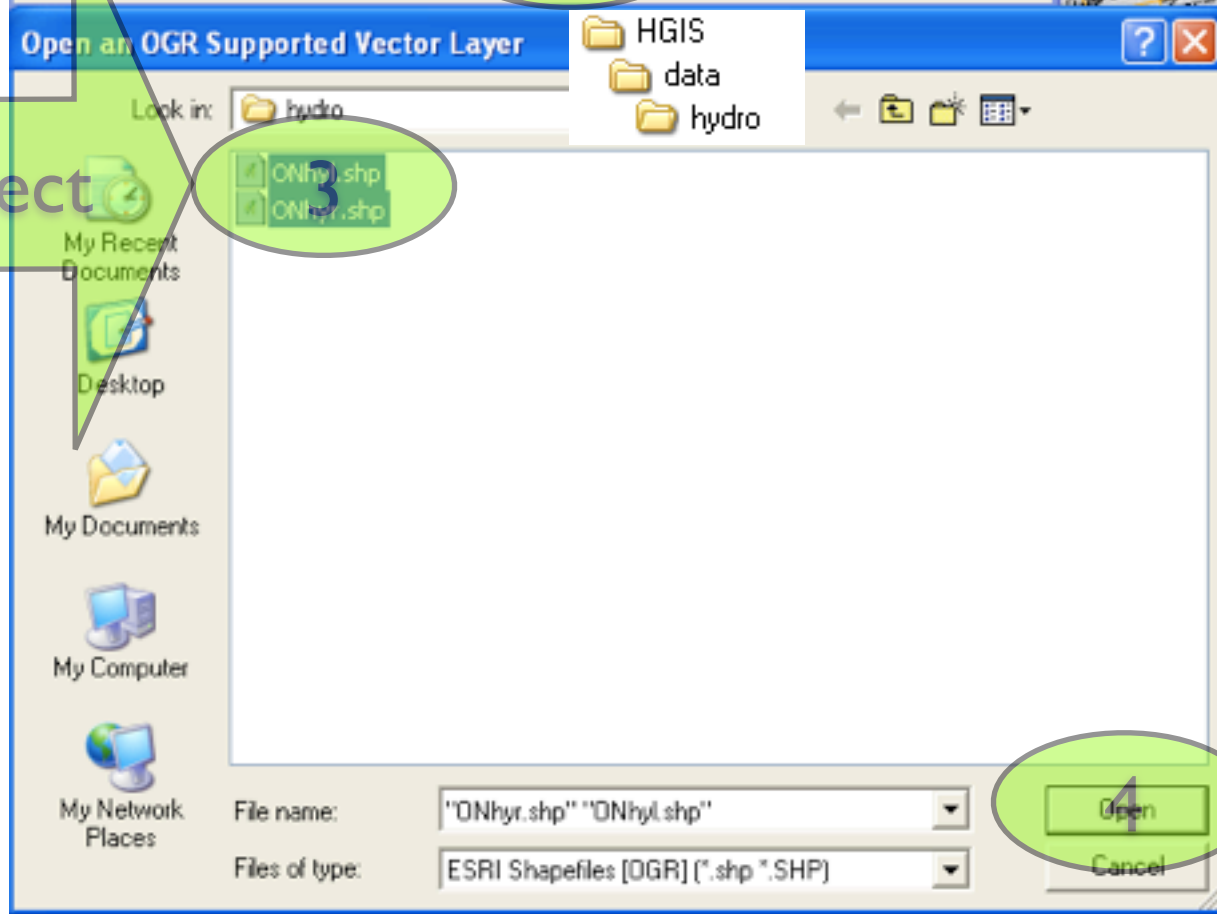
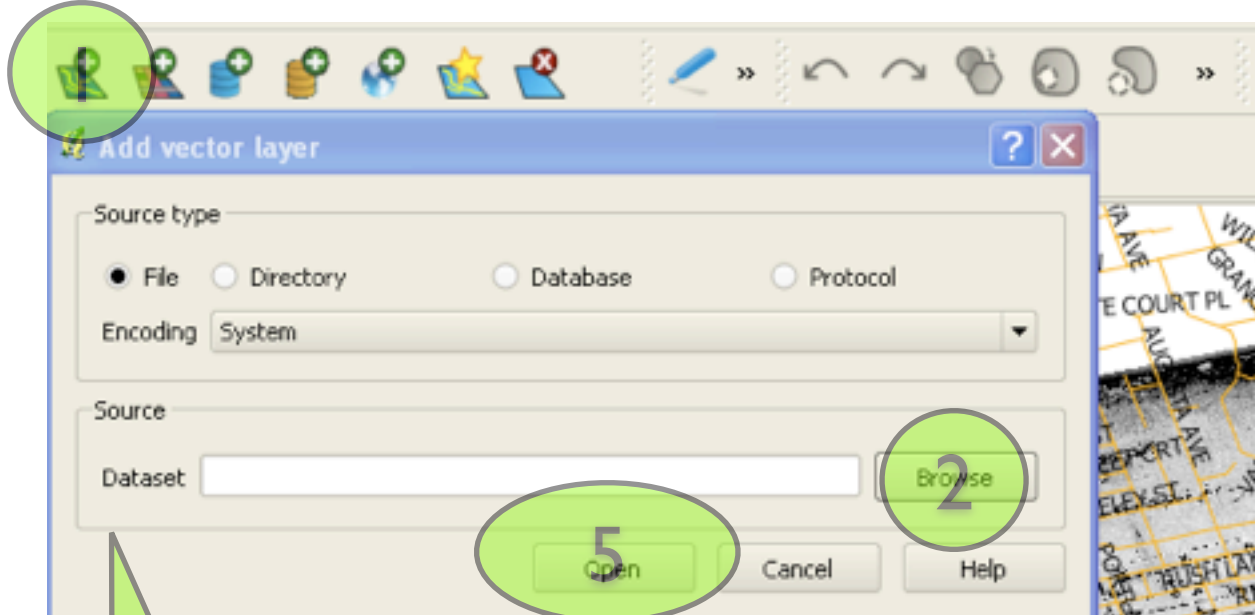


File name:

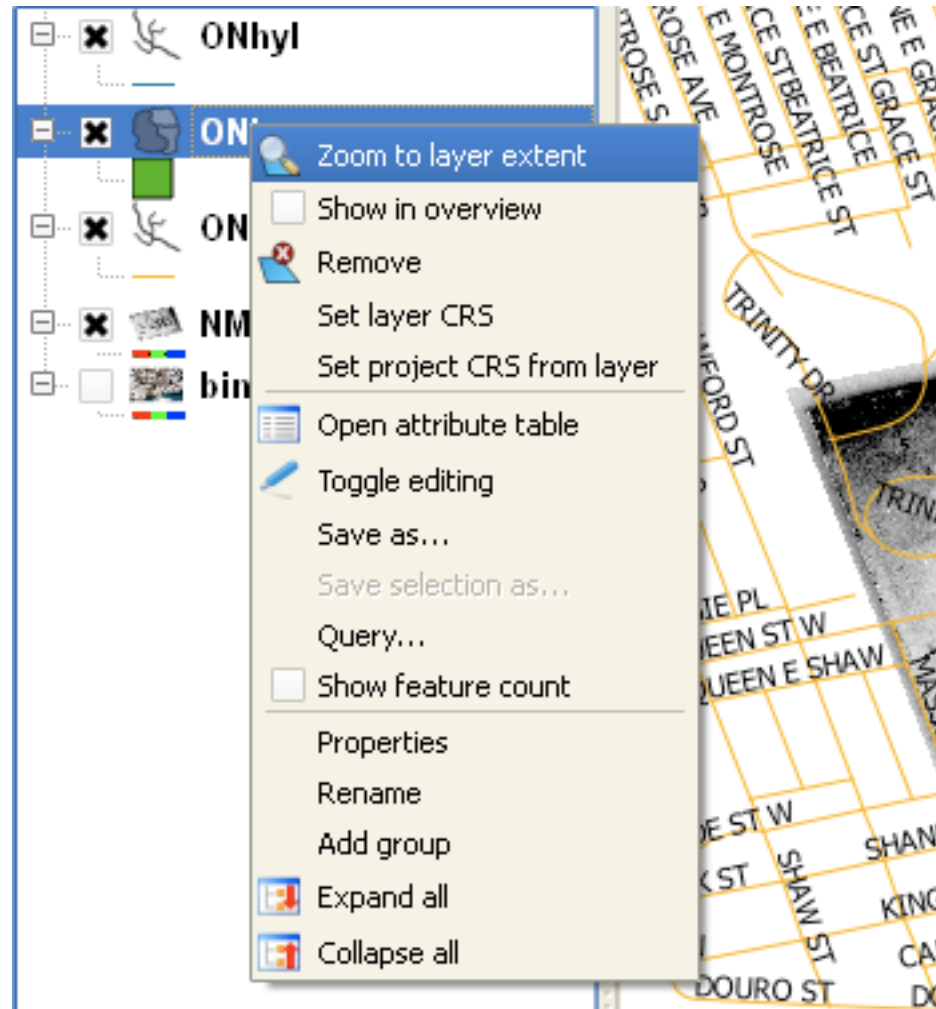
Files of type:



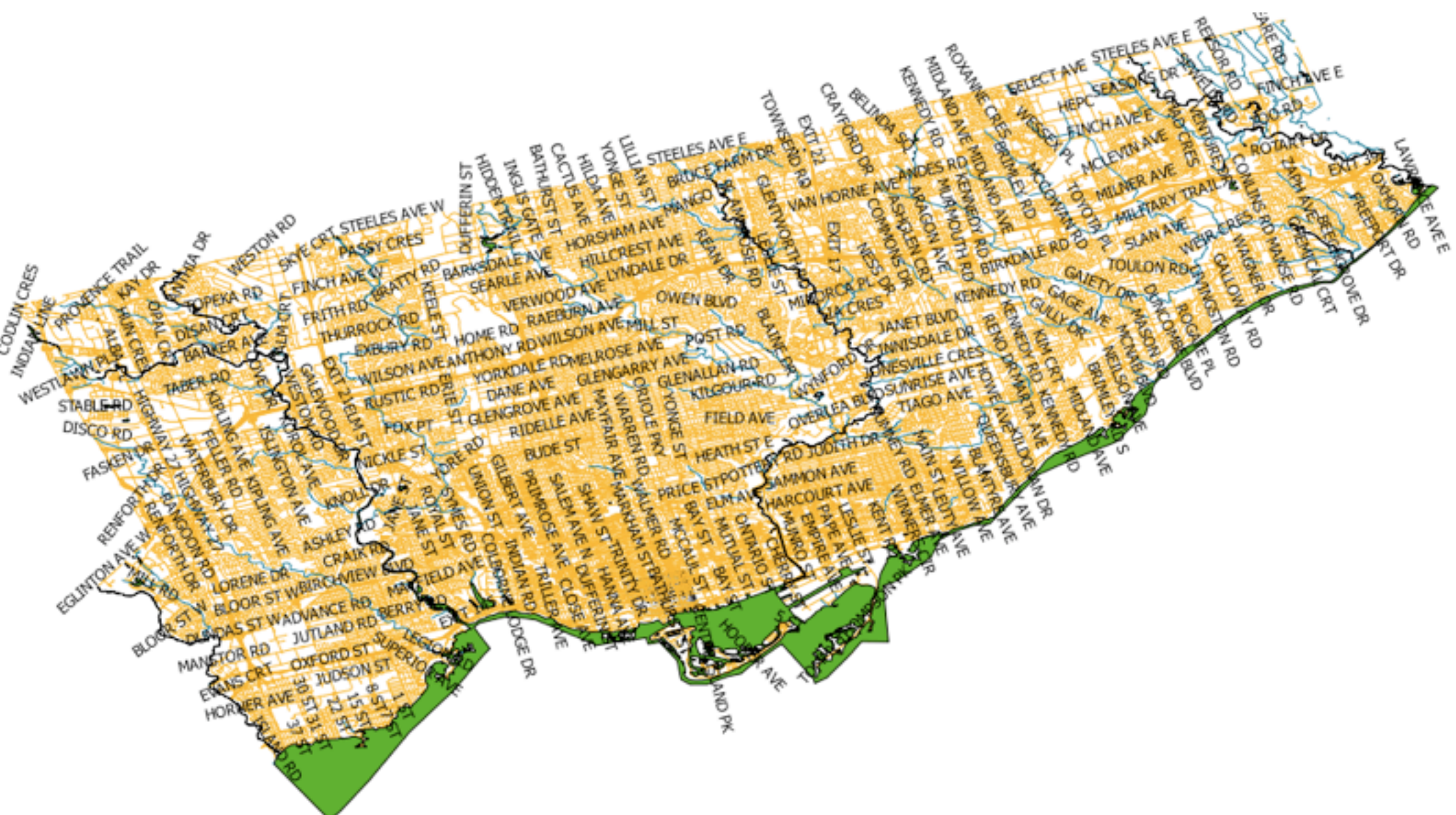




shift select







Layers

- ONhyl
- ONhyr
- ONrte
- NMC4453\_modified
- bingimage


### Layer Properties - ONhyr

Style | Labels | Fields | General | Metadata | Actions

Single Symbol | Symbol levels | Old symbology



Unit: Millimeter

Transparency: 0%

Color:  Change

Change... | Advanced | Save as style

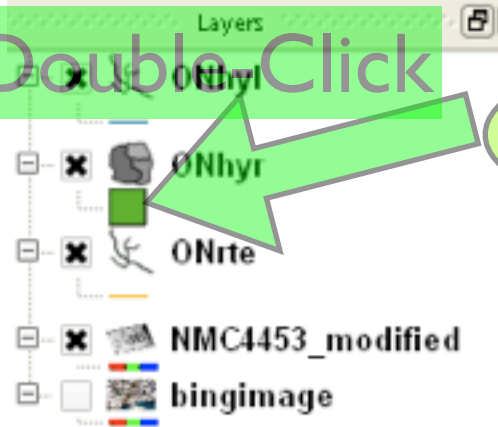
Saved styles | Style manager...

Restore Default Style | Save As Default | Load Style ... | Save Style ...

OK | Cancel | Apply | Help

I Double Click



### Layer Properties - ONhyr

Style | Labels | Fields | General | Metadata | Actions

Single Symbol | Symbol levels | Old symbology

Unit: Millimeter

Transparency: 0%

Color: Change

Change... | Advanced | Save as style

Saved styles | Style manager...

Restore Default Style | Save As Default | Load Style ... | Save Style ...

OK | Cancel | Apply | Help

Style

Labels

Fields

General

Metadata

Actions

Joins

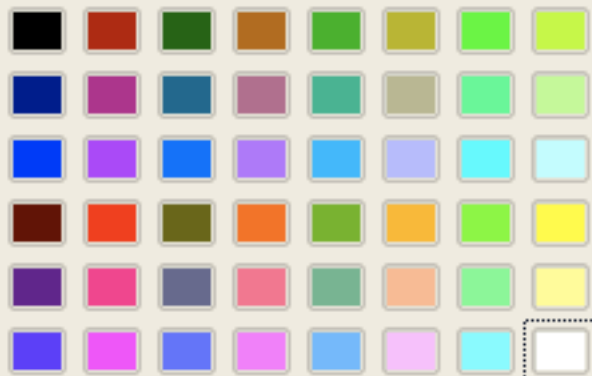
Single Symbol

Symbol levels

Old symbology

### Select Color

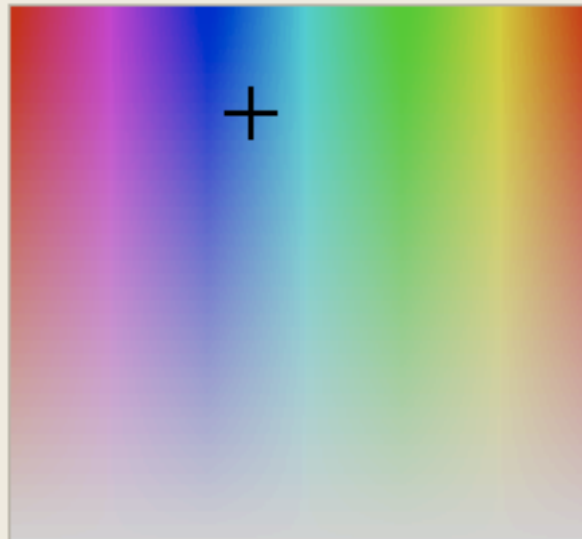
Basic colors



Custom colors



Add to Custom Colors



Hue: 213 Red: 26  
Sat: 204 Green: 75  
Val: 134 Blue: 134

OK

Cancel

Restore Default Style

Save As Default

Load Style ...

Save Style ...



Style



Labels



Fields



General



Metadata



Actions



Joins

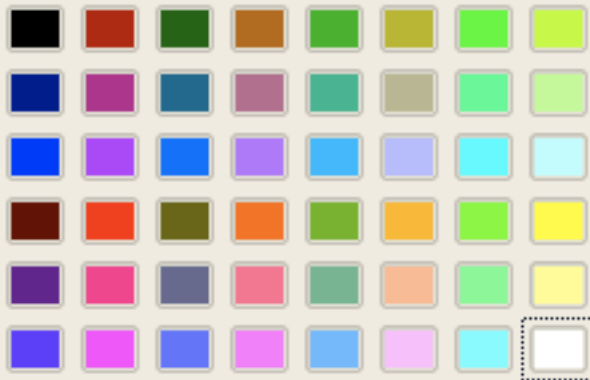
Single Symbol

Symbol levels

Old symbology

### Select Color

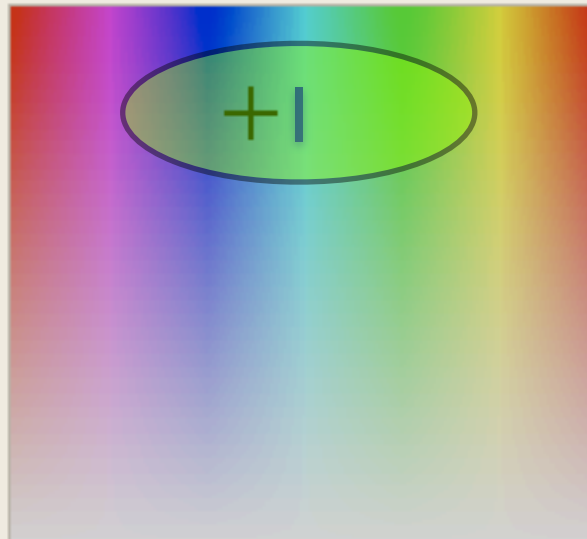
Basic colors



Custom colors



Add to Custom Colors



Hue: 213 Red: 26  
Sat: 204 Green: 75  
Val: 134 Blue: 134

OK

Cancel

Restore Default Style

Save As Default

Load Style ...

Save Style ...

Style | Labels | Fields | General | Metadata | Actions | Joins

Single Symbol

Symbol levels | Old symbology



Unit: Millimeter

Transparency 0%

Color: Change

Change...

Advanced

Save as style

Saved styles

Style manager...



Restore Default Style | Save As Default | Load Style ... | Save Style ...

OK | Cancel | Apply | Help

Style | Labels | Fields | General | Metadata | Actions | Joins

Single Symbol

Symbol levels | Old symbology



Unit: Millimeter

Transparency 0%

Color: Change

Change...

Advanced

Save as style

Saved styles

Style manager...



Restore Default Style | Save As Default | Load Style ... | Save Style ...

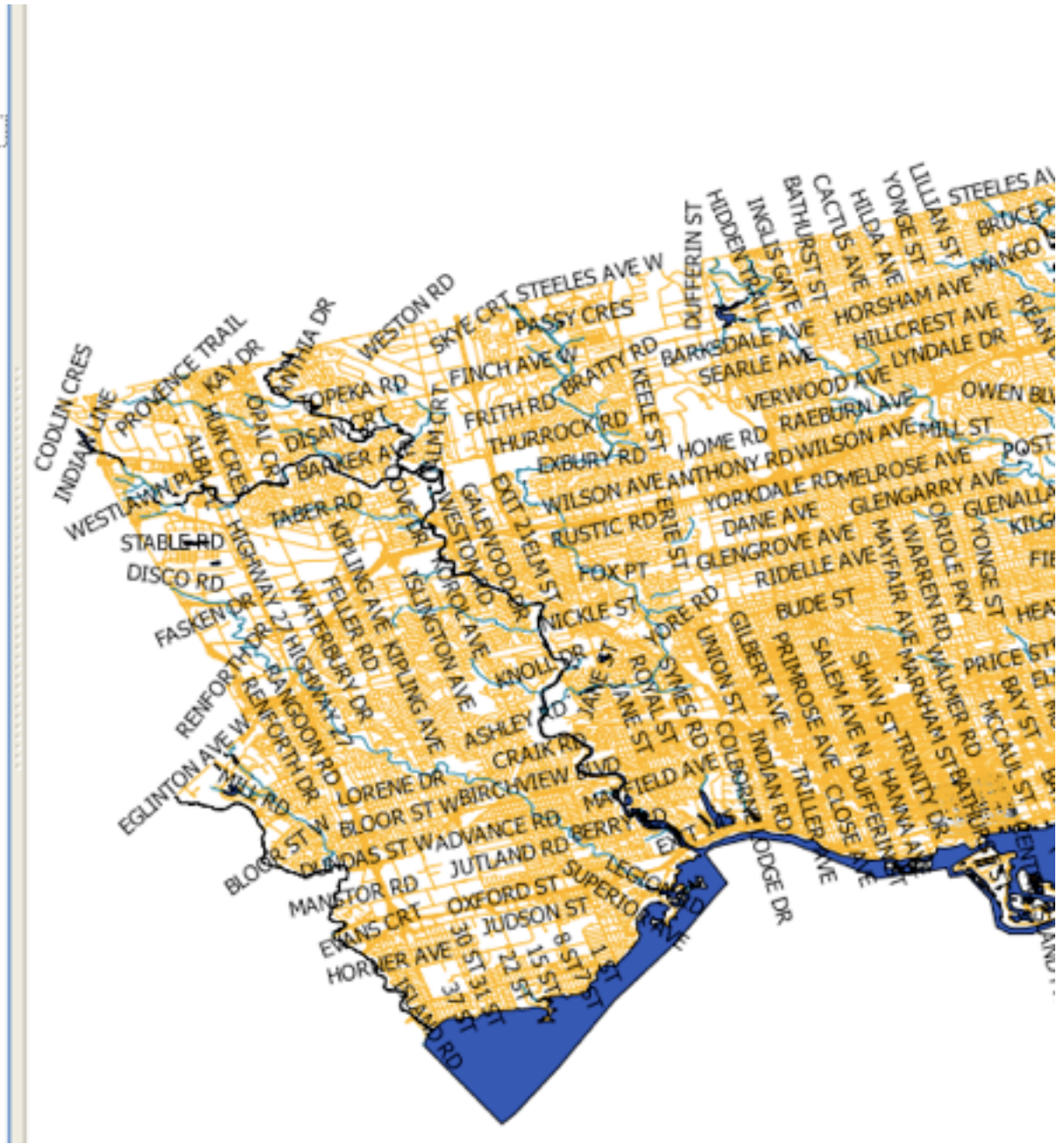
OK

Cancel

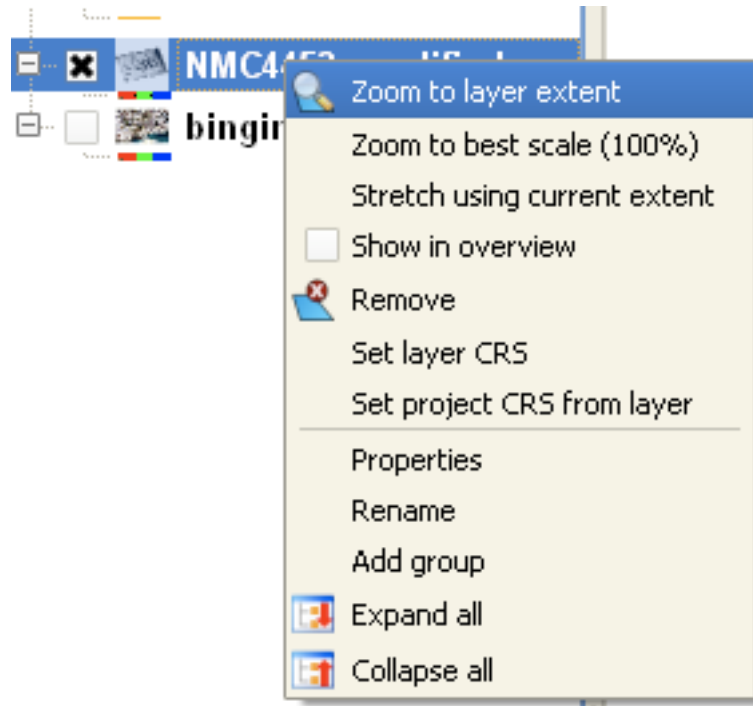
Apply

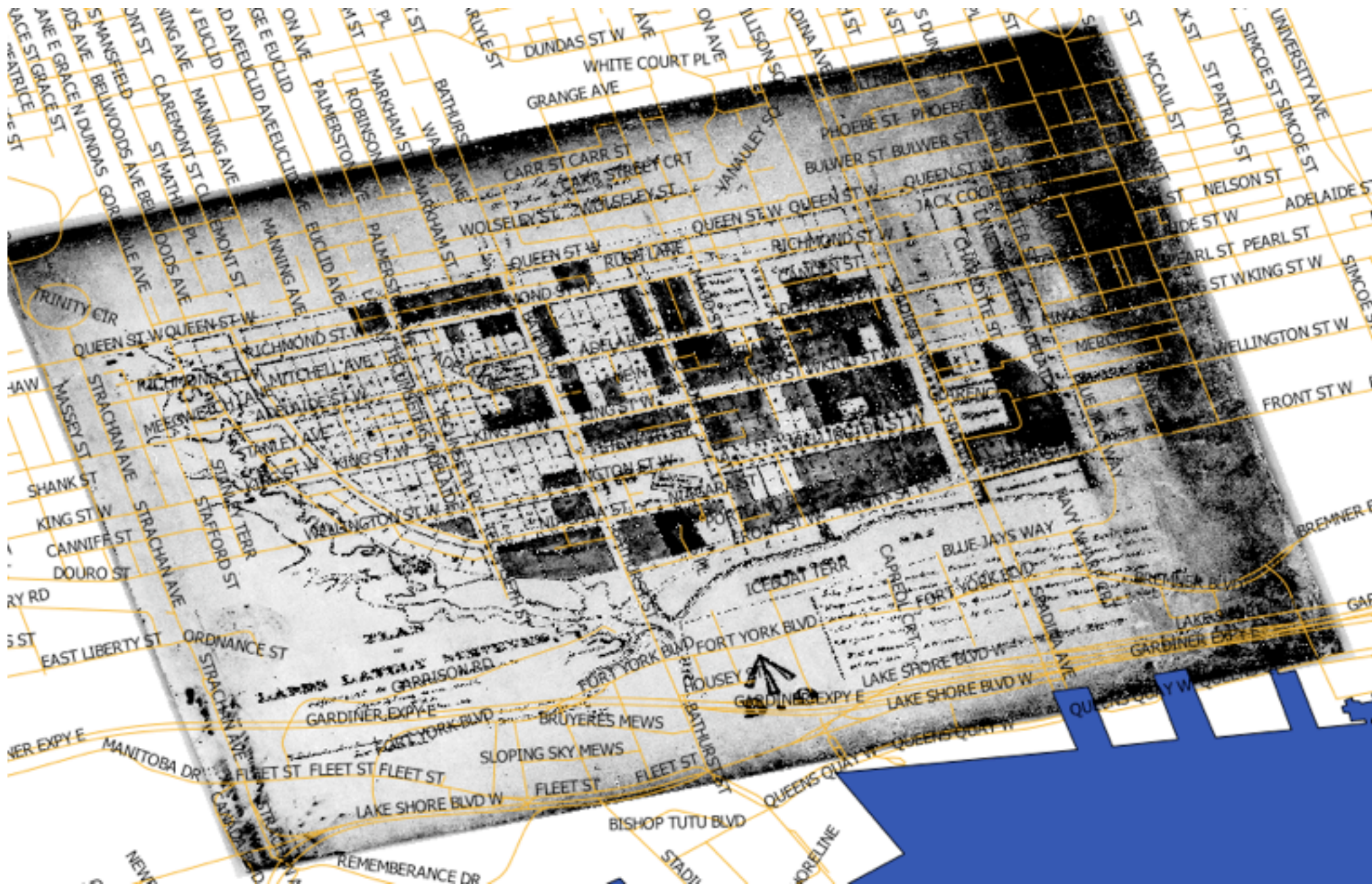
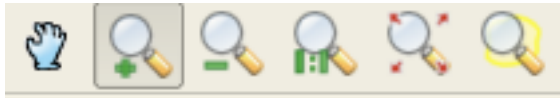
Help

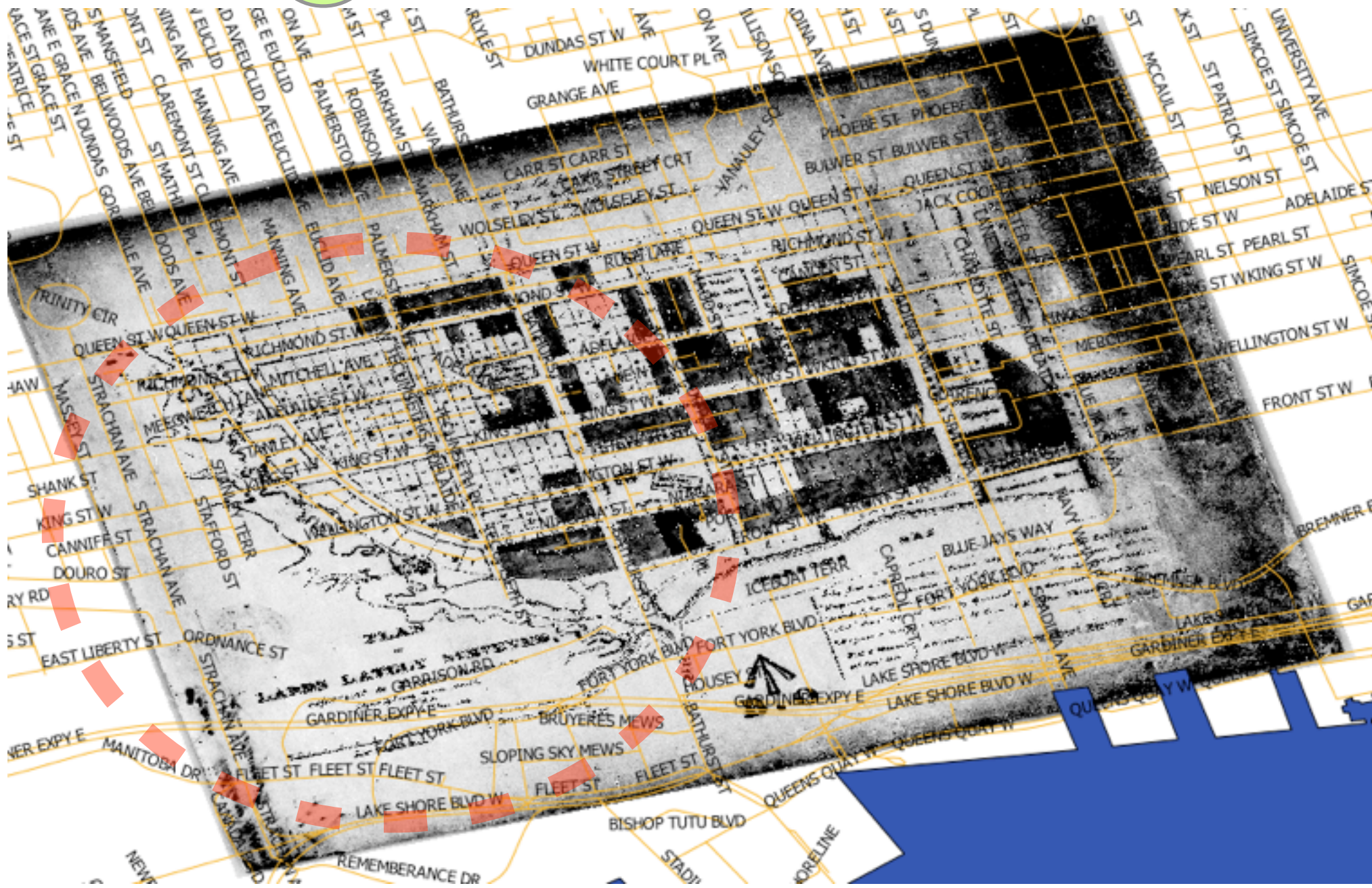
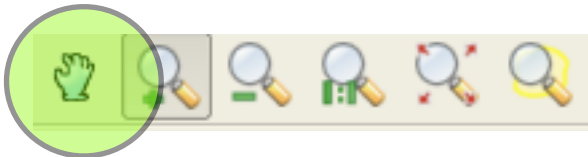
-  ONhyl
-  ONhyr
-  ONrte
-  NMC4453\_modified
-  bingimage

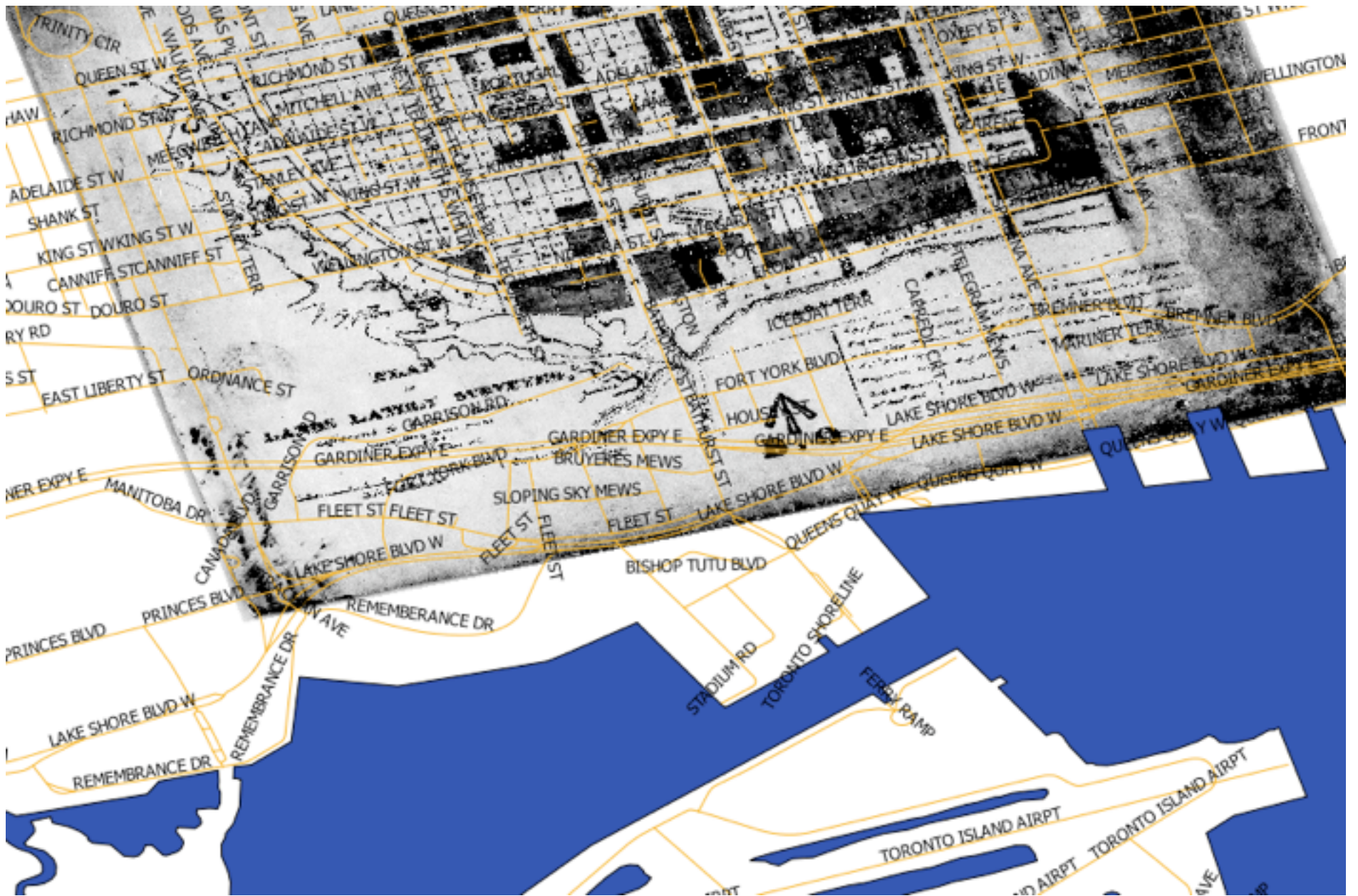


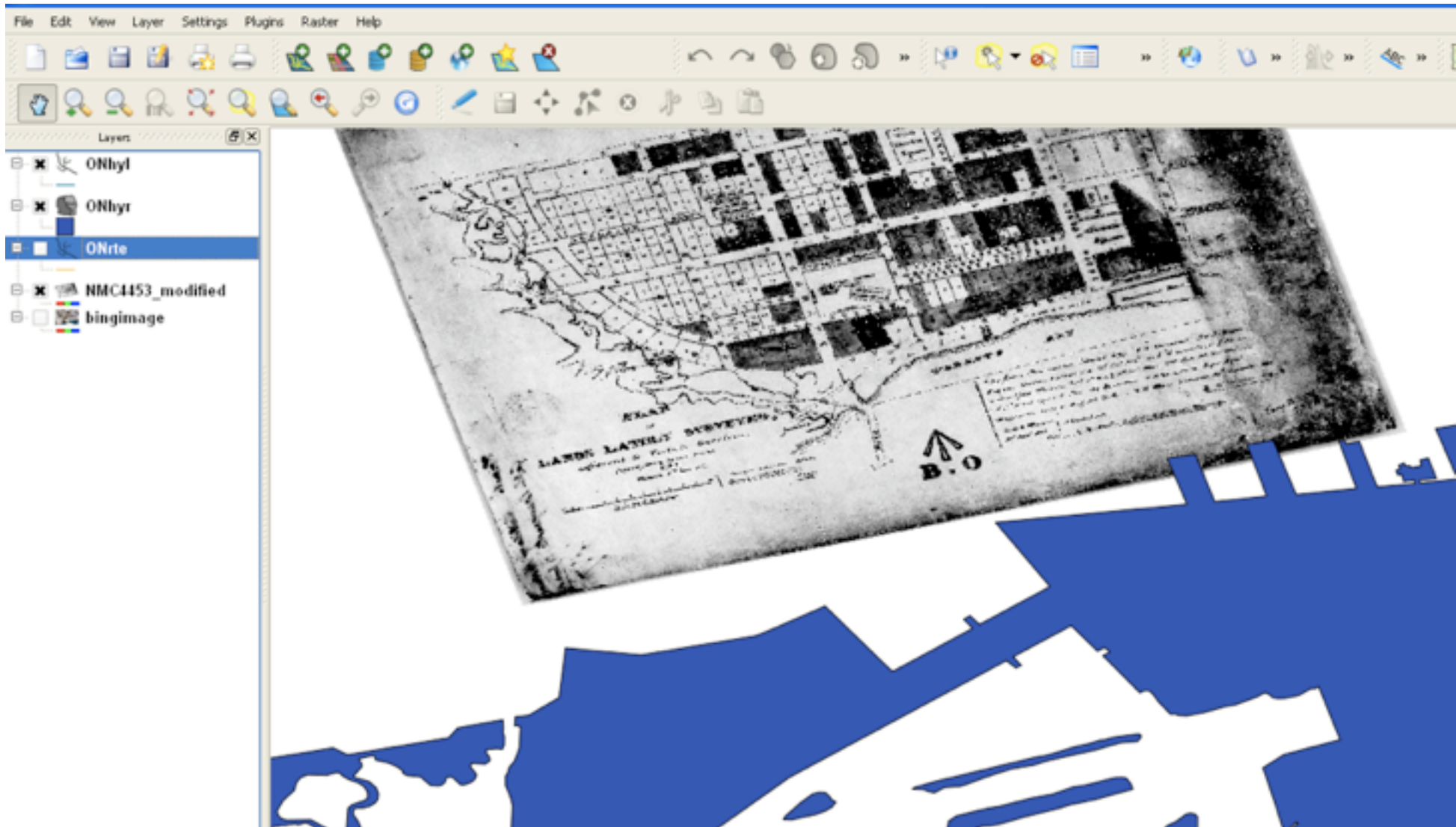


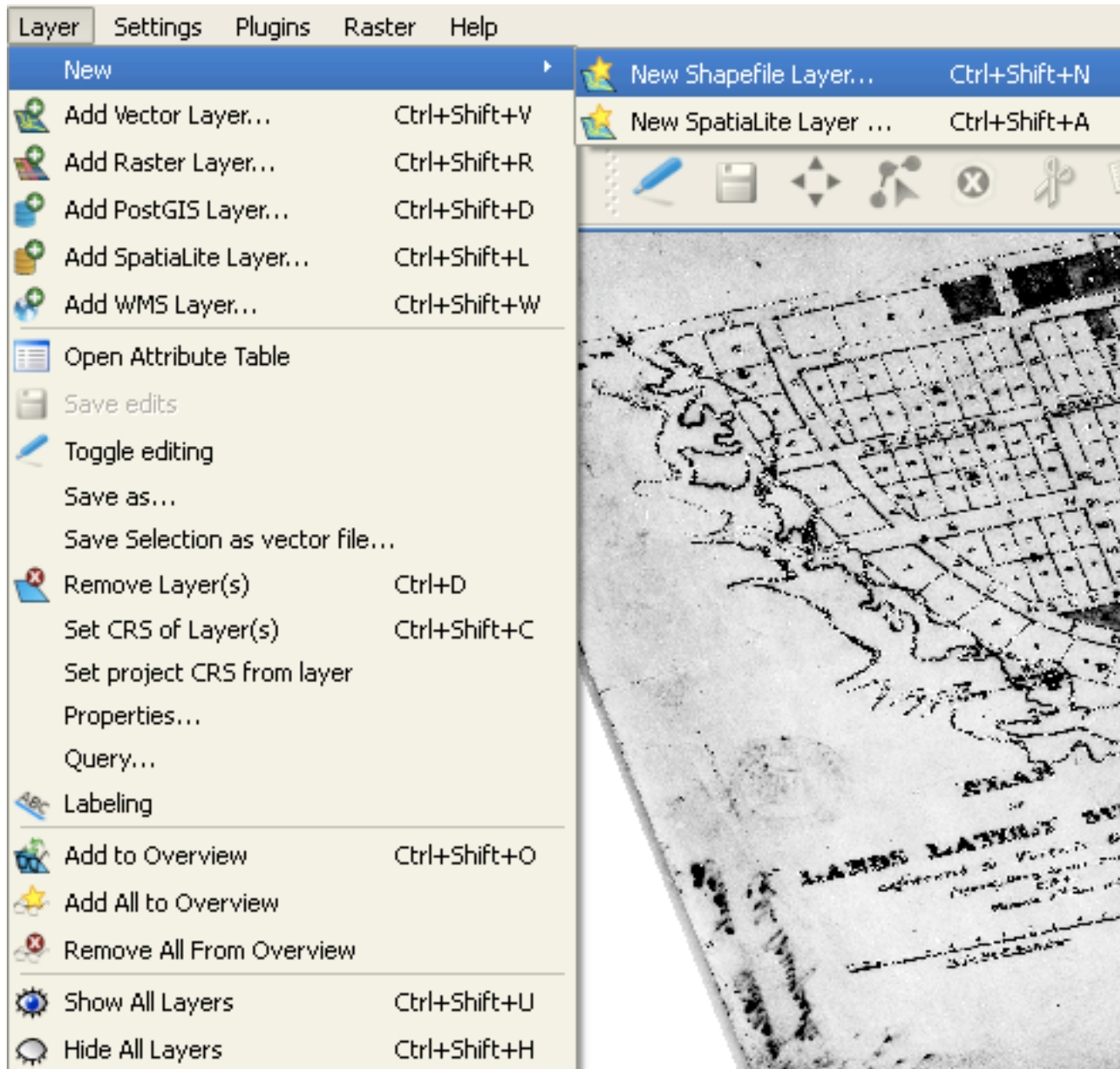


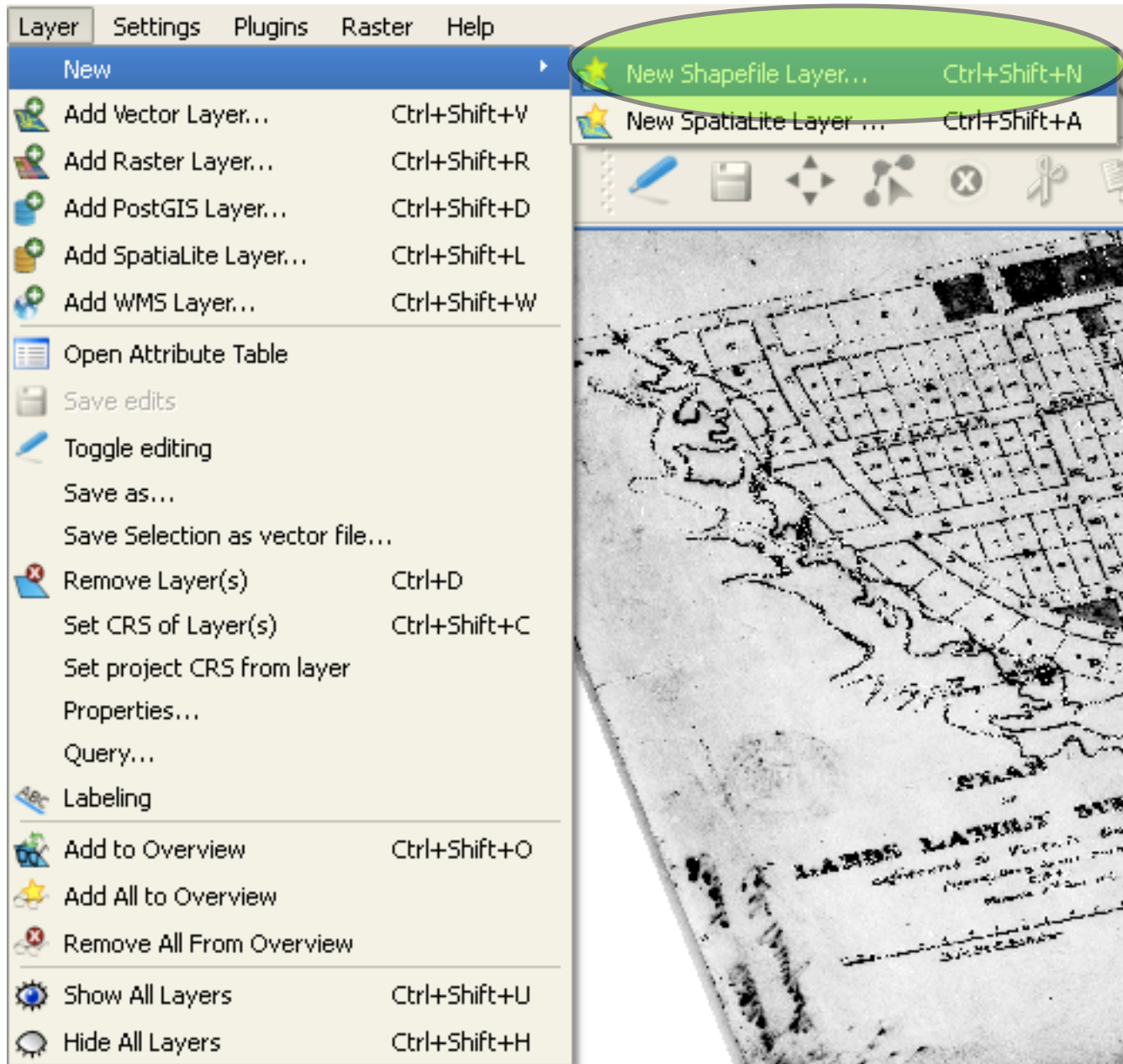












## New Vector Layer



Type

Point  Line  Polygon

CRS ID

[Specify CRS](#)

New attribute

Name

Type

Width

Precision

Attributes list

Add to attributes list

Name	Type	Width	Precision
id	Integer	10	

Remove selected attribute

OK

Cancel

Help



# New Vector Layer



Type

Point



Line

Polygon

CRS ID

[Specify CRS](#)

New attribute

Name

Type

Width

Precision

Attributes list

[Add to attributes list](#)

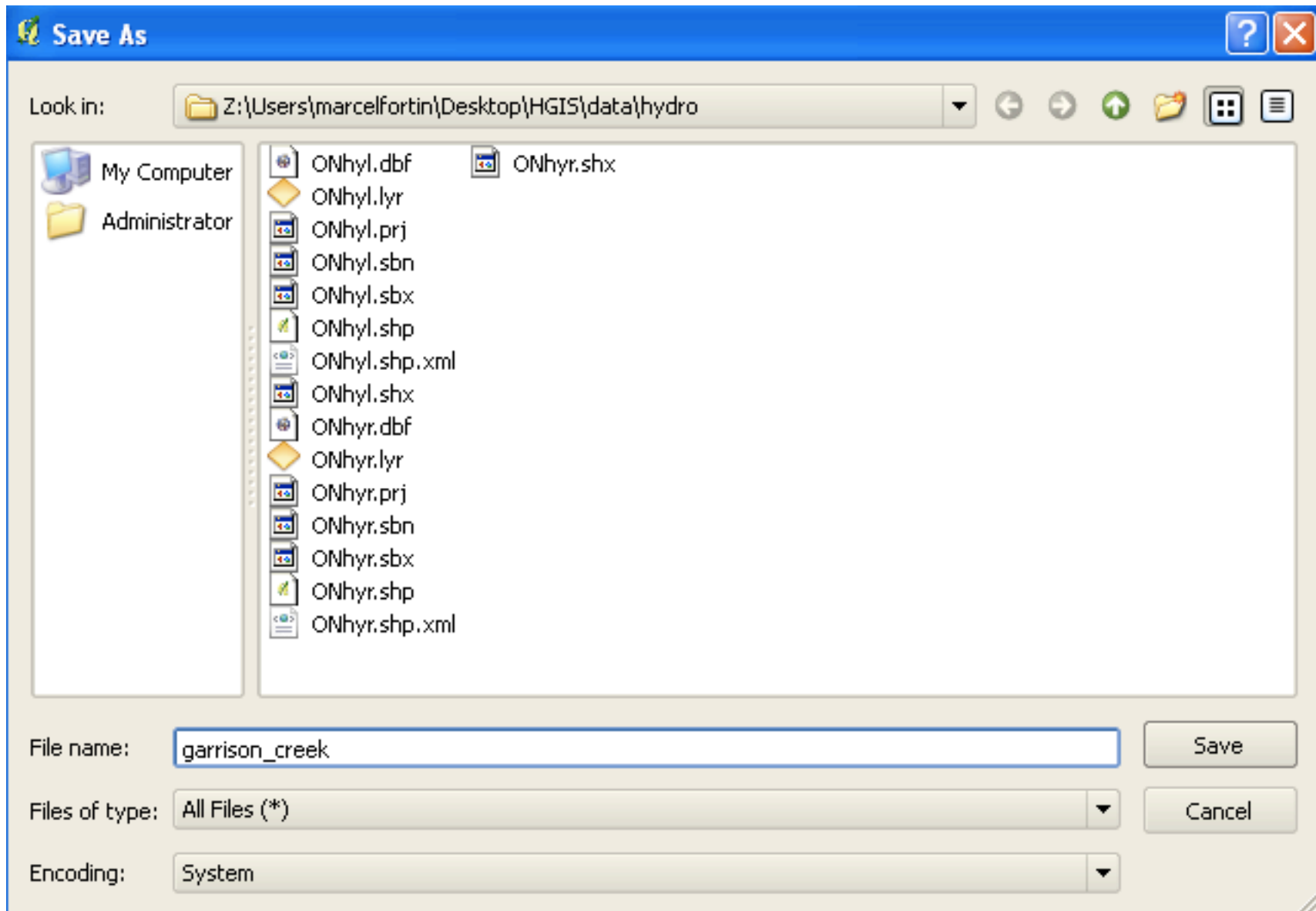
Name	Type	Width	Precision
id	Integer	10	

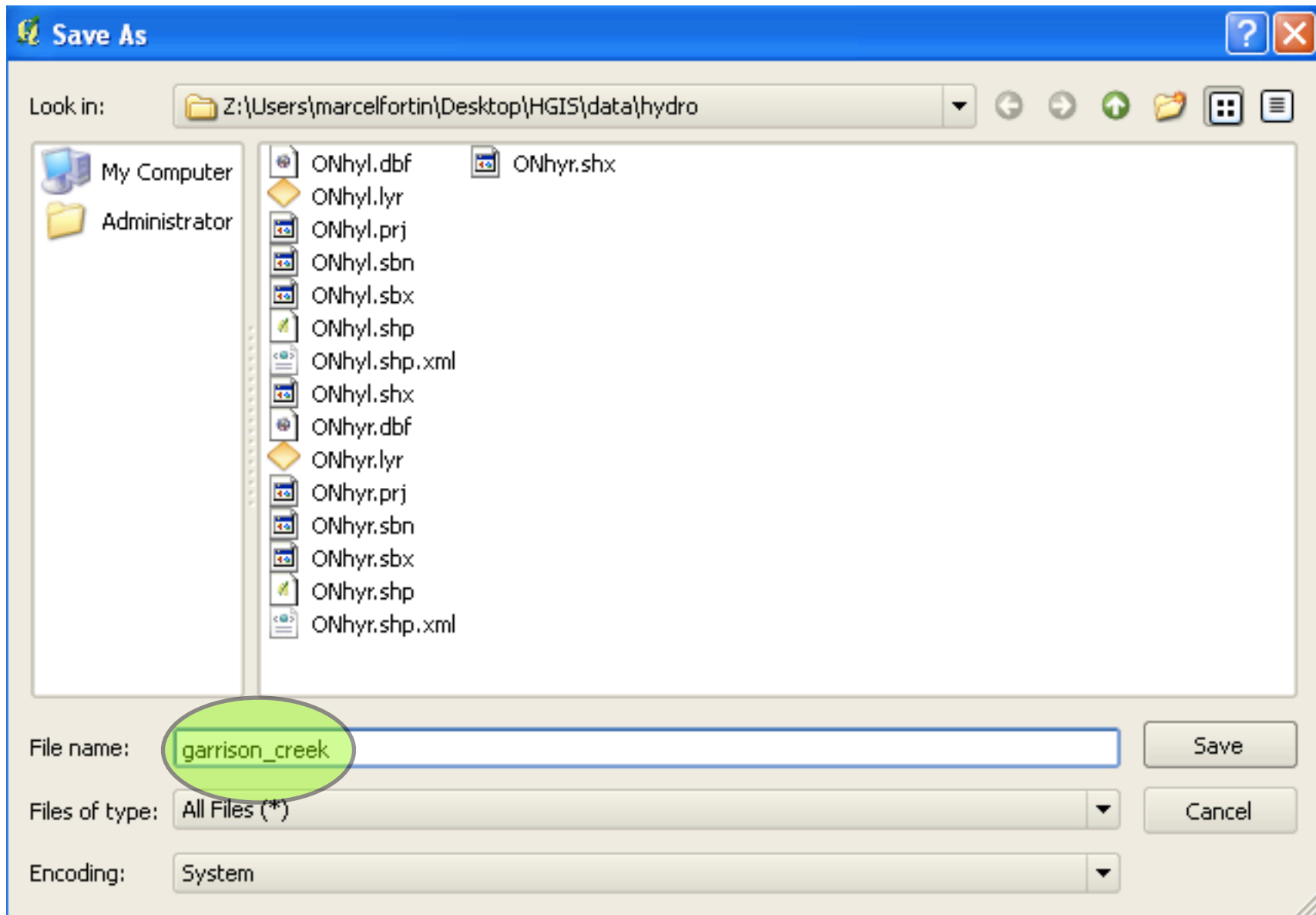
[Remove selected attribute](#)

**2** OK

Cancel

Help

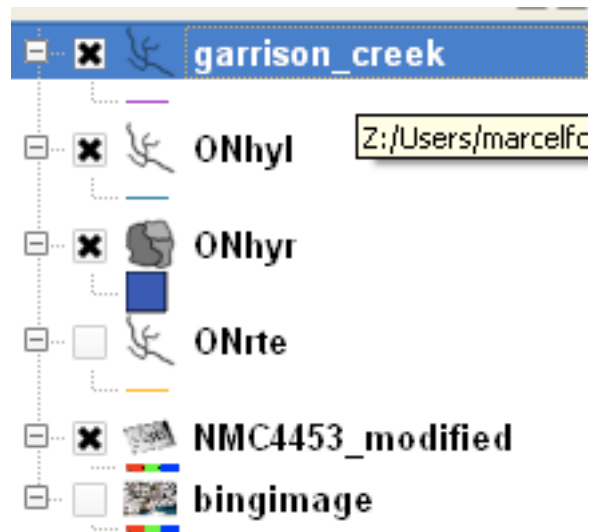








Click once on garrison\_creek to highlight





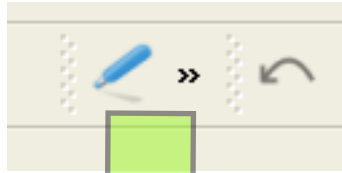


Click and drag toolbox



Click to toggle editing



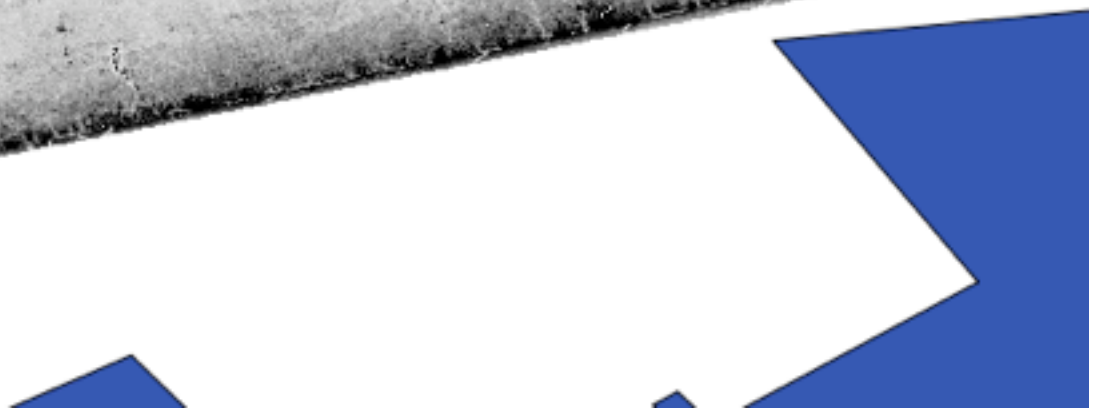
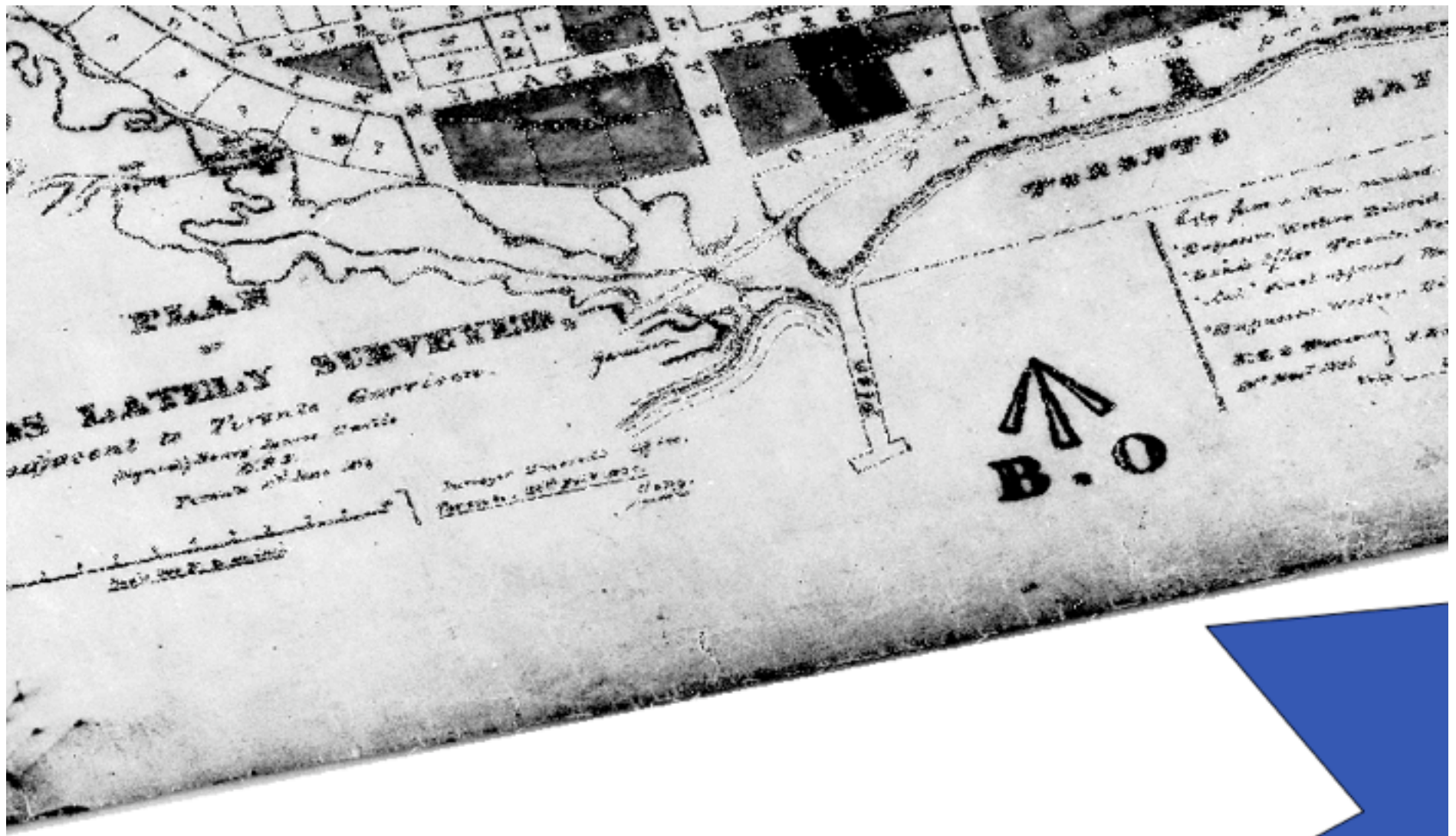


Click and drag toolbox



Click to toggle editing



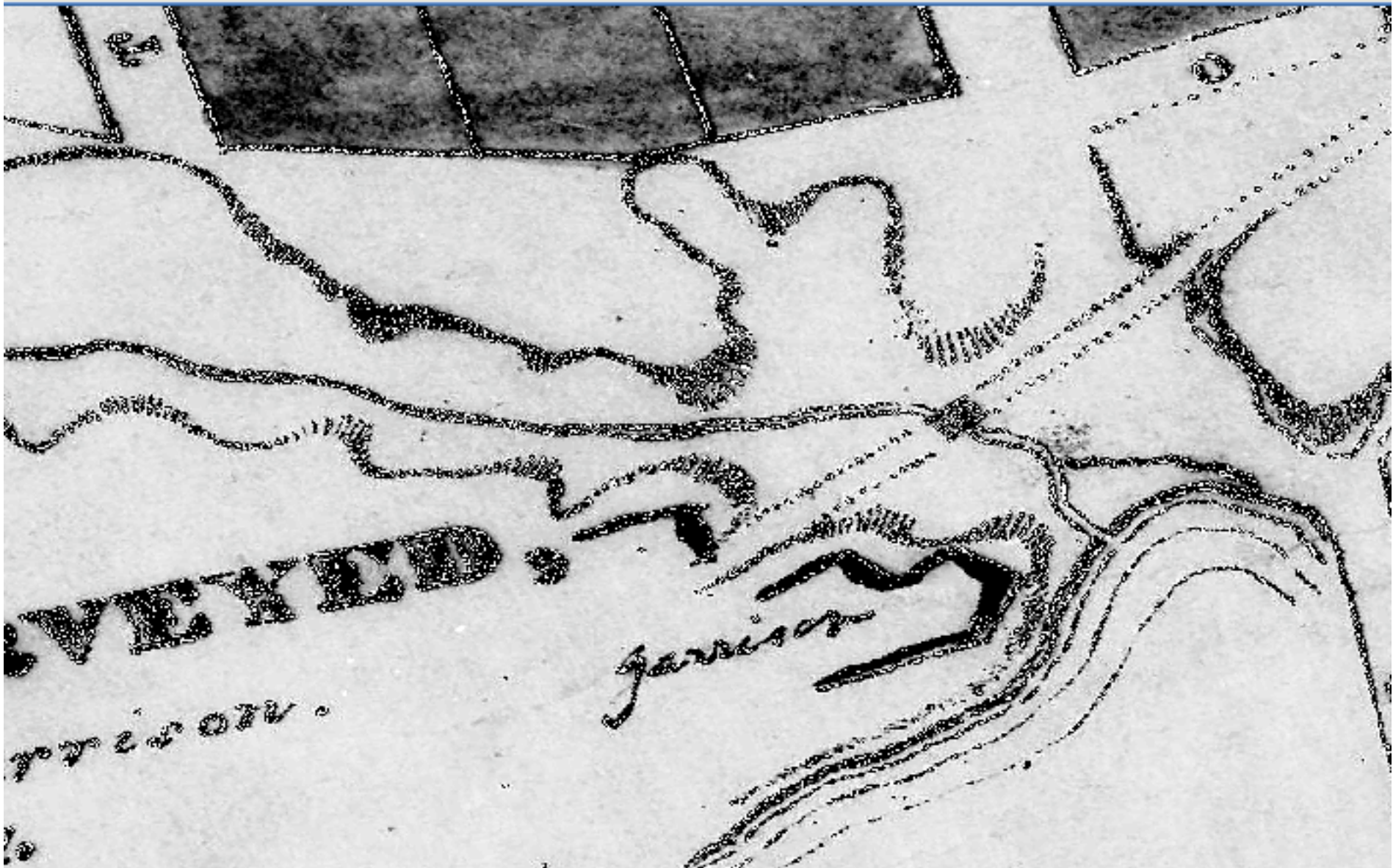


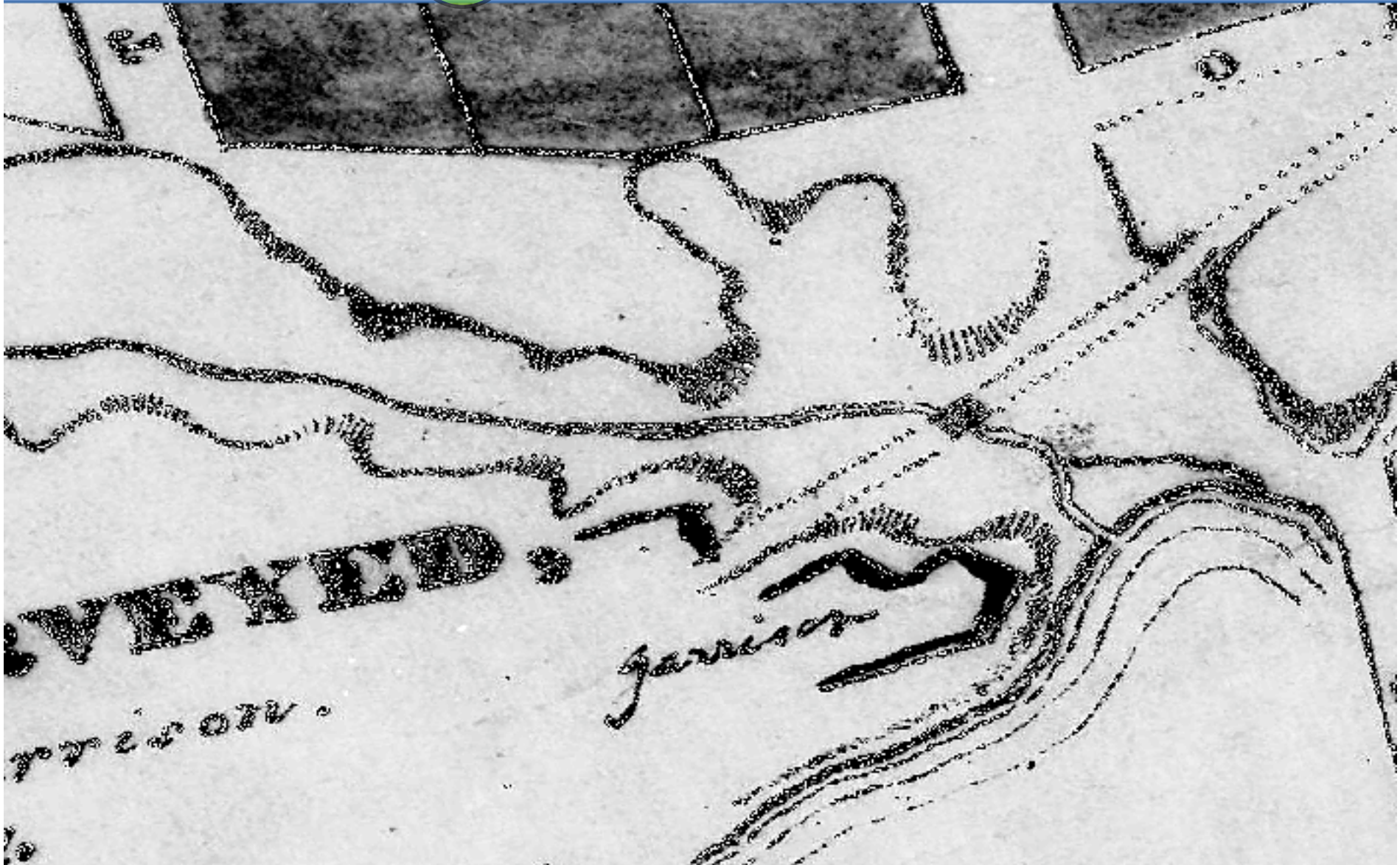


PLAN  
OF  
RECENTLY SURVEYED  
subject to T. W. G. GARRISON.  
By J. H. G. GARRISON  
D. D. S.  
Done at New York  
this 10th day of June 1854

City of New York, recorded.  
Deputy Western District  
Judge of the Court of Sessions, the  
said Court of Sessions, the  
Deputy Western District  
Judge of the Court of Sessions, the  
said Court of Sessions, the  
said Court of Sessions, the

B.O.









**JANISON**

*JANISON*

arrison.

220





































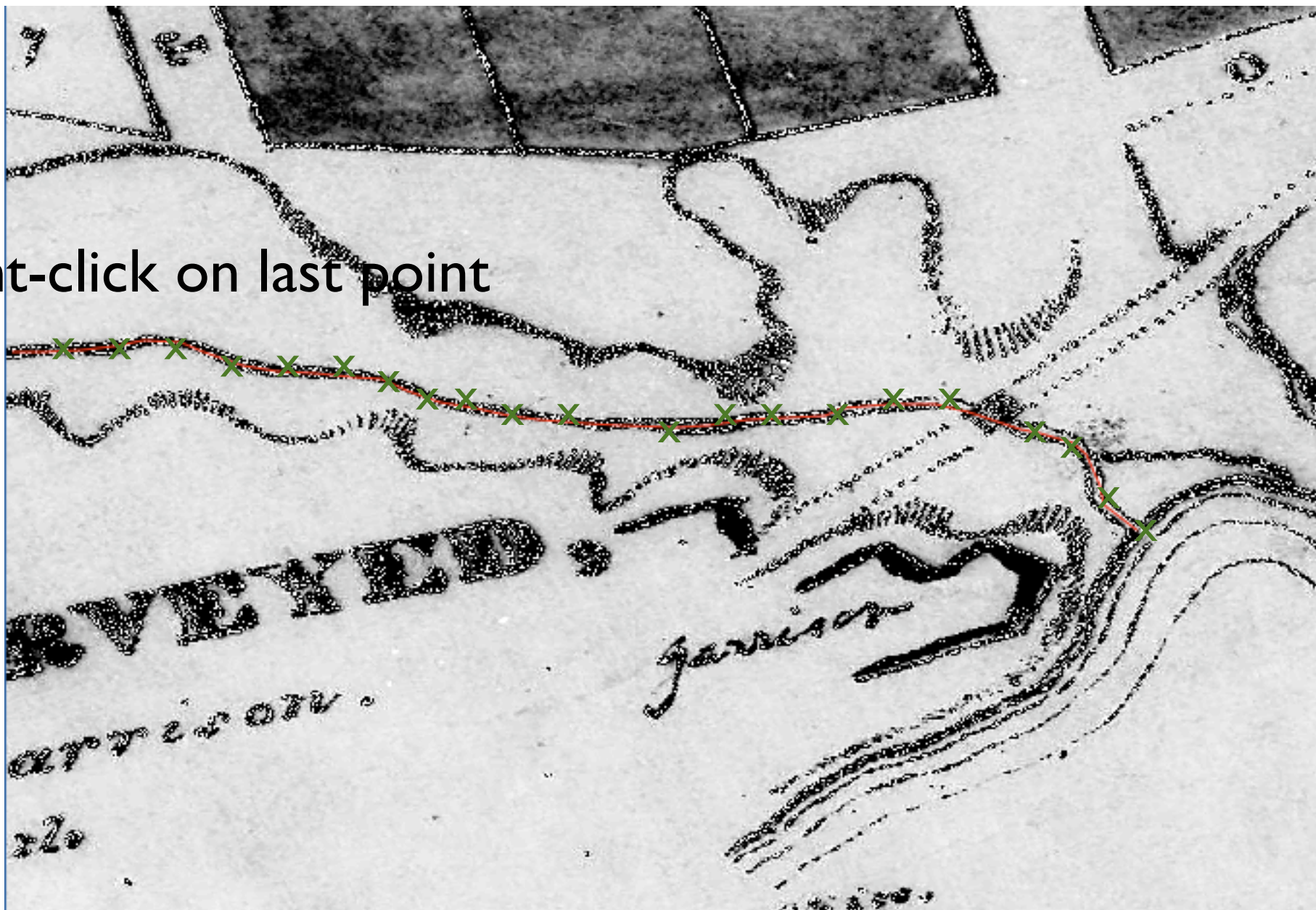








Right-click on last point

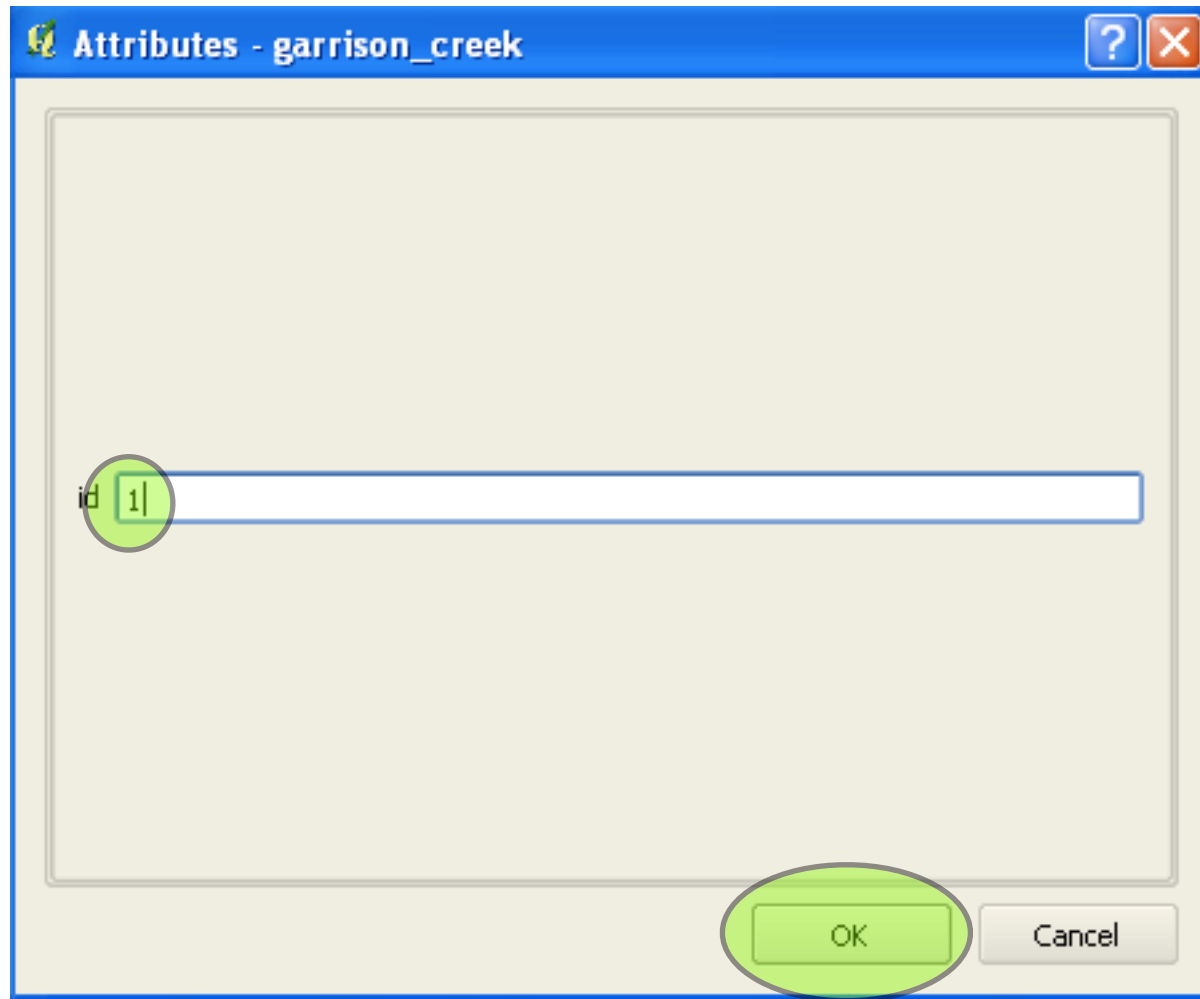


Attributes - garrison\_creek

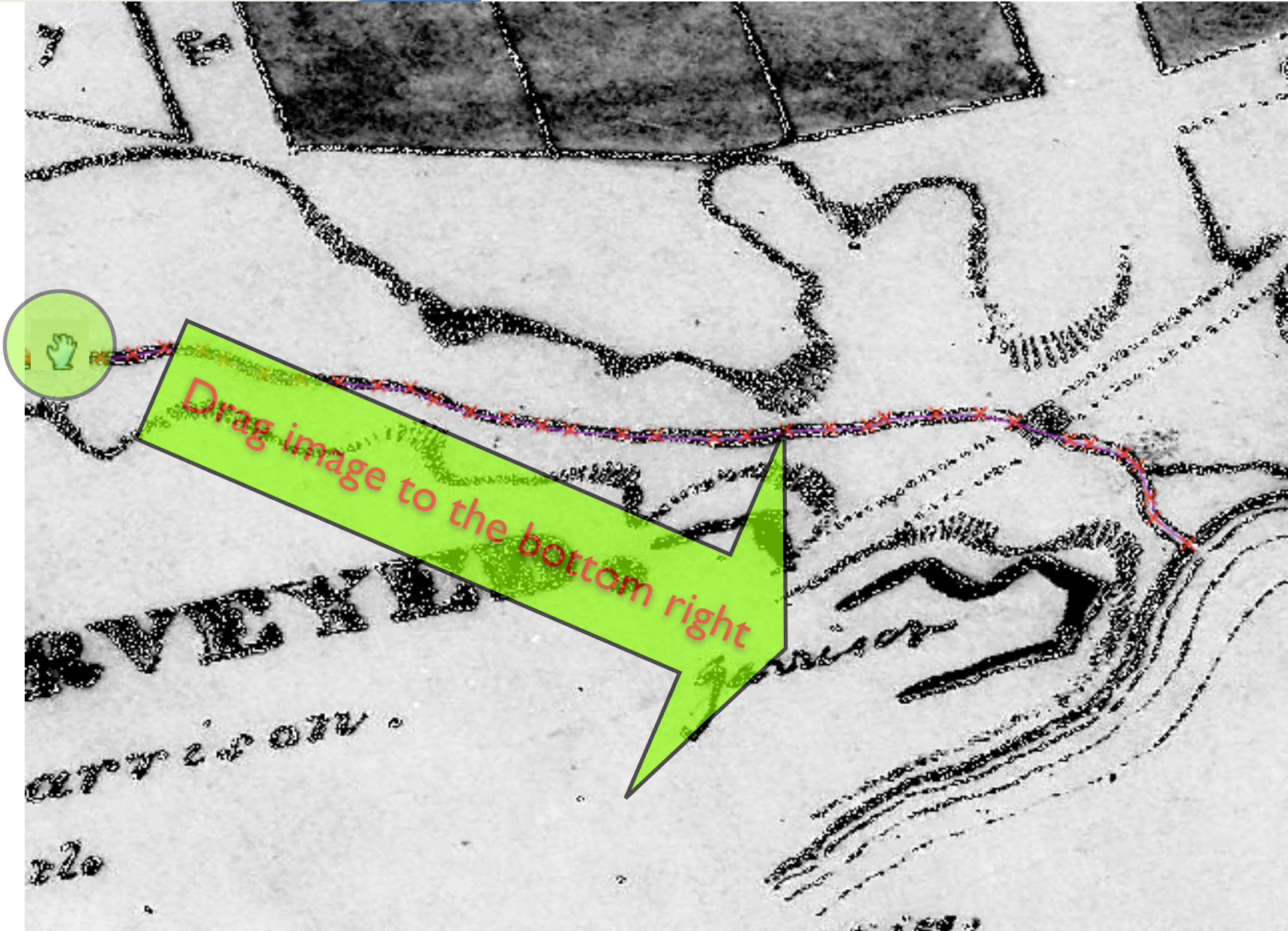
id 1

OK Cancel

A screenshot of a Windows-style dialog box. The title bar is blue and contains the text "Attributes - garrison\_creek" on the left, and a question mark icon and a close (X) icon on the right. The main area of the dialog is a light beige color. In the lower-left portion of this area, there is a text input field with a blue border. The label "id" is positioned to the left of the input field, and the number "1" is entered inside it. At the bottom right of the dialog, there are two buttons: "OK" and "Cancel".







Drag image to the bottom right















































































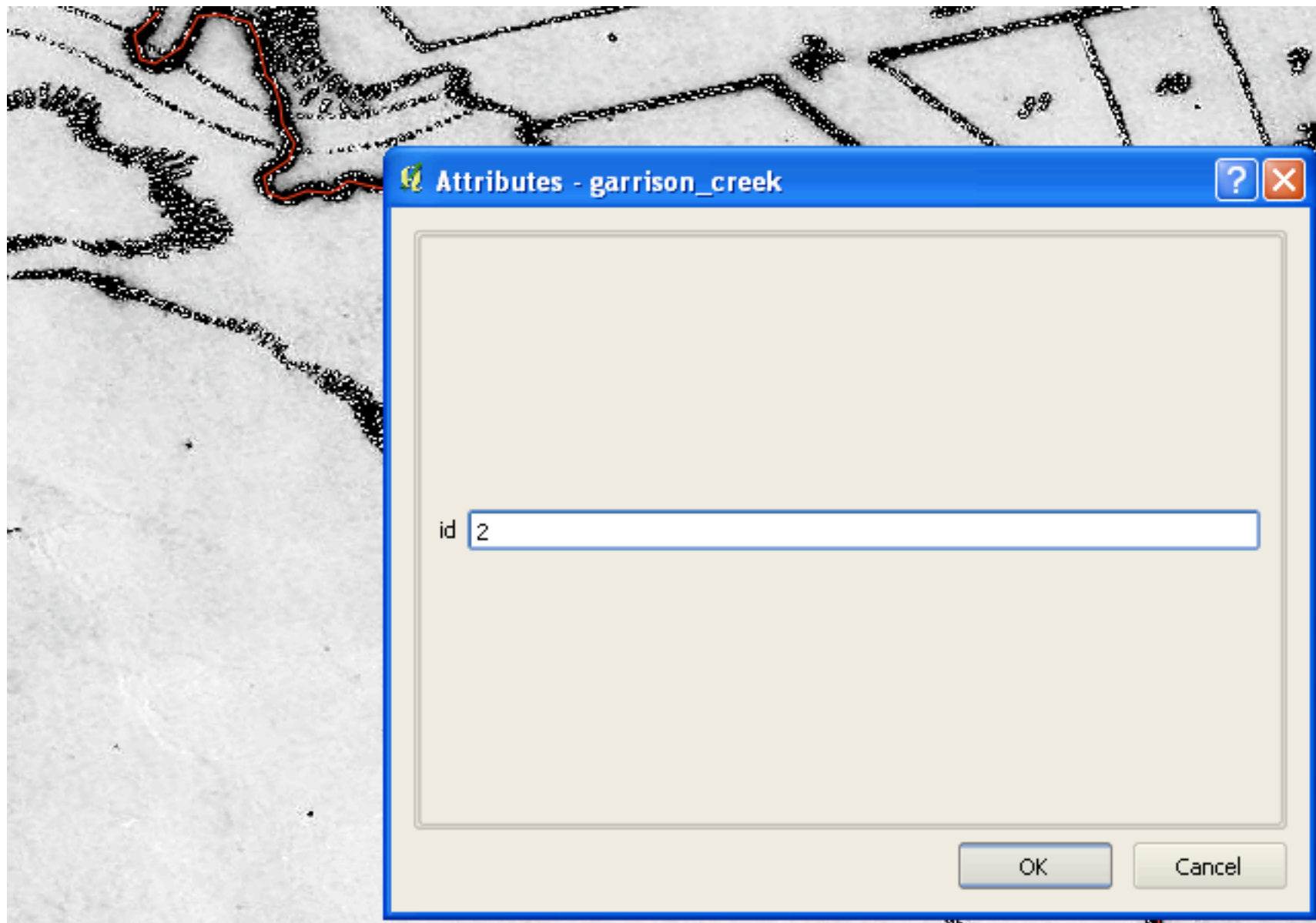
PLAN

ADOUVO  
N  
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N I









Attributes - garrison\_creek

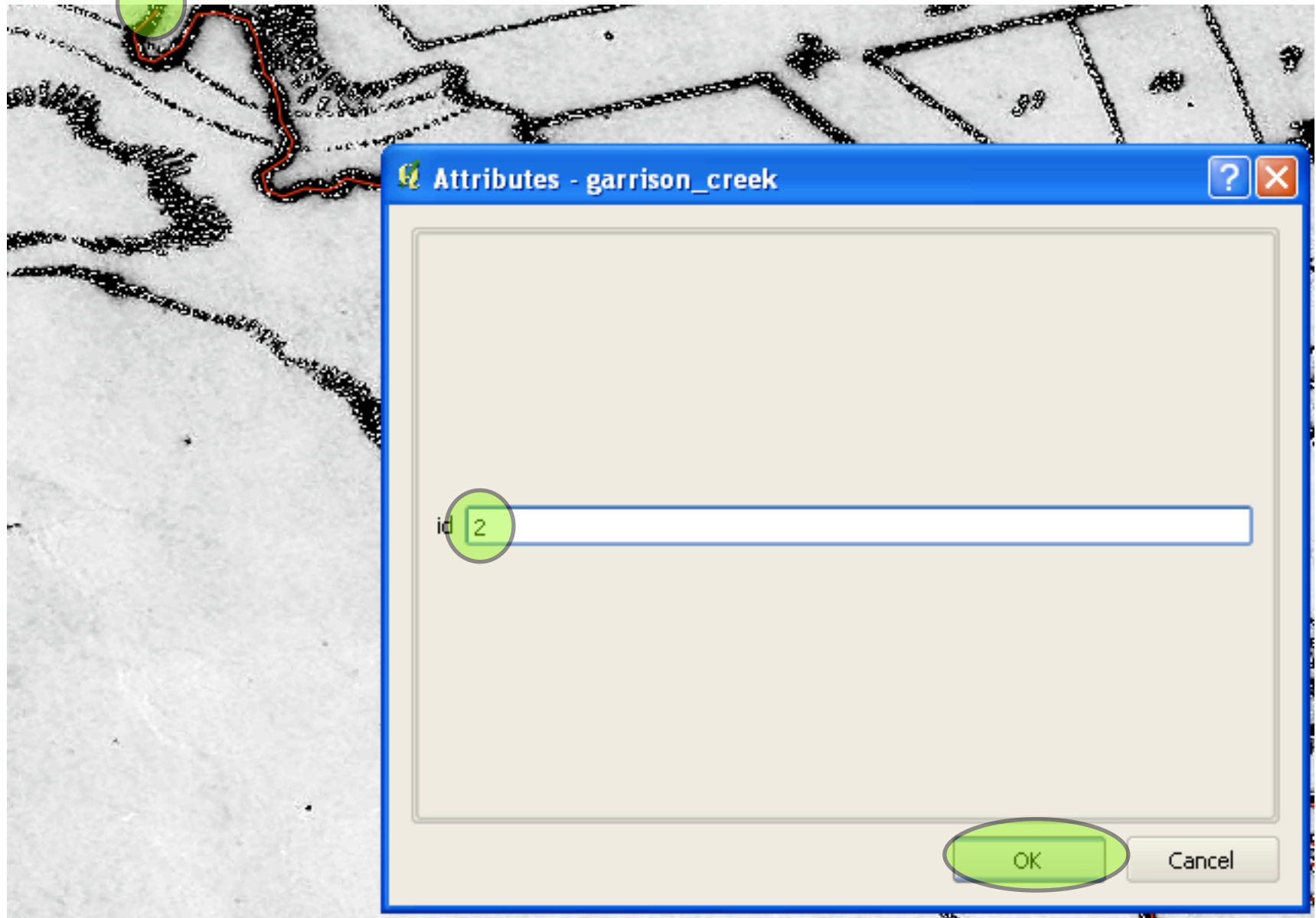
id

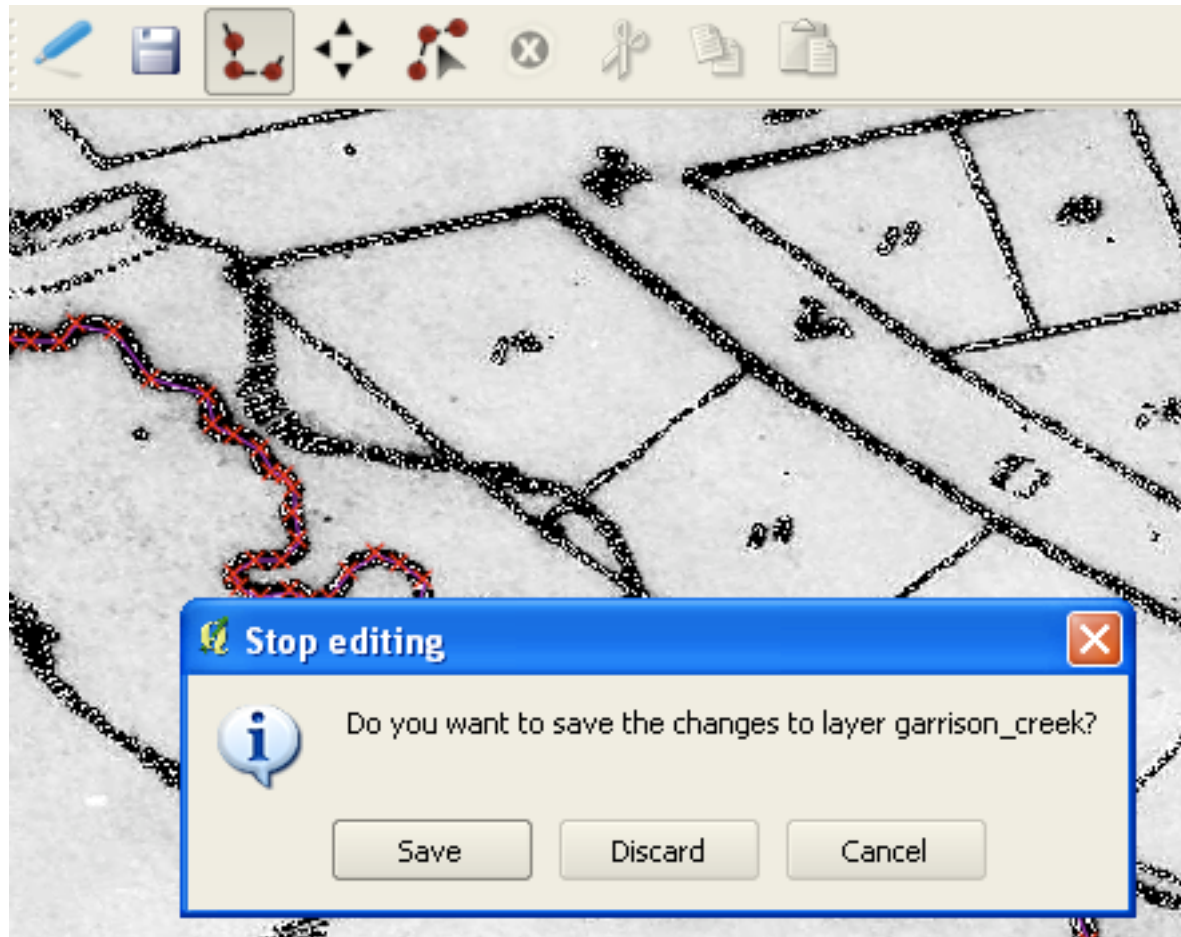
2

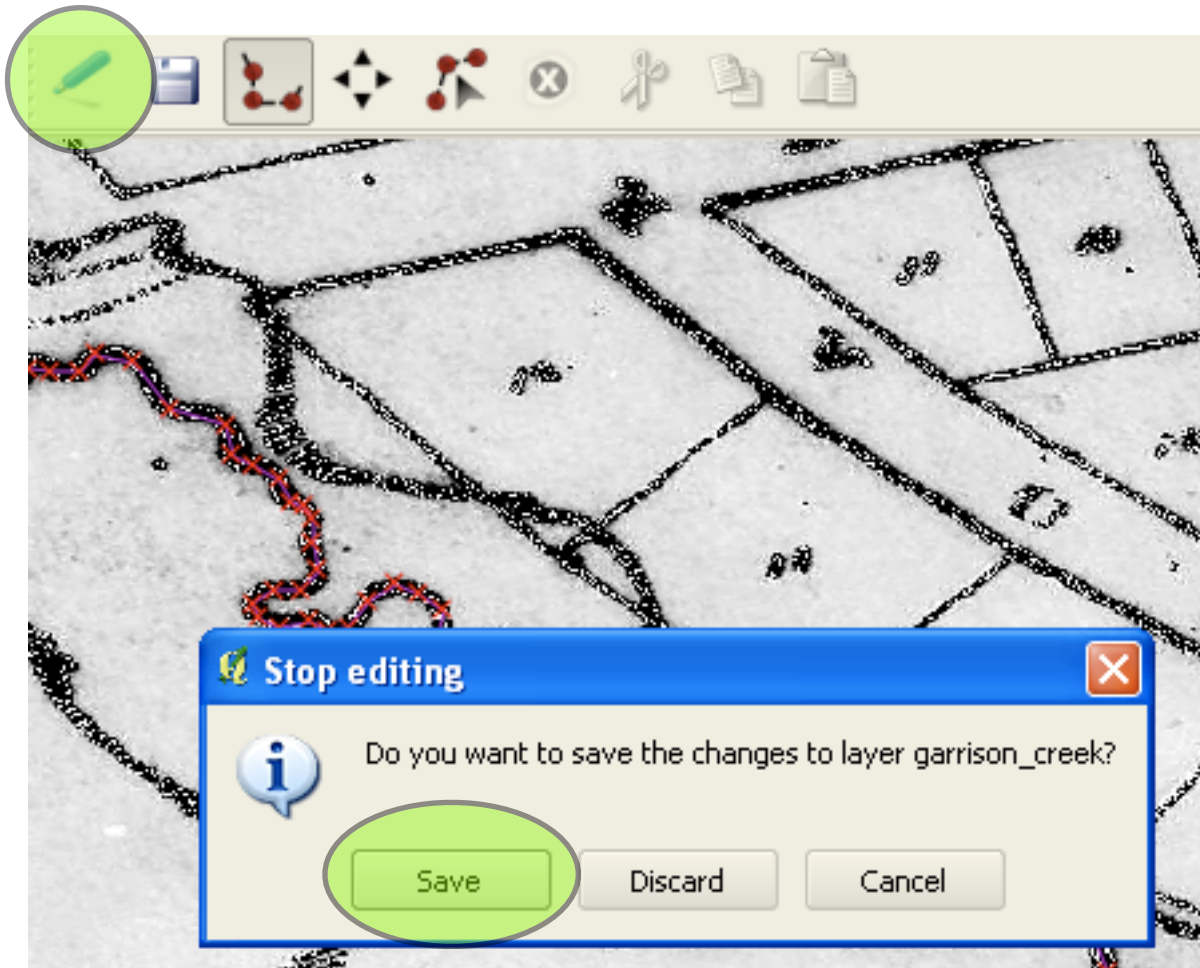
OK

Cancel

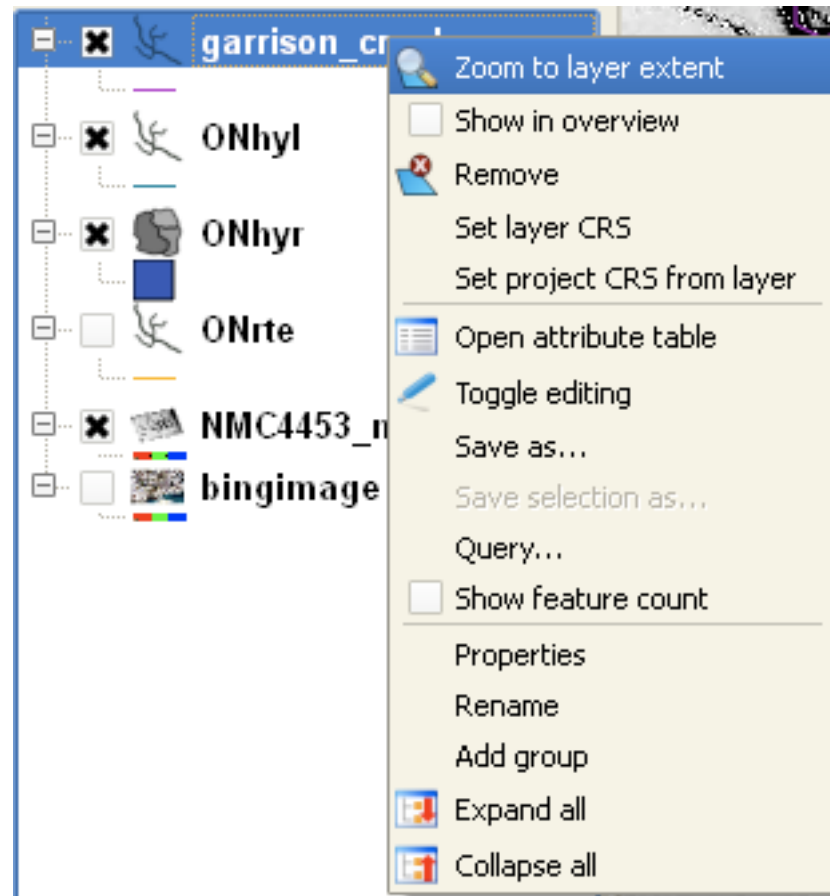
Right-click on last point











The image shows a screenshot of a GIS application's layer list and context menu. The layer list on the left contains the following items:

- garrison\_cr** (selected)
- ONhyl** (toggle off)
- ONhvr** (toggle off)
- ONrte** (toggle off)
- NMC4453\_n** (toggle off)
- bingimage** (toggle on)

The context menu for the selected layer includes the following options:

- Zoom to layer extent** (highlighted with a green oval)
- Show in overview
- Remove
- Set layer CRS
- Set project CRS from layer
- Open attribute table
- Toggle editing
- Save as...
- Save selection as...
- Query...
- Show feature count
- Properties
- Rename
- Add group
- Expand all
- Collapse all

Two green arrows point to the 'ONhyl' and 'bingimage' layers in the list, with labels '2 Toggle off' and '3 Toggle on' respectively.

Layers

- garrison\_creek
- ONhyl
- ONhyr
- ONrte
- NMC4453\_modified
- bingimage

### Layer Properties - garrison\_creek

Style | Labels | Fields | General | Metadata | Actions


Single Symbol | Symbol levels | Old symbology

Unit: Millimeter | Width: 1.50

Transparency: 0% | Color: Change

Change... | Advanced | Save as style

Saved styles | Style manager...

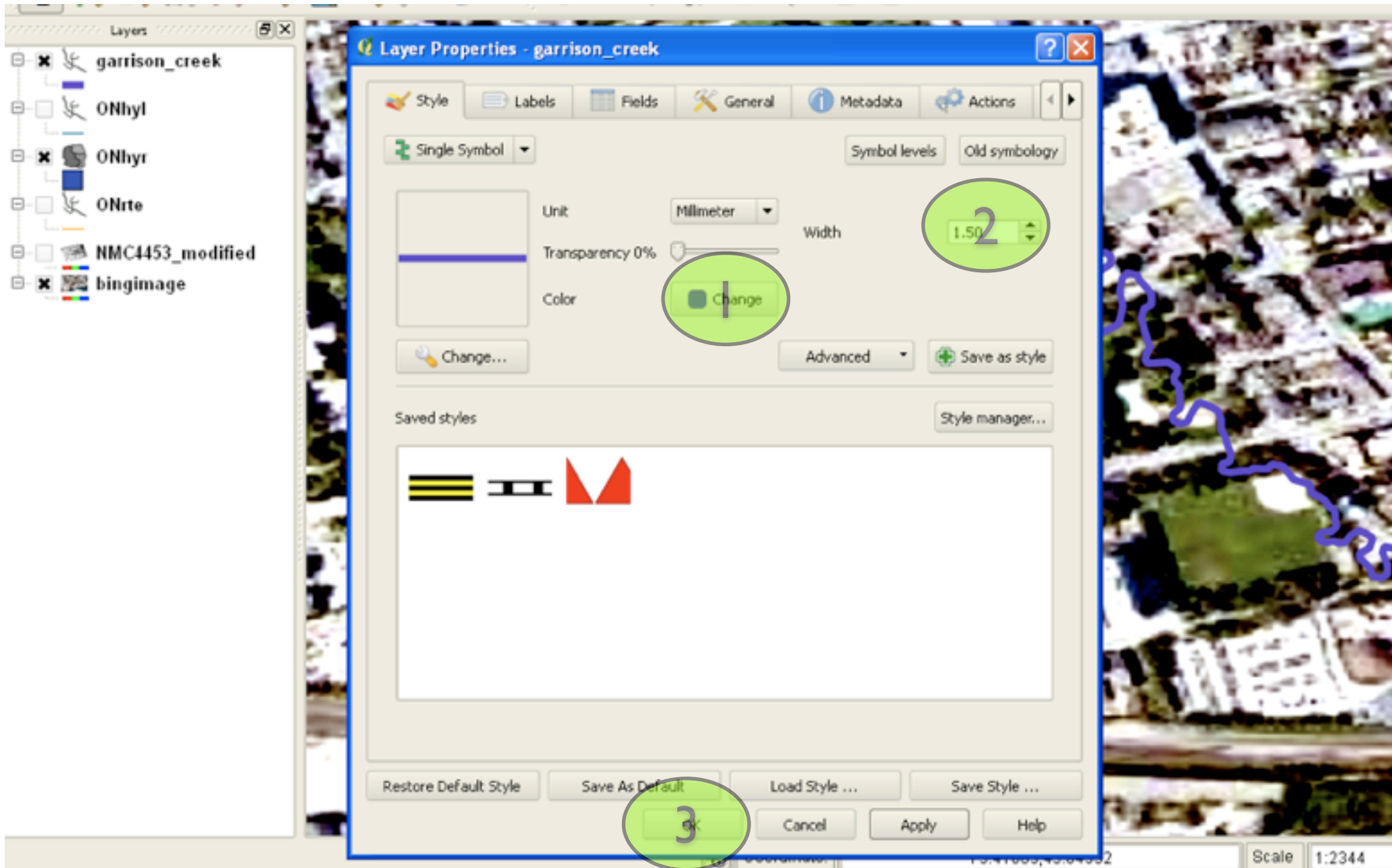


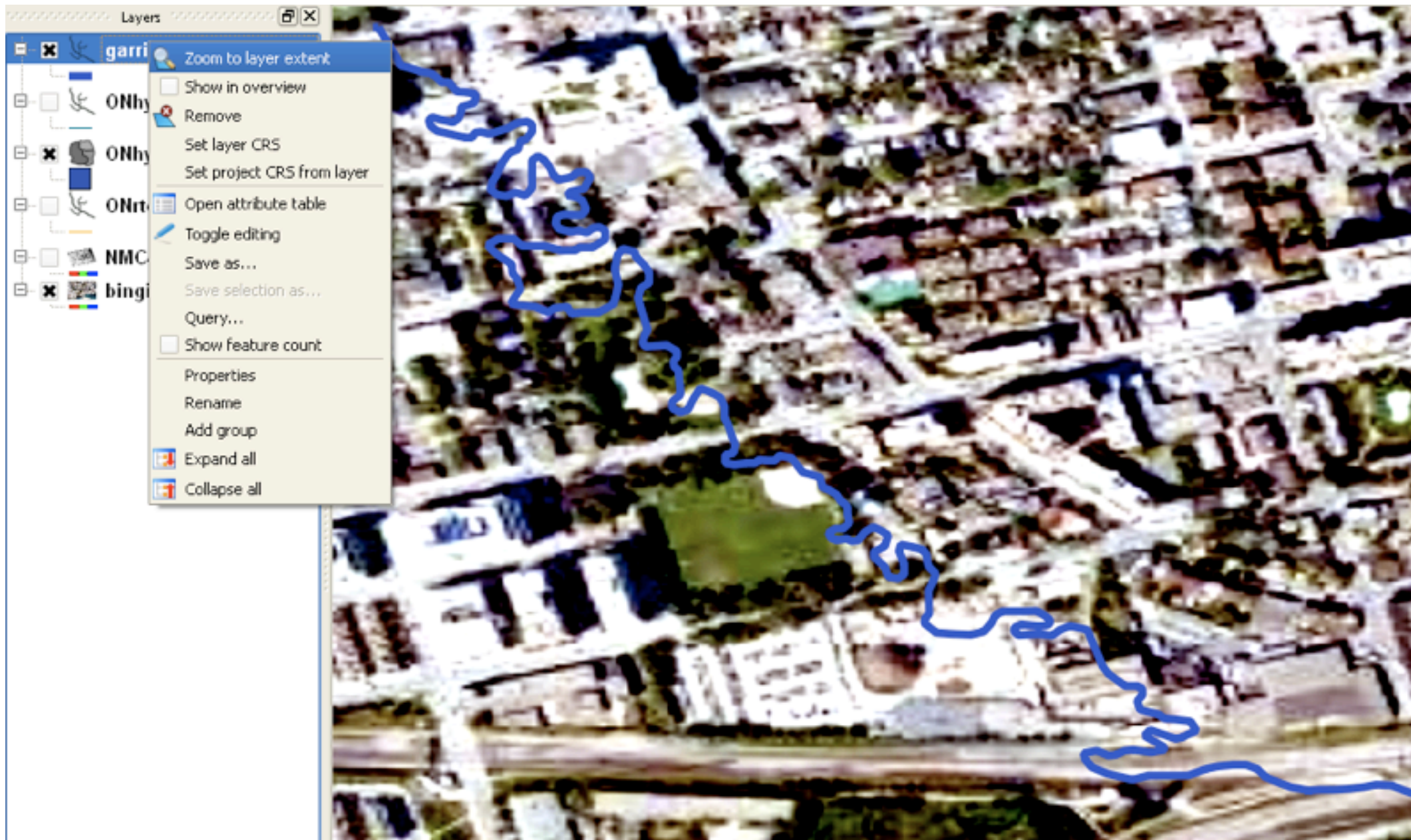
Restore Default Style | Save As Default | Load Style ... | Save Style ...

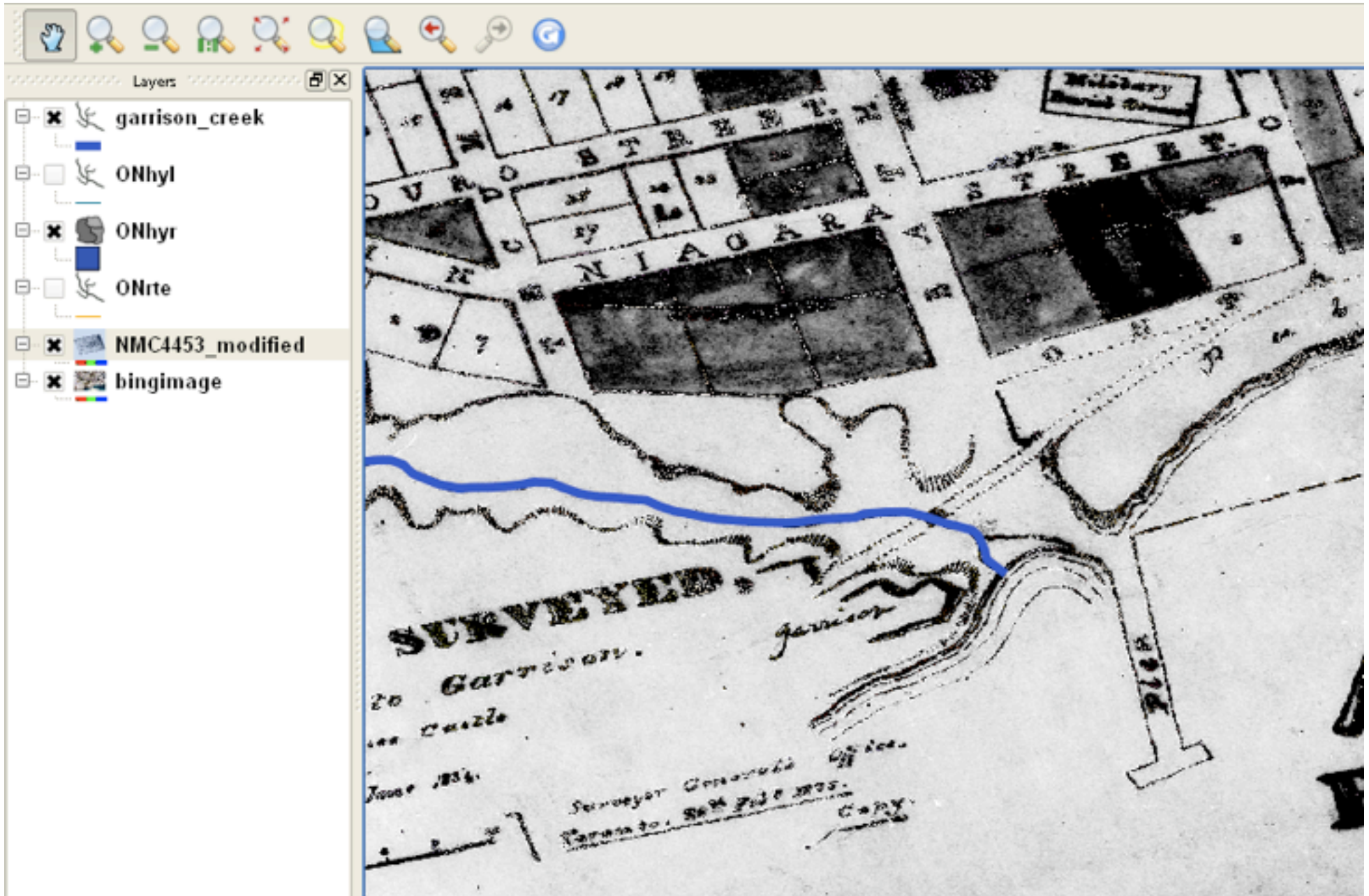
OK | Cancel | Apply | Help

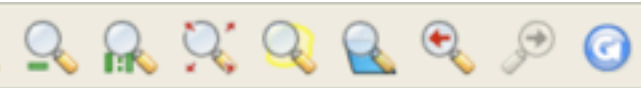


Scale 1:2344



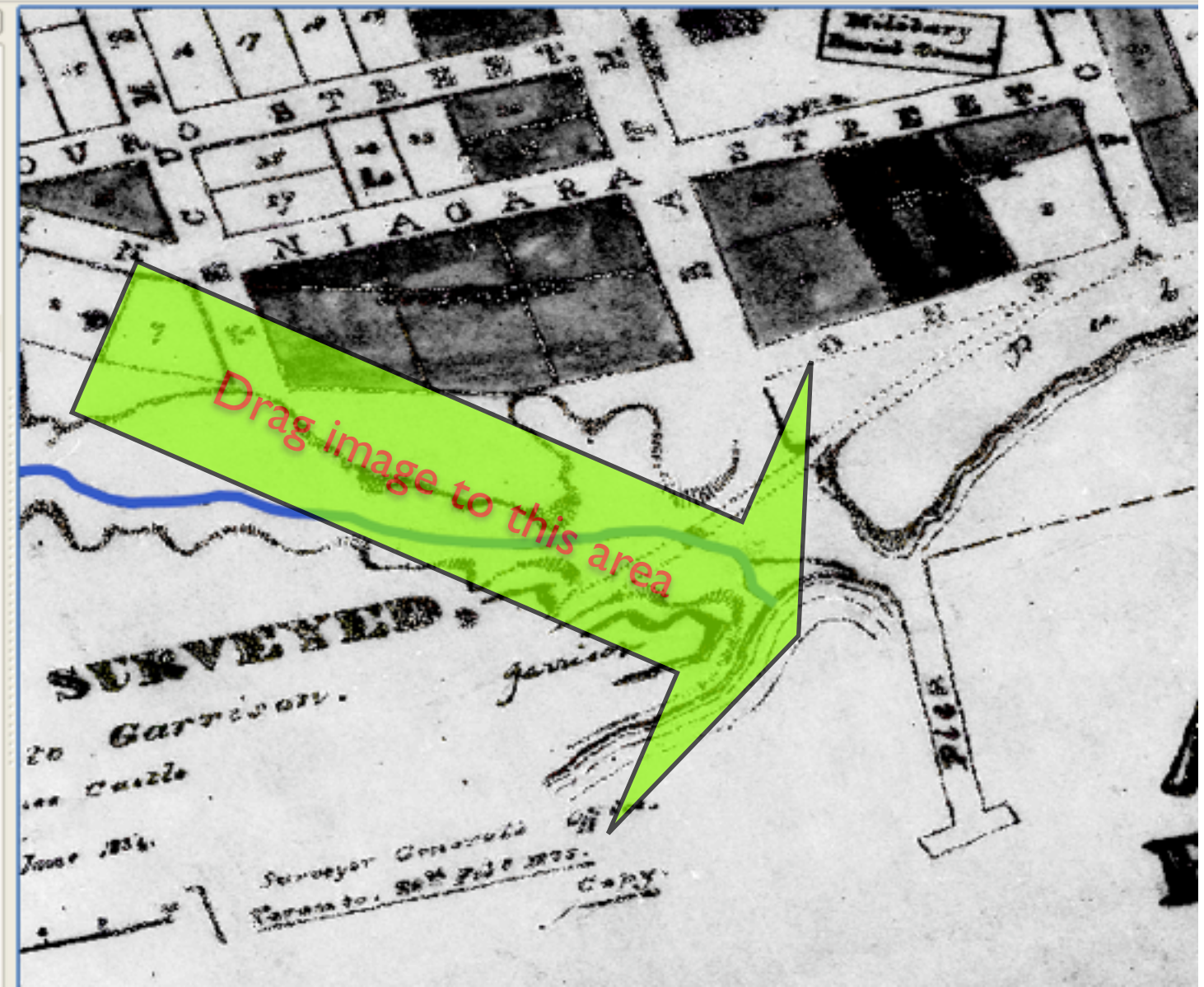






Layers

- garrison\_creek
- ONhyl
- ONhyr
- ONrte
- NMC4453\_modified
- bingimage

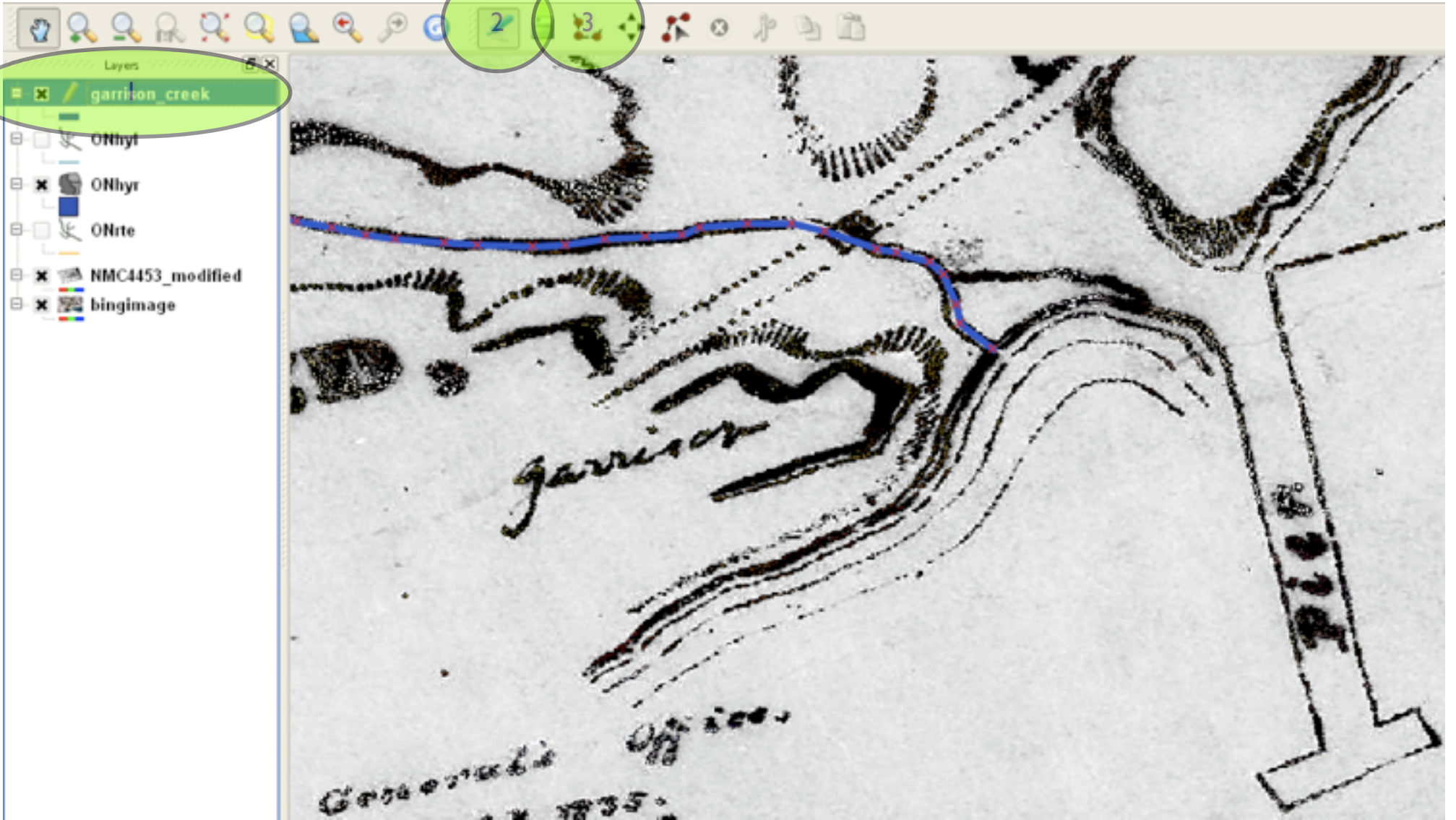


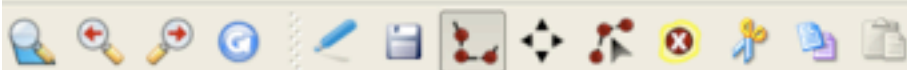
Drag image to this area

**SURVEYED**  
to Garrison.  
see table  
June 1854.  
Surveyor General  
Toronto. See file nos.  
Copy









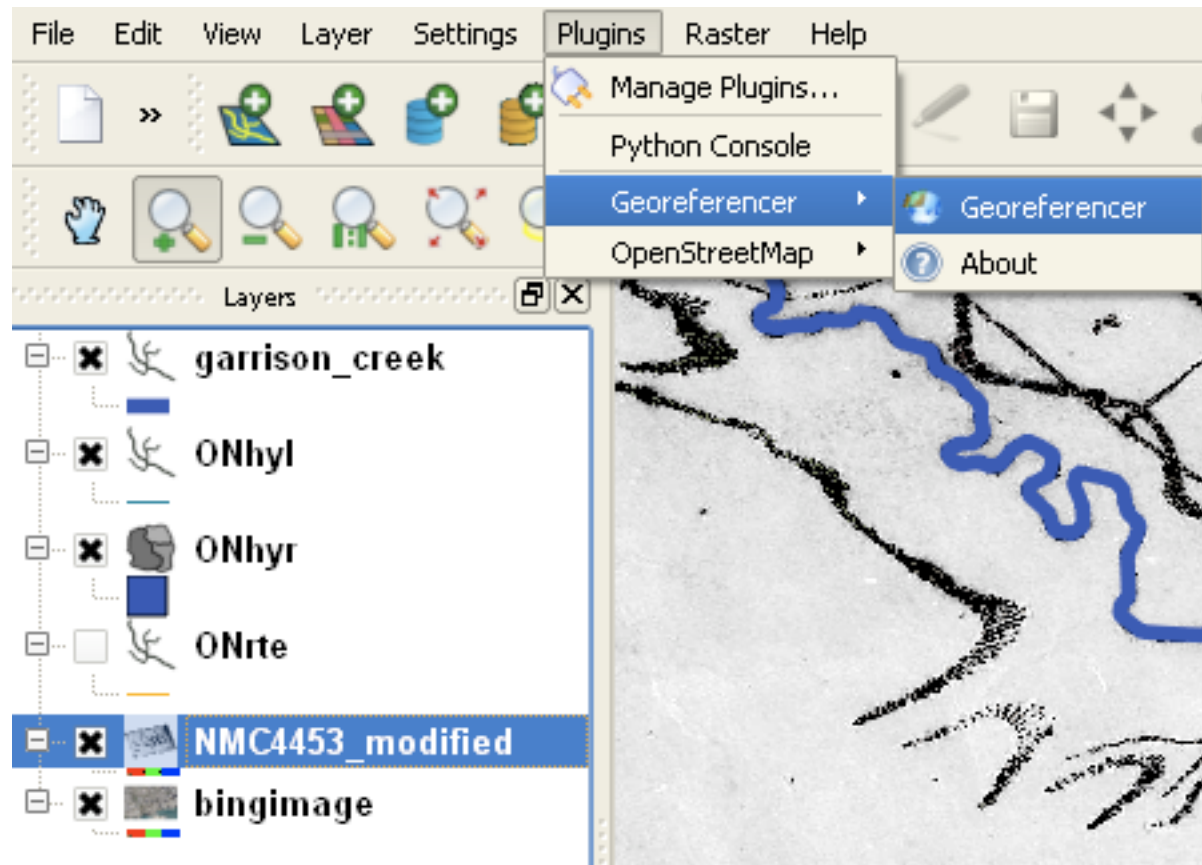
**Stop editing** ✕

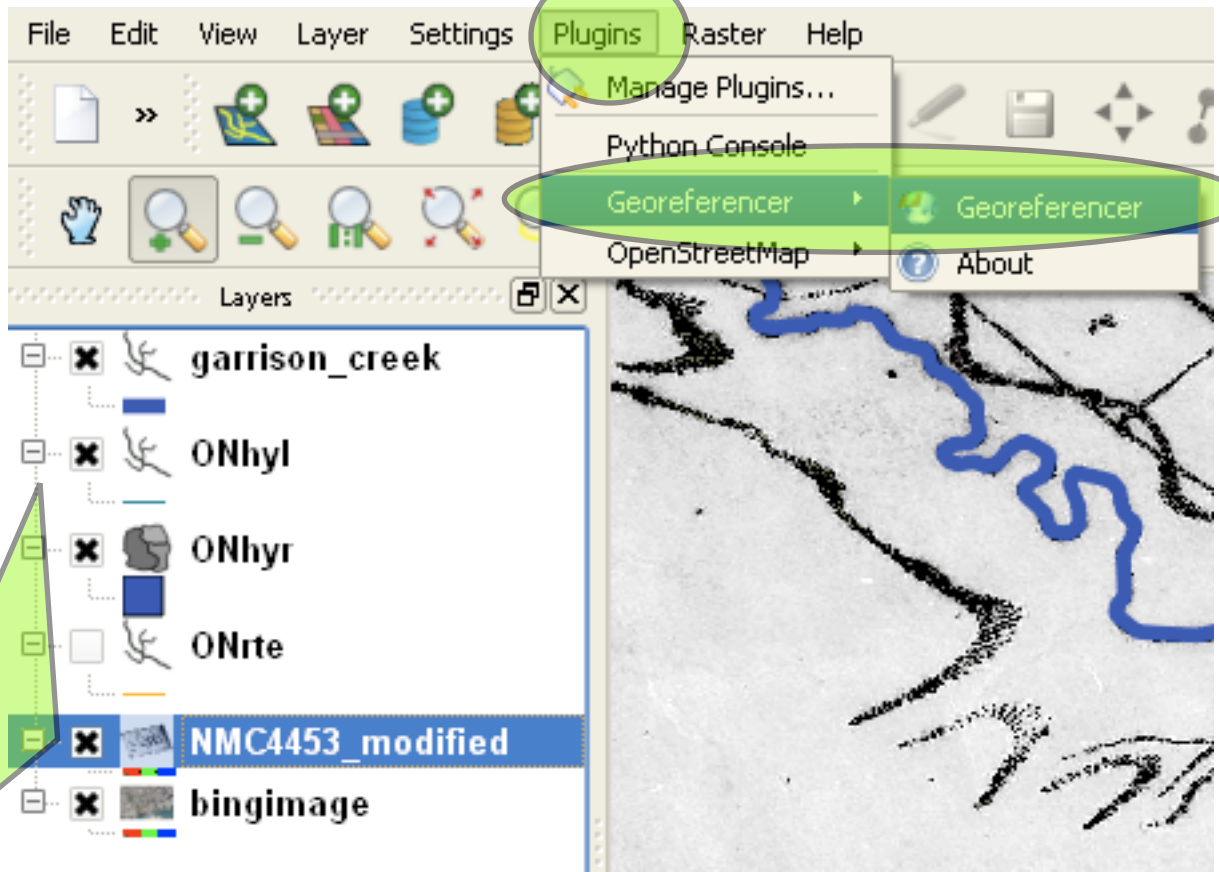
**i** Do you want to save the changes to layer garrison\_creek?



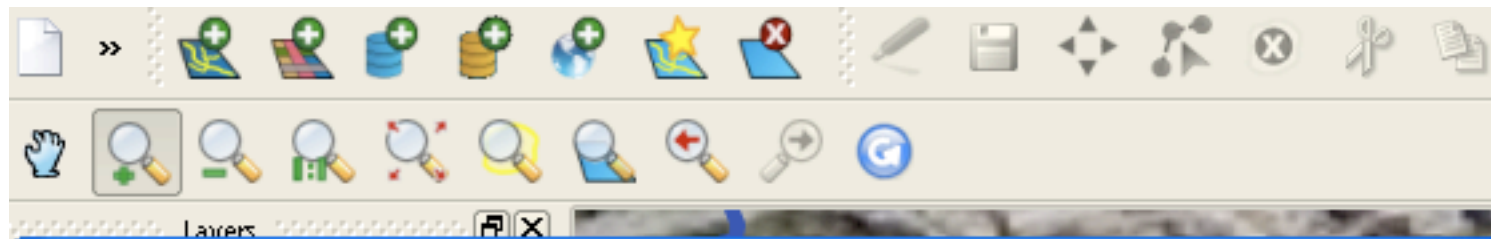
**Stop editing** ✕

i Do you want to save the changes to layer garrison\_creek?





Toggle off



### Open a GDAL Supported Raster Data Source

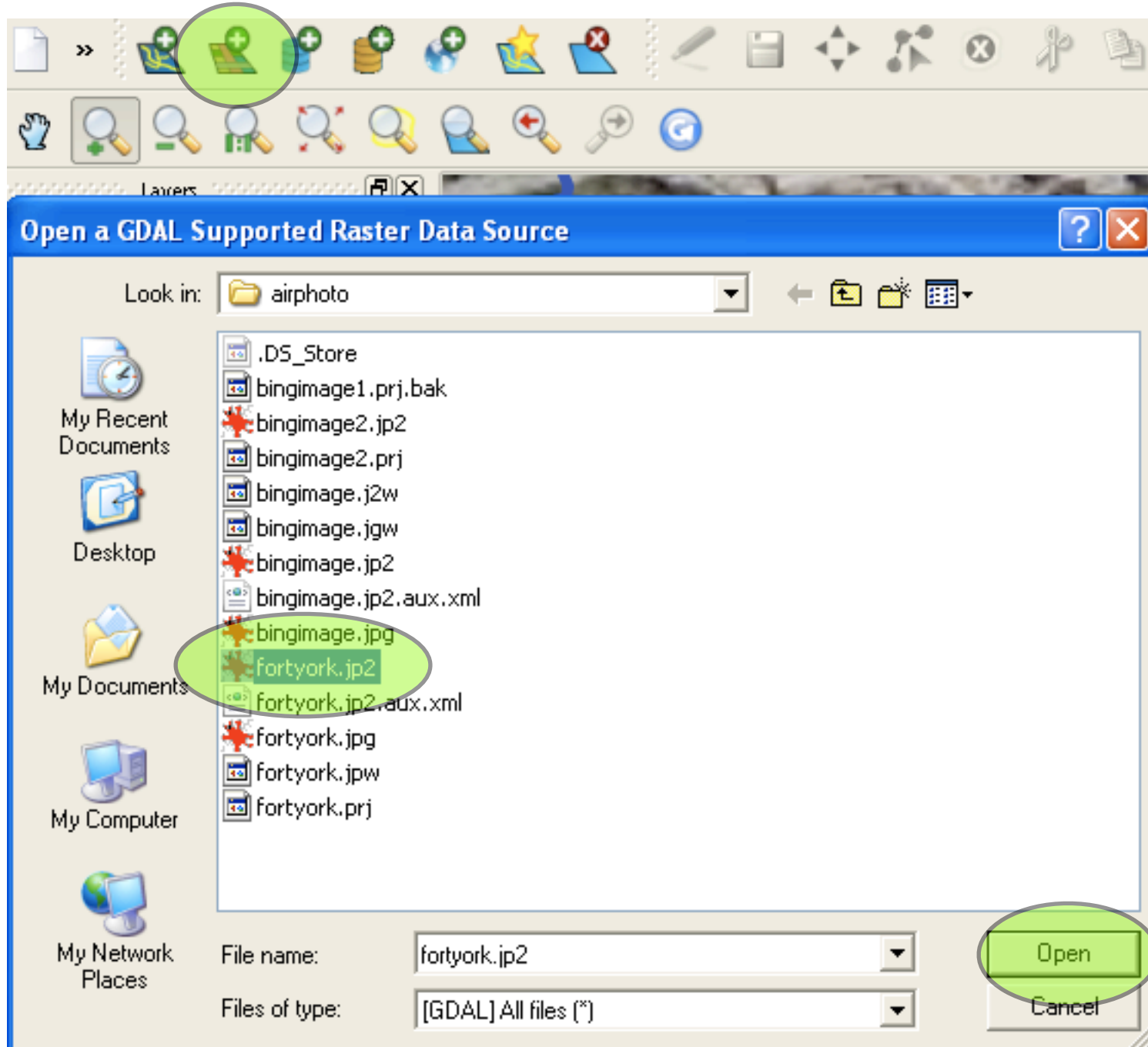
Look in:

- My Recent Documents
- Desktop
- My Documents
- My Computer
- My Network Places

- .DS\_Store
- bingimage1.prj.bak
- bingimage2.jp2
- bingimage2.prj
- bingimage.j2w
- bingimage.jgw
- bingimage.jp2
- bingimage.jp2.aux.xml
- bingimage.jpg
- fortyork.jp2
- fortyork.jp2.aux.xml
- fortyork.jpg
- fortyork.jpw
- fortyork.prj

File name:

Files of type:



Layers

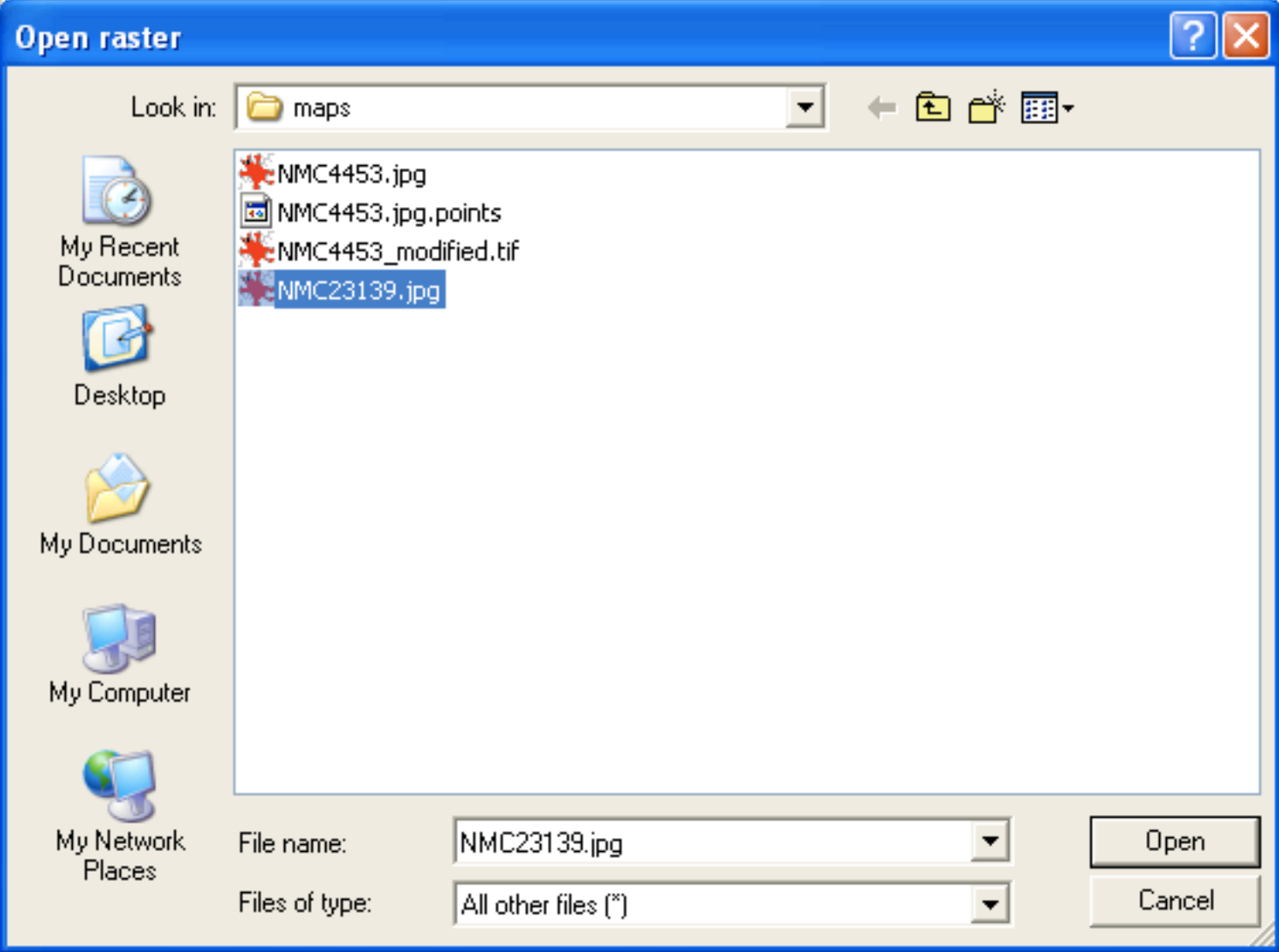
- fo
- ga
- 01
- 01
- 01
- 01
- NI
- bi

Zoom to layer extent

- Zoom to best scale (100%)
- Stretch using current extent
- Show in overview
- Remove
- Set layer CRS
- Set project CRS from layer
- Properties
- Rename
- Add group
- Expand all
- Collapse all







Georeferencer

File Edit View Settings Help



### Open raster

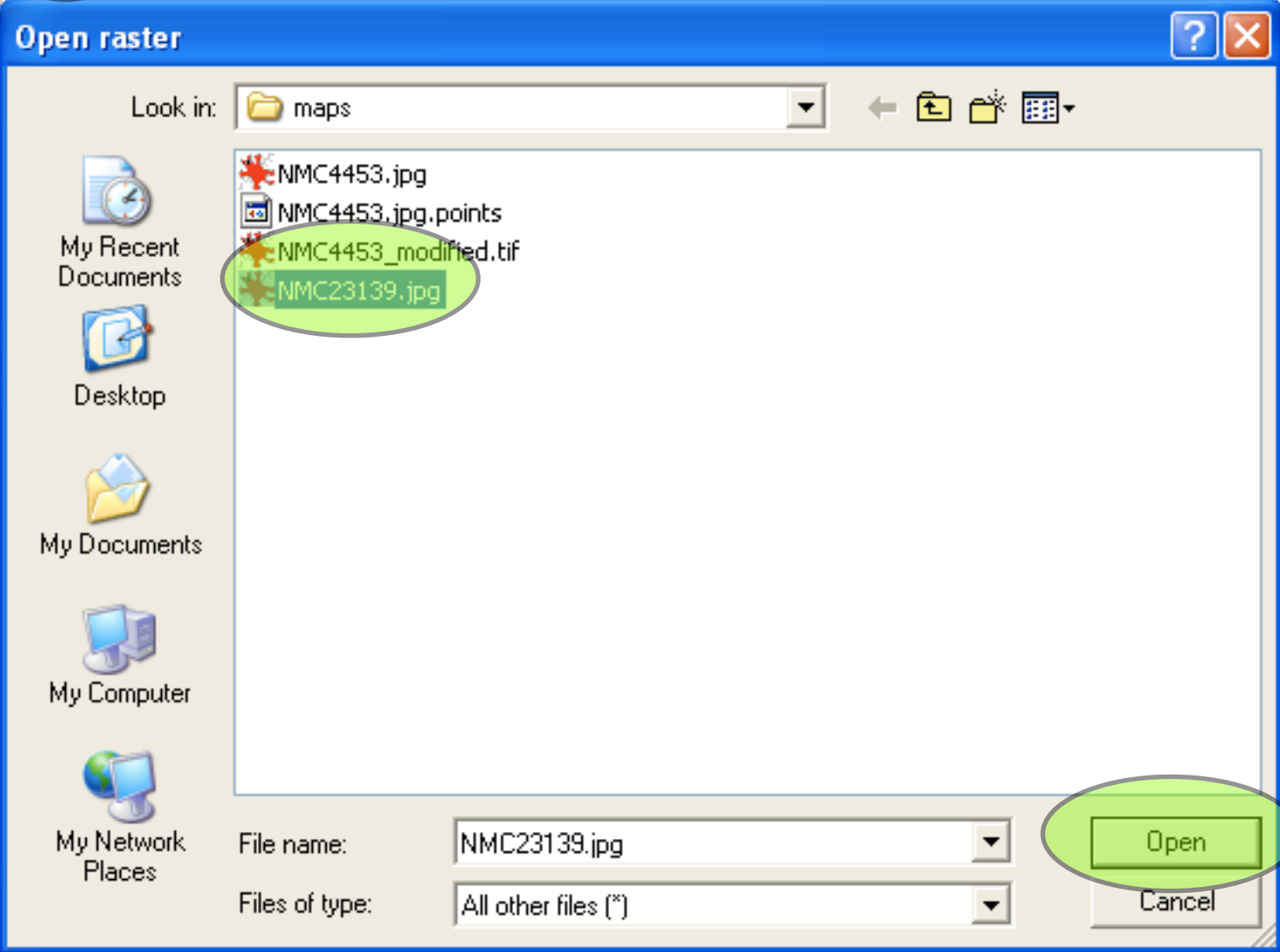
Look in: maps

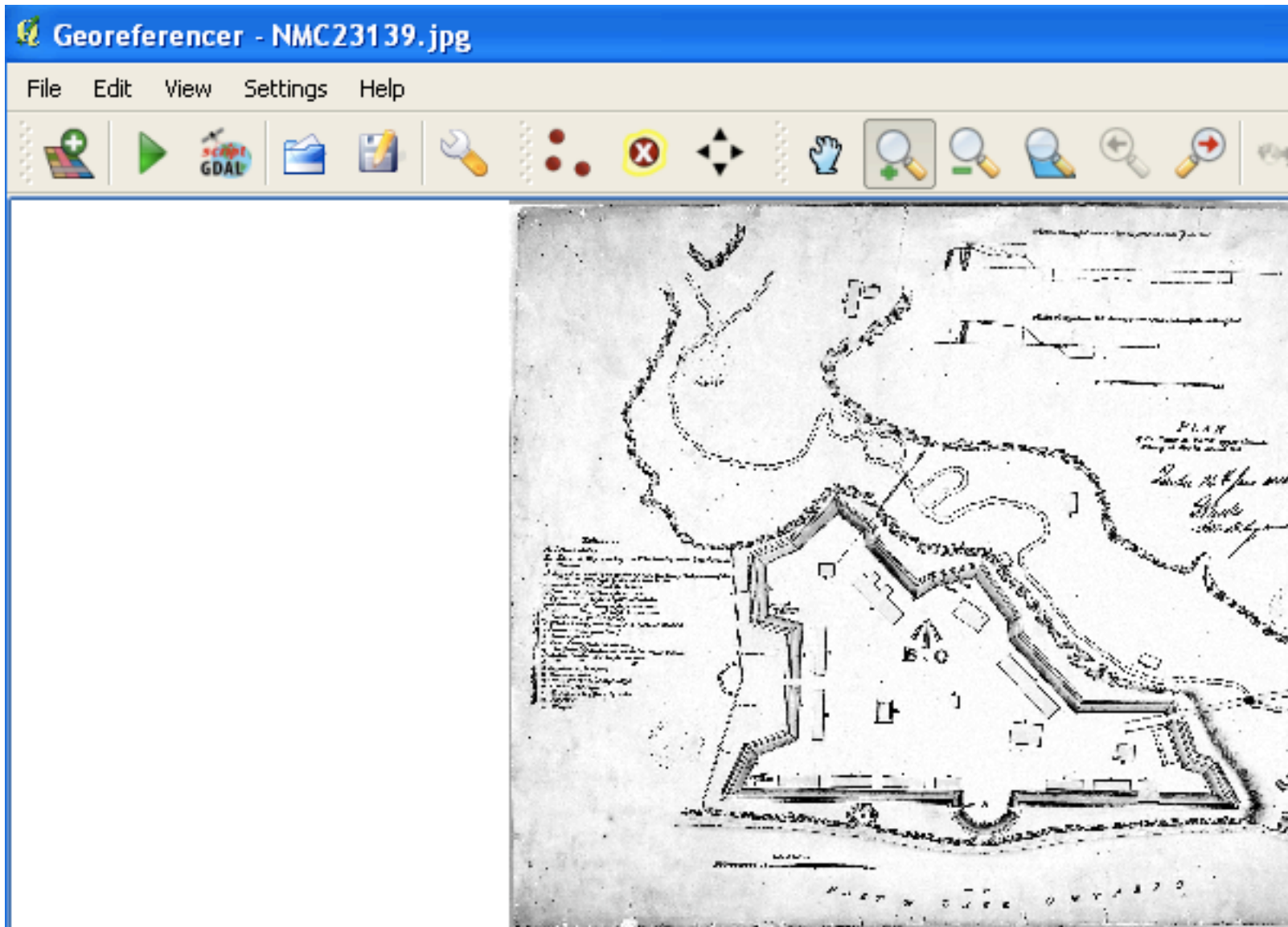
- NMC4453.jpg
- NMC4453.jpg.points
- NMC4453\_modified.tif
- NMC23139.jpg

File name: NMC23139.jpg

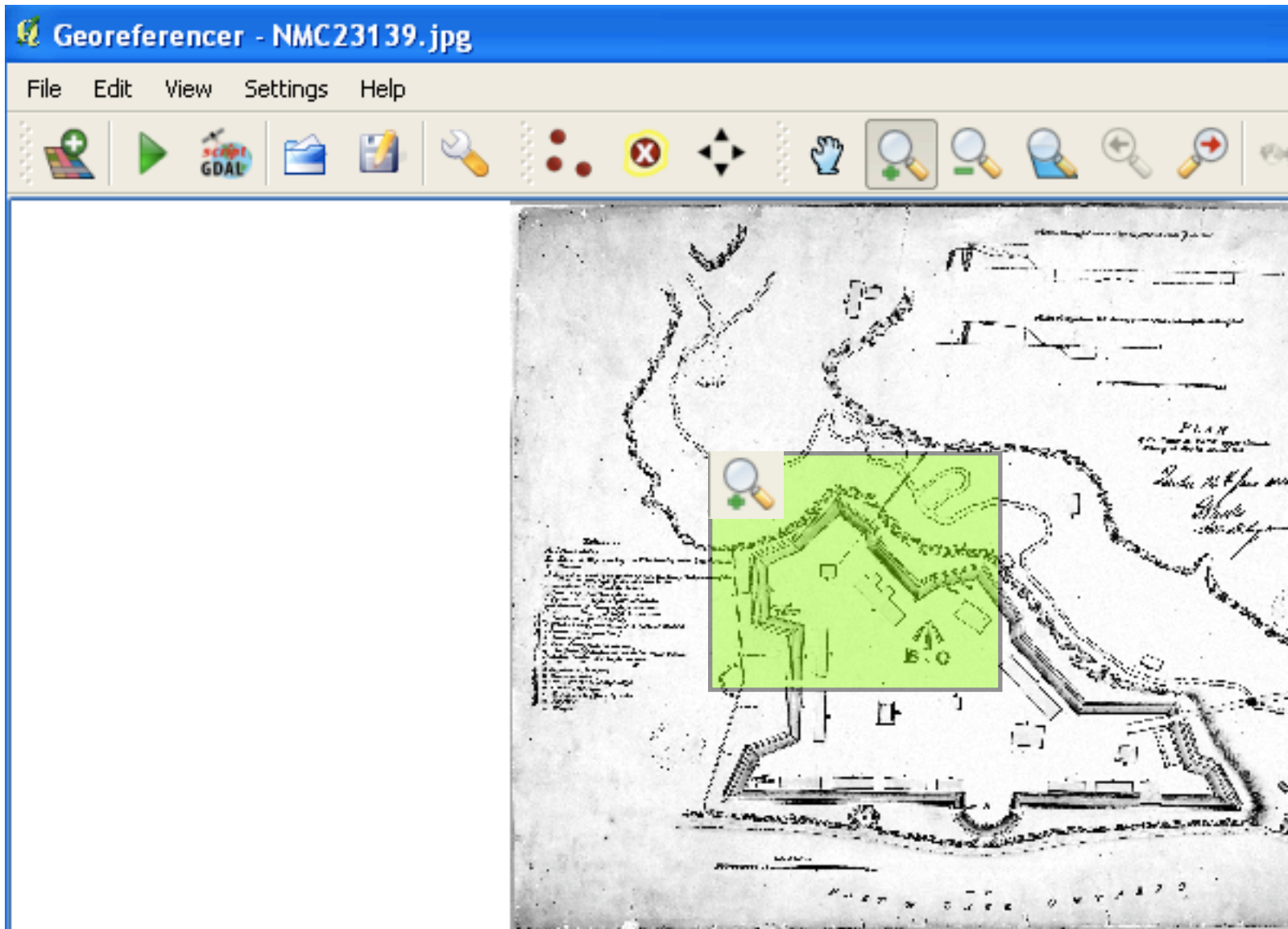
Files of type: All other files (\*.\*)

Open Cancel





This map is from 1816 and is about a scale of (1 inch to 55 feet approx) 1:400 or 1:500 Duberger and Nichols



This map is from 1816 and is about a scale of (1 inch to 55 feet approx) 1:400 or 1:500 Duberger and Nichols



Georeferencer - NMC23139.jpg

File Edit View Settings Help

Georeferencer toolbar icons: Add point, Play, Script Goal, Folder, Pencil, Wrench, Four red dots, Yellow X, Four arrows, Hand, Magnifying glass (green), Magnifying glass (yellow), Magnifying glass (blue).

**References**

*outer Battery*  
outer Battery measuring 2. 18 2. in Training Station 4: 4 2. Gunners  
...  
... made by the blowing up of the Temporary Magazine during the  
... at York made by the Americans in 1781  
... one Blackhouse for 124 men  
... two Blackhouses for the men  
... Barracks for 4 Capt. ...  
... proof Barracks for 12 men each  
... 12" ... 12" for 12 men each  
... houses (splitter proof)  
... 12" ... 12" ...  
... quarters  
... for 12 men  
... for Magazine (landmark)  
... Barracks Magazine to contain 100 Barrels of Powder  
... Barracks of Brick for 120 men  
... 12" ... 12"  
... new office & store  
... new store  
... for Horse of Artillery  
... smaller shop  
... House of Officers Quarters  
... 1200

**Enter map coordinates**

Enter X and Y coordinates (DMS (dd mm ss.ss), DD (dd.  
(mmmm.mm)) which correspond with the selected point  
click the button with icon of a pencil and then click a cor  
canvas of QGIS to fill in coordinates of that point.

X:

Snap to background layers



Georeferencer - NMC23139.jpg

File Edit View Settings Help

GOAL

References

*outer Battery  
inner Battery measuring 2. 16 2. in front of the Magazine & 2. 16 2. in front of the Magazine  
Magazine  
Magazine made by the blowing up of the Temporary Magazine during the  
siege at York made by the Americans in 1781  
the two Blockhouses for the men  
the two Barracks for 4 Capt. & 10 soldiers  
the great Barracks for 12 men each  
" B " " B " for 20 men each  
houses (splitter proof)  
the main guard House, one of the main Blockhous.  
casemate quarters  
wall for 16 men  
the Magazine (casemate)  
the Magazine to contain the Barrel of Powder  
the Barracks of Brick for 100 men  
" B " " B "  
the office of the  
the office of the  
" for Horse of Artillery  
the main shop  
House of Officers Quarters  
gate*

**Enter map coordinates**

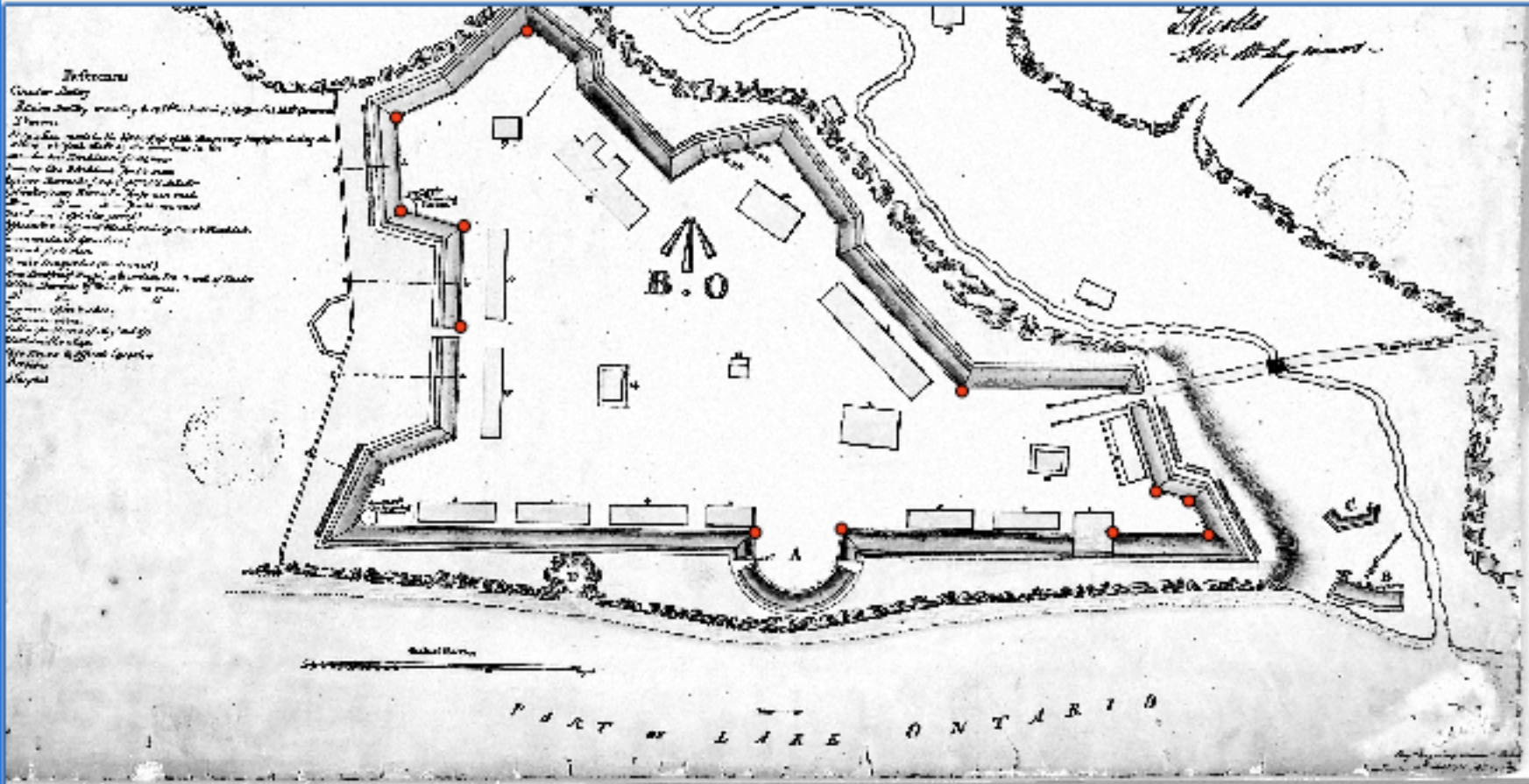
Enter X and Y coordinates (DMS (dd mm ss.ss), DD (dd. mmmm.mm)) which correspond with the selected point. Click the button with icon of a pencil and then click a coordinate on the canvas of QGIS to fill in coordinates of that point.

X:

Snap to background layers

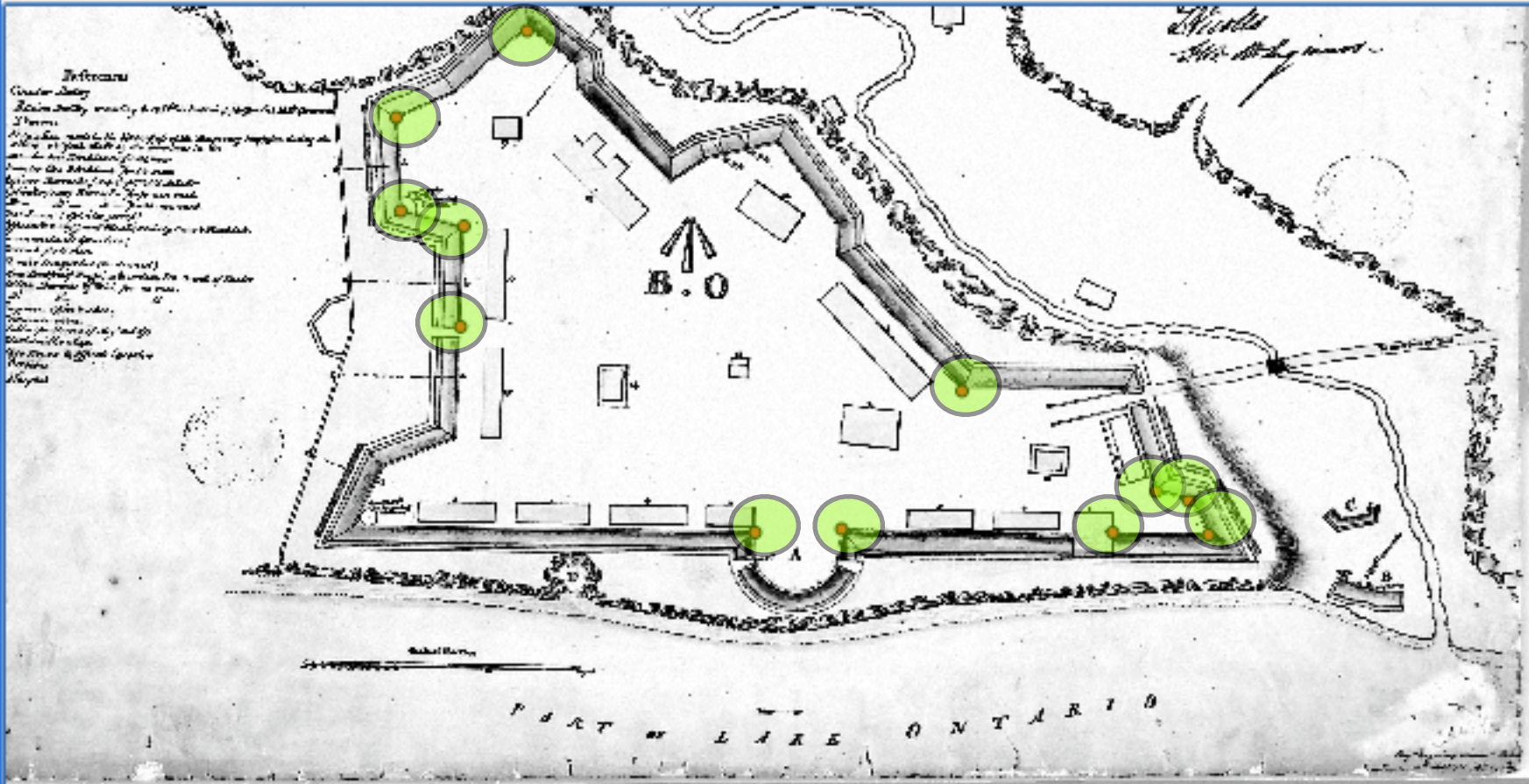
Georeferencer - NMC23139.jpg

File Edit View Settings Help

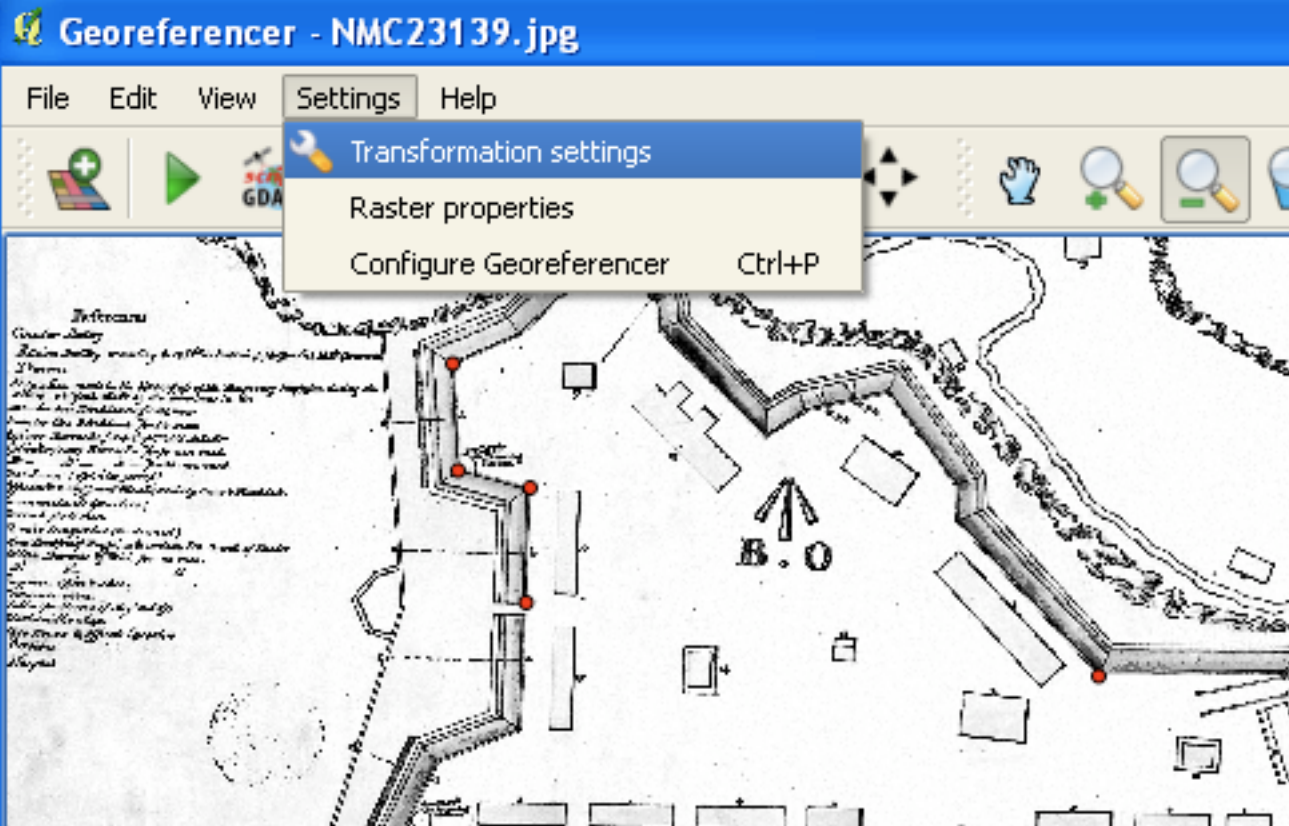


Georeferencer - NMC23139.jpg

File Edit View Settings Help







**Transformation settings** [?] [X]

Transformation type: Polynomial 1

Resampling method: Nearest neighbour

Compression: NONE

Create world file

Output raster: [ ] [ ]

Target SRS: EPSG:4326 [ ] [ ]

Generate pdf map: [ ] [ ]

Generate pdf report: [ ] [ ]

Set Target Resolution

Horizontal: 1.00000 [ ] [ ]

Vertical: -1.00000 [ ] [ ]

Use 0 for transparency when needed

Load in QGIS when done

OK Cancel Help

**Save raster** [?] [X]

Save in: maps

NMC4453\_modified.tif

My Recent Documents

Desktop

My Documents

My Computer

My Network Places

File name: NMC23139\_modified.tif

Save as type: GeoTIFF (\*.tif \*.tiff \*.TIF \*.TIFF)

Save Cancel

-79.40 | 43.64 | 0.00 | 0.00 | 0.00


**Transformation settings** [?] [X]


Transformation type: Polynomial 1


Resampling method: Nearest neighbour


Compression: NONE

Create world file

Output raster:  

Target SRS: EPSG:4326 

Generate pdf map:  

Generate pdf report:  

Set Target Resolution

Horizontal: 1.00000

Vertical: -1.00000

Use 0 for transparency when needed

Load in QGIS when done

OK Cancel Help

**Save raster** [?] [X]

Save in: maps

NMC4453\_modified.tif

My Recent Documents

Desktop

My Documents

My Computer

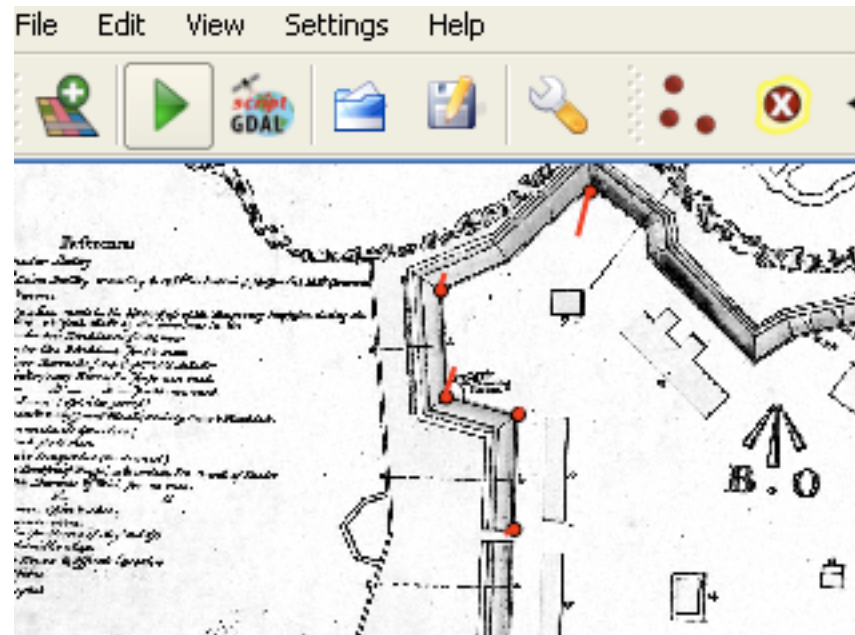
My Network Places

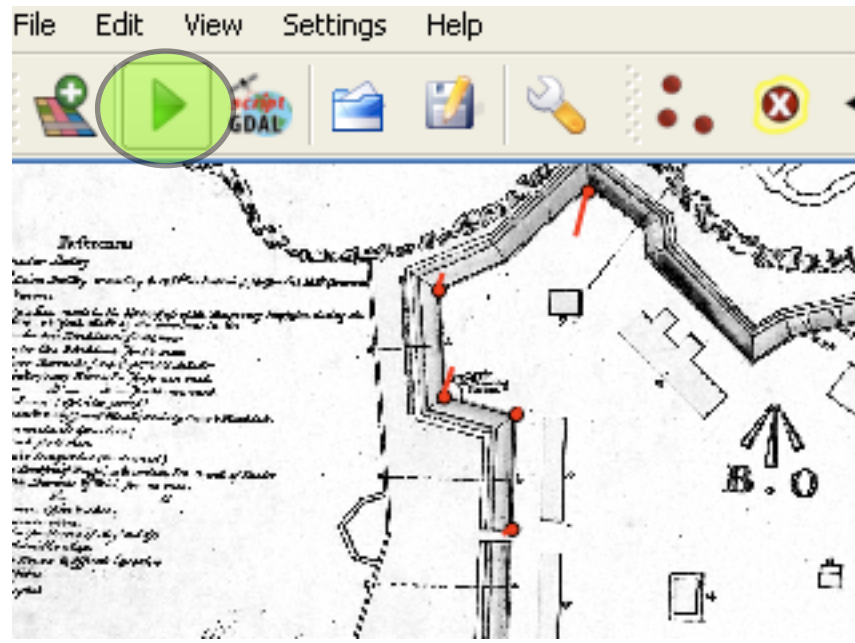
File name: NMC23139\_modified.tif

Save as type: GeoTIFF (\*.tif \*.tiff \*.TIF \*.TIFF)

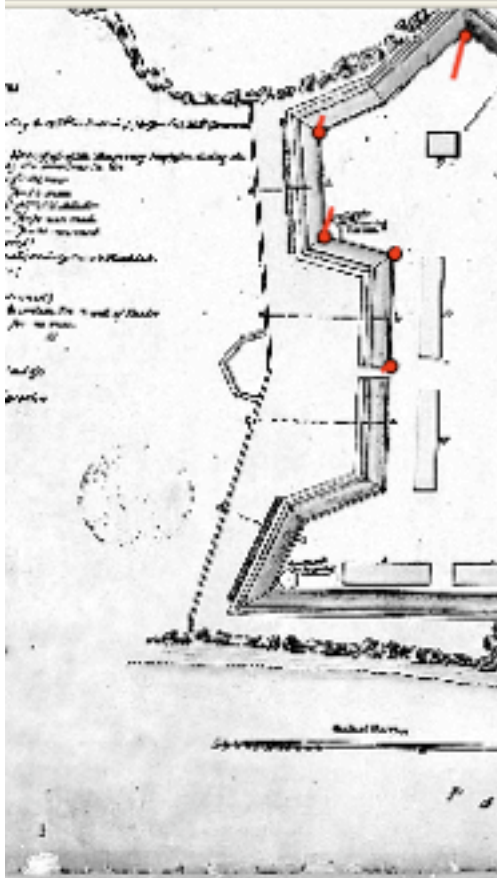
Save Cancel

-79.40 | 43.64 | 0.00 | 0.00 | 0.00





dit View Settings Help



### Save GCP points

Save in: maps

- My Recent Documents
- Desktop
- My Documents
- My Computer
- My Network Places

- NMC4453.jpg.points
- NMC23139.jpg.points

File name:

NMC23139.jpg.points

Save as type:

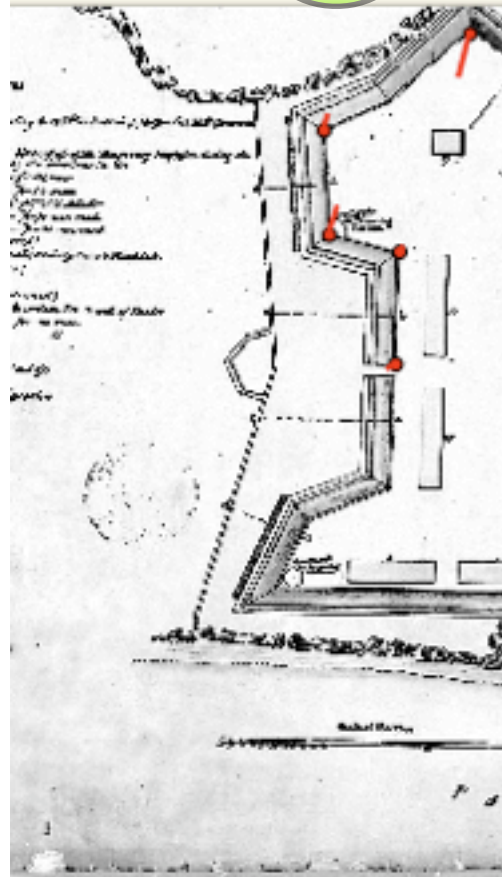
GCP file (\*.points)

Save

Cancel

id	srcX	srcY
----	------	------

dit View Settings Help



### Save GCP points

Save in: maps

- My Recent Documents
- Desktop
- My Documents
- My Computer
- My Network Places

- NMC4453.jpg.points
- NMC23139.jpg.points

File name:

NMC23139.jpg.points

Save as type:

GCP file (\*.points)

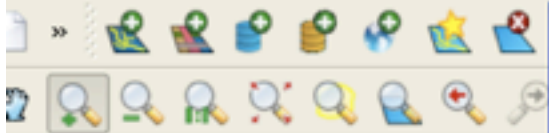
Save

Cancel

id

srcX

srcY



Layers [icon]

- garrison\_creek
- NMC23139\_modified
- fortyork
- ONhyl
- ONhyr
- ONrte
- NMC4453\_modified
- bingimage



### Layer Properties - NMC23139\_modified

Style Transparency Colormap General Metadata Pyramids Histogram

Global transparency

None  Full

No data value: 0.000000

Custom transparency options

Transparency band: Not Set

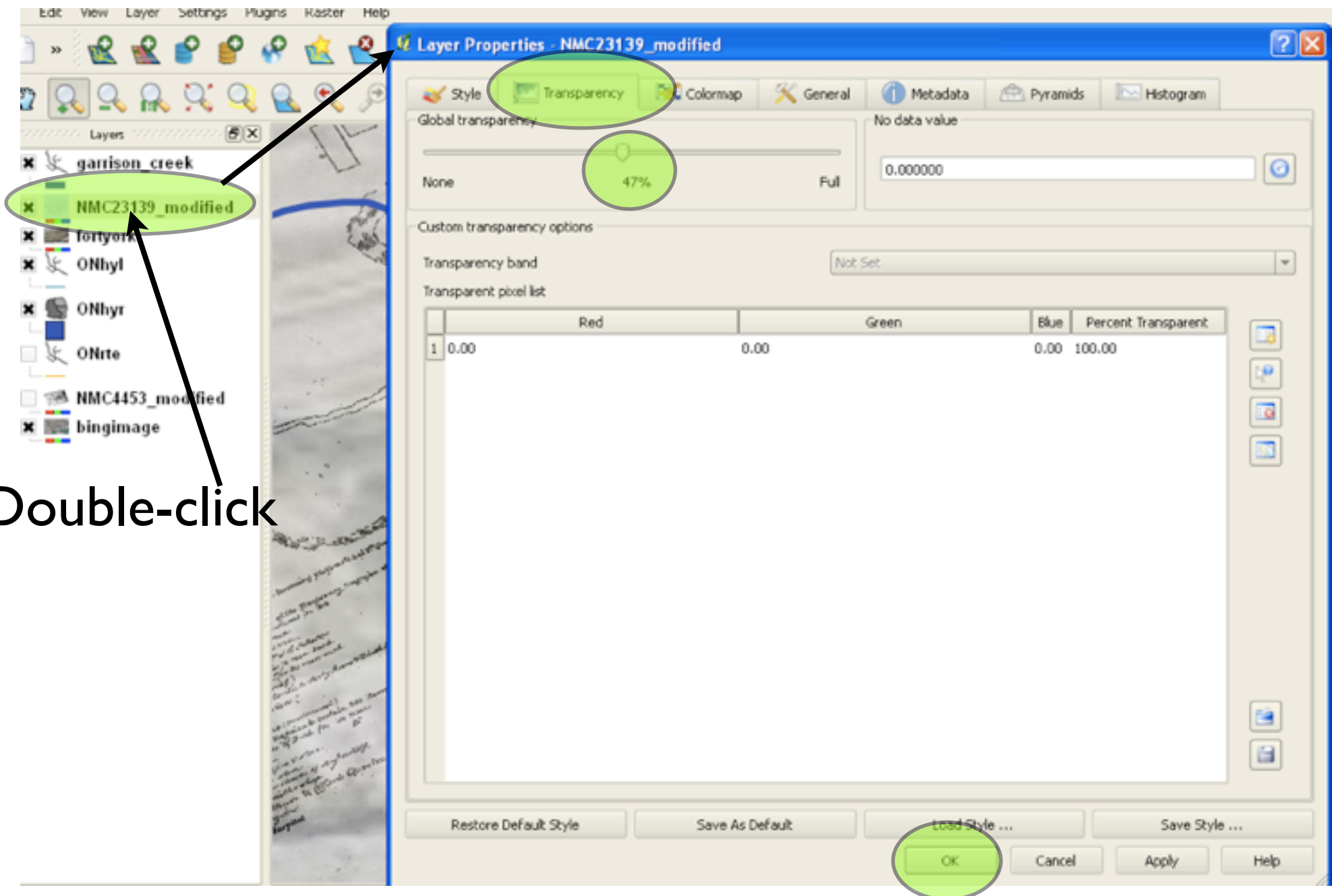
Transparent pixel list

	Red	Green	Blue	Percent Transparent
1	0.00	0.00	0.00	100.00

Restore Default Style Save As Default Load Style ... Save Style ...

OK Cancel Apply Help







The image shows a screenshot of a GIS application's layer list. The list contains several layers, each with a small icon and a name. A context menu is open over the 'garrison' layer, displaying various actions. The 'garrison' layer is currently selected and highlighted in blue. The context menu options are:

- Zoom to layer extent
- Show in overview
- Remove
- Set layer CRS
- Set project CRS from layer
- Open attribute table
- Toggle editing
- Save as...
- Save selection as...
- Show feature count
- Properties** (highlighted)
- Rename
- Add group
- Expand all
- Collapse all

The layer list includes the following layers (from top to bottom):

- garrison** (selected)
- fortyork
- ONhyl
- ONhyr
- ONrte
- NMC4453
- bingimag

Layer Properties - garrison\_creek

Style Labels Fields General Metadata Actions

Style Fields

Id	Name	Type	Length	Precision	Comment	Edit widget	Alias
1	0	id	Integer	10	0	Line edit	

**Add column**

Name: map

Comment: year of map

Type: Whole number (integer)

integer

Width: 4

Precision:

OK Cancel

Restore Default Style Save As Default Load Style ... Save Style ...

OK Cancel Apply Help

Layer Properties - garrison\_creek

Style Labels Fields General Metadata Actions

Id	Name	Type	Length	Precision	Comment	Edit widget	Alias
1	0	id	Integer	10	0	Line edit	

Add column

Name: map

Comment: year of map

Type: Whole number (integer)

integer

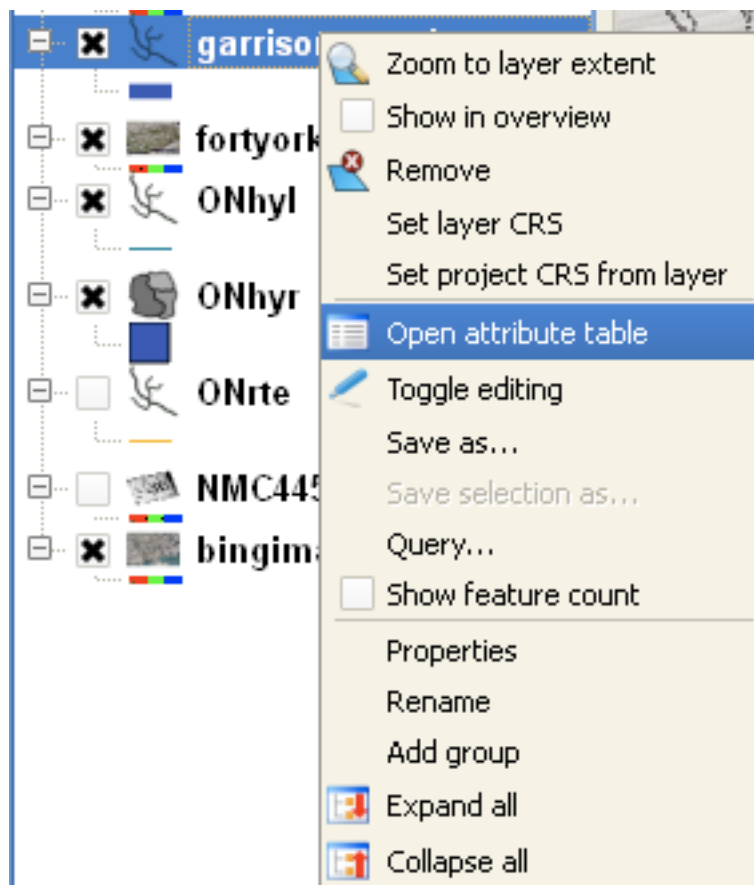
Width: 4

Precision:

OK Cancel

Restore Default Style Save As Default Load Style ... Save Style ...

OK Cancel Apply Help



Attribute table - garrison\_creek :: 0 / 12 feature(s) selected

	id	map
0	1	1837
1	2	NULL
2	3	NULL
3	1	NULL
4	2	NULL
5	4	1816
6	5	1816
7	6	1816
8	7	1816
9	8	1816
10	9	1816
11	10	1816

Look for

Attribute table - garrison\_creek :: 0 / 12 feature(s) selected

	id	map
0	1	1837
1	2	NULL
2	3	NULL
3	1	NULL
4	2	NULL
5	4	1816
6	5	1816
7	6	1816
8	7	1816
9	8	1816
10	9	1816
11	10	1816

Look for



	id	map
0	1	1837
1	2	1837
2	3	1837
3	1	1837
4	2	1837
5	4	1816
6	5	1816
7	6	1816
8	7	1816
9	8	1816
10	9	1816
11	10	1816

**Stop editing**

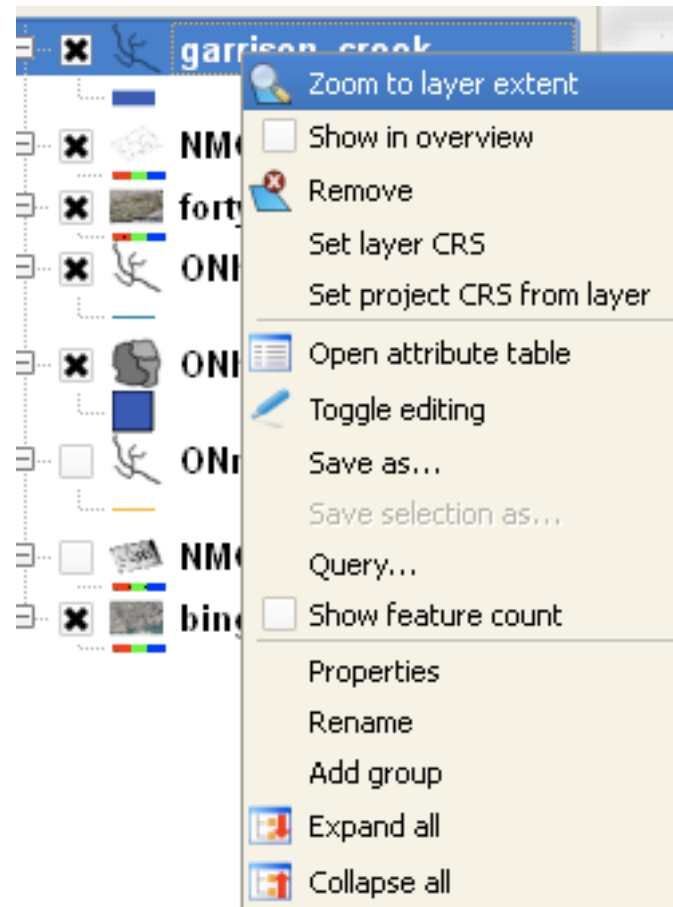
Do you want to save the changes to layer garrison\_creek?

Save Discard Cancel

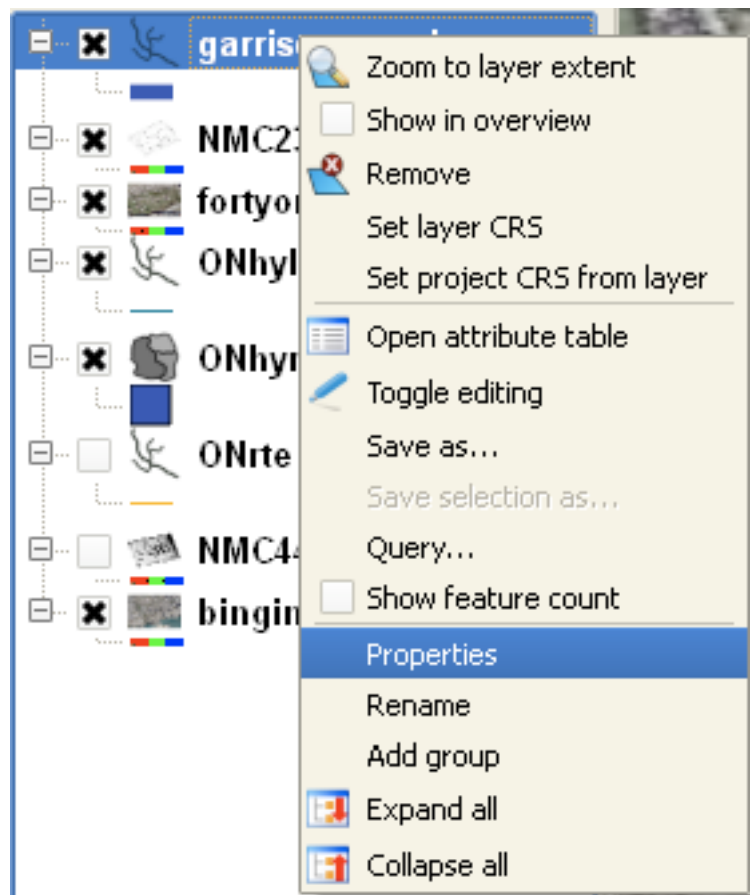
	id	map
0	1	1837
1	2	1837
2	3	1837
3	1	1837
4	2	1837
5	4	1816
6	5	1816
7	6	1816
8	7	1816
9	8	1816
10	9	1816
11	10	1816

**Stop editing**

Do you want to save the changes to layer garrison\_creek?







Layer Properties - garrison\_creek



Style | Labels | Fields | General | Metadata | Actions

Categorized

Symbol levels | Old symbology

Column: map

Symbol: — change | Color ramp: red-yellow

Symbol	Value	Label
	1837	1837
	1816	1816

Classify | Add | Delete | Delete all | Join | Add

Restore Default Style | Save As Default | Load Style ... | Save


OK | Cancel | Apply



Symbol selector


Unit: Millimeter | Width: 1.26

Transparency: 0%

Color:  Change

Change...

Save as style

Saved styles: 

Style manager...

OK | Cancel



Layer Properties - garrison\_creek

Style | Labels | Fields | General | Metadata | Actions

Symbol levels | Old symbology

Category: map 3

Symbol: — change | Color ramp: red-yellow

Symbol	Value	Label
	1837	1837
	1816	1816

4 double-click on lines

Classify | Add | Delete | Delete all | Join | Ac

Restore Default Style | Save As Default | Load Style ... | Sav

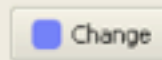
OK | Cancel | Apply



Symbol selector


Unit: Millimeter | Width: 1.25

Transparency: 0%

Color:  Change

Change...

Save as style

Saved styles: 

Style manager...

6 OK | Cancel





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& bioinformatics analysis

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GBI

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## shp2kml 2.0: Shape-file to Google Earth



Shp2kml is a stand alone tool that transforms GIS layers to Google Earth. It uses as input the most common format file for GIS (ESRI shapefile) and generates a KML File.

Google Earth requires coordinates to be in Lat/Lon and referenced to the WGS84 datum. Shp2kml is able to transform the coordinate system. The input file can be Lat/Lon (Geographic) or UTM (Projected) coordinate system. Also shp2kml will change datums if required. It contains a list of around 200 datums.

Some of the supported features are:

- Lat/Long or UTM (meters)
- Any Datum
- Point, Lines, Polygons
- Symbol properties: by Single Symbol, Unique value, Graduate Value
- Labeling from attributes table
- Balloon creation from attributes table

### Tools Categories

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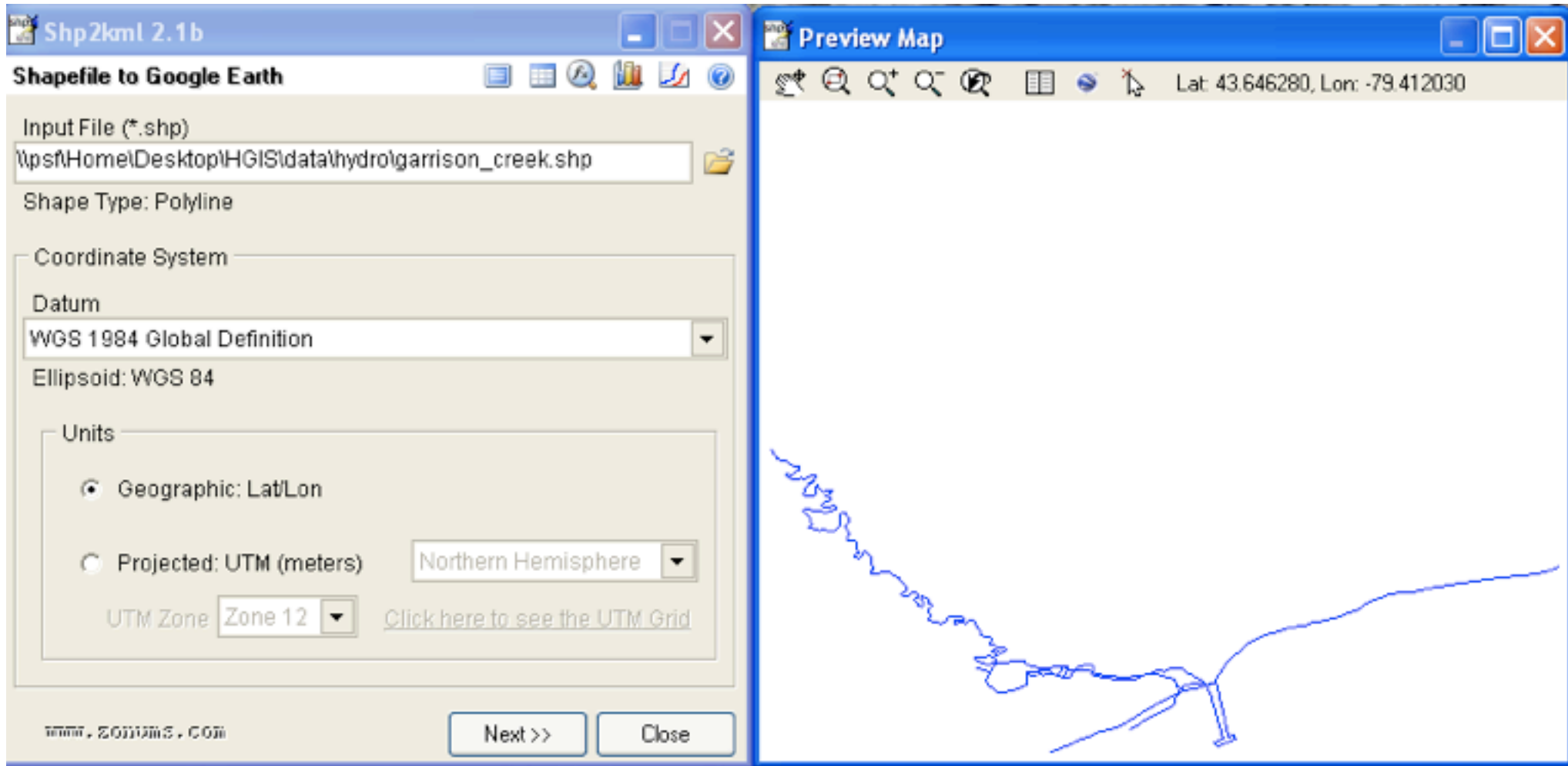
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BRAIN  
TRAINING  
GAMES



Shp2kml.exe



There is no need to install shp2kml. It is an executable that you place where you want it on your windows computer. You can download shp2kml from <http://www.zonums.com/shp2kml.html> the direct address for the current download is <http://www.zonums.com/files/Shp2kml.zip>

Shp2kml 2.1b

Shapefile to Google Earth

Entity Properties

Mouse Roll over Effect

Field Label

Display Label  Always  Roll over  Never

Polygon Roll over effect

Do not Change Style  Change Color

Create polygon centroid

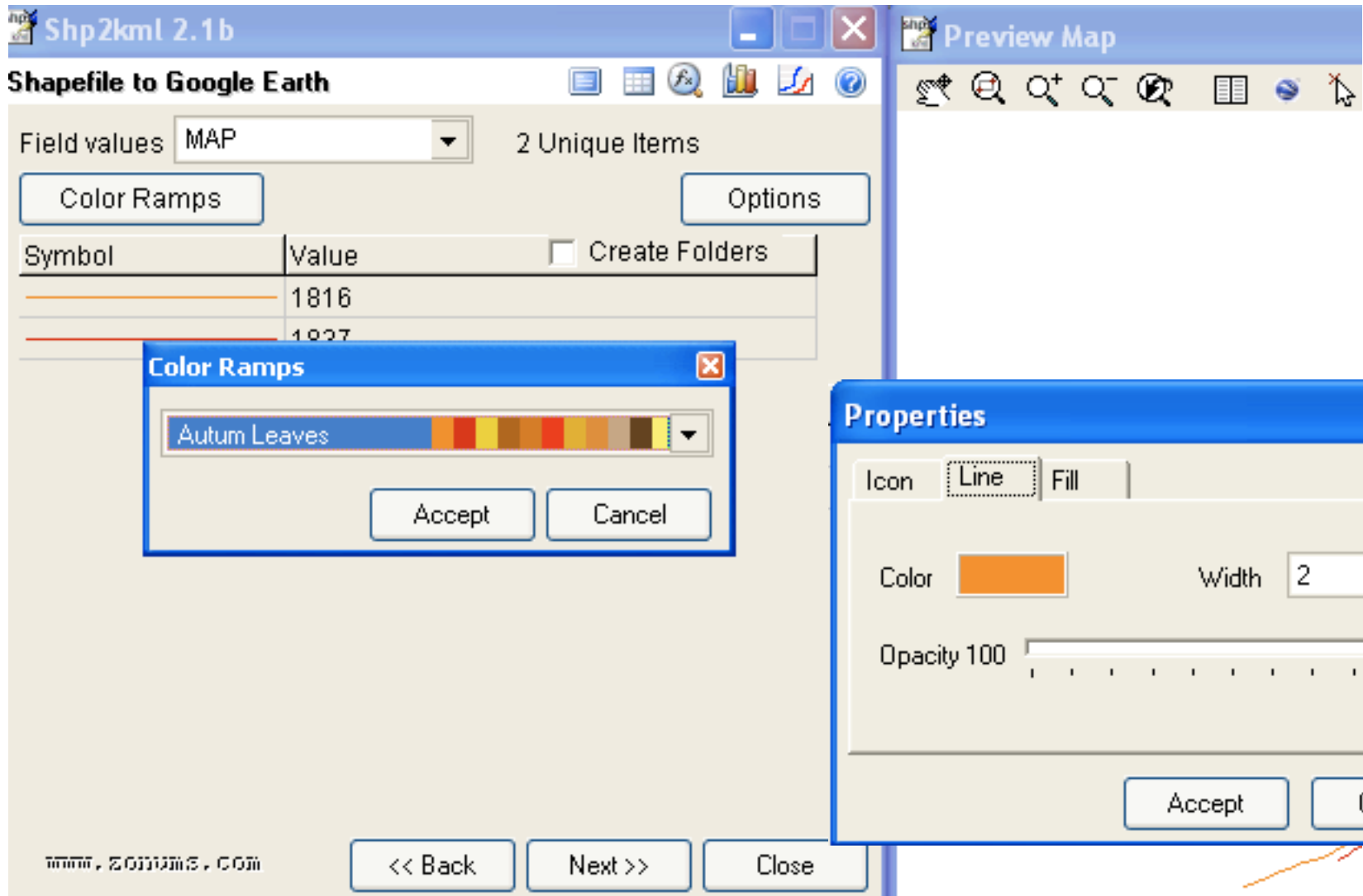
A centroid for each Polygon when multigeometry

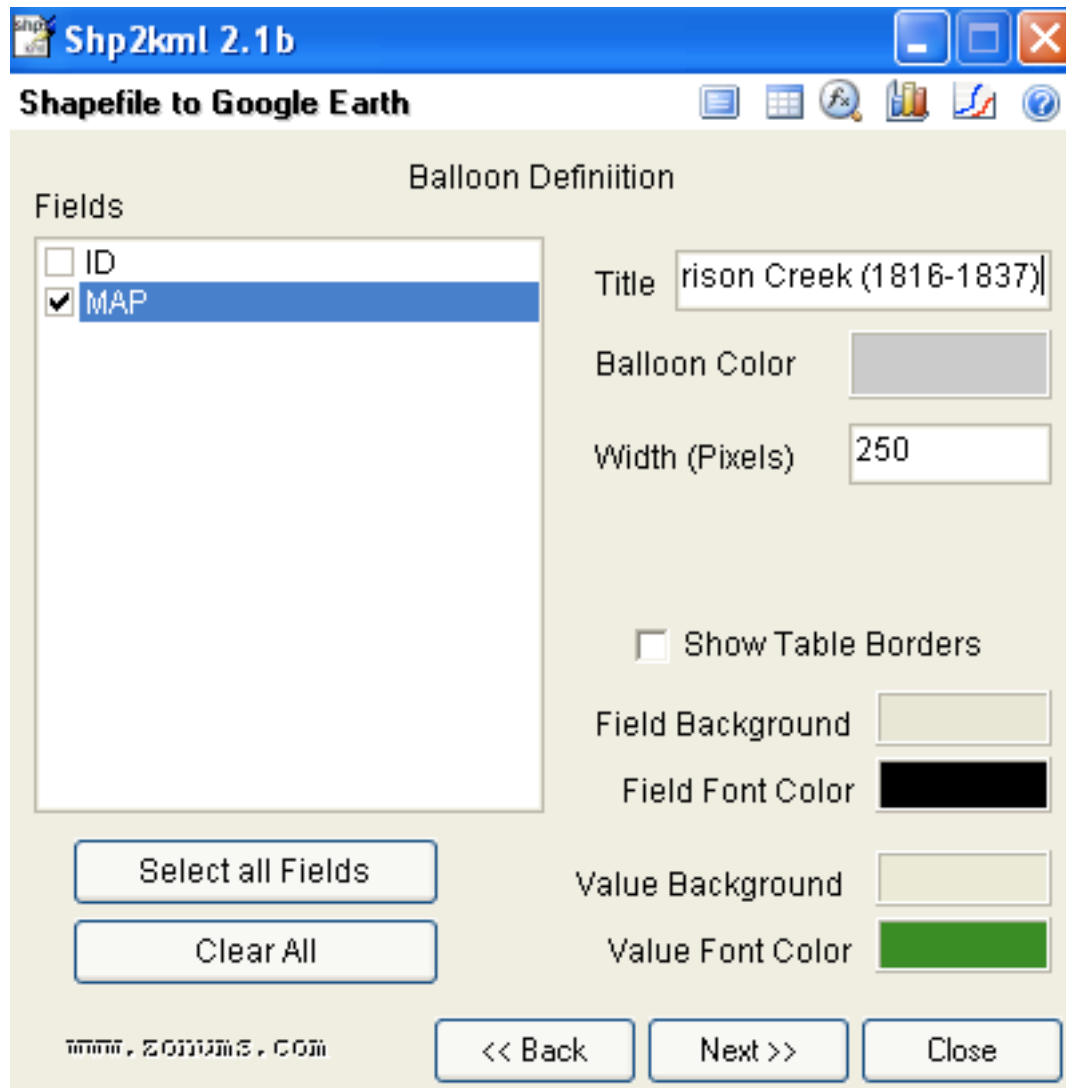
Symbology

Single Symbol  Unique Value  Graduate Value

www.zoonec.com

<< Back Next >> Close





Shp2kml 2.1 b

### Shapefile to Google Earth

Layer Title  
Garrison Creek and Lake Ontario shoreline (1816-1837)

Description  
blah blah blah

Altitude Mode   Tessellate

3D Options

Use Elevation Value

Constant Value

Field Value   Factor

www.esri.com



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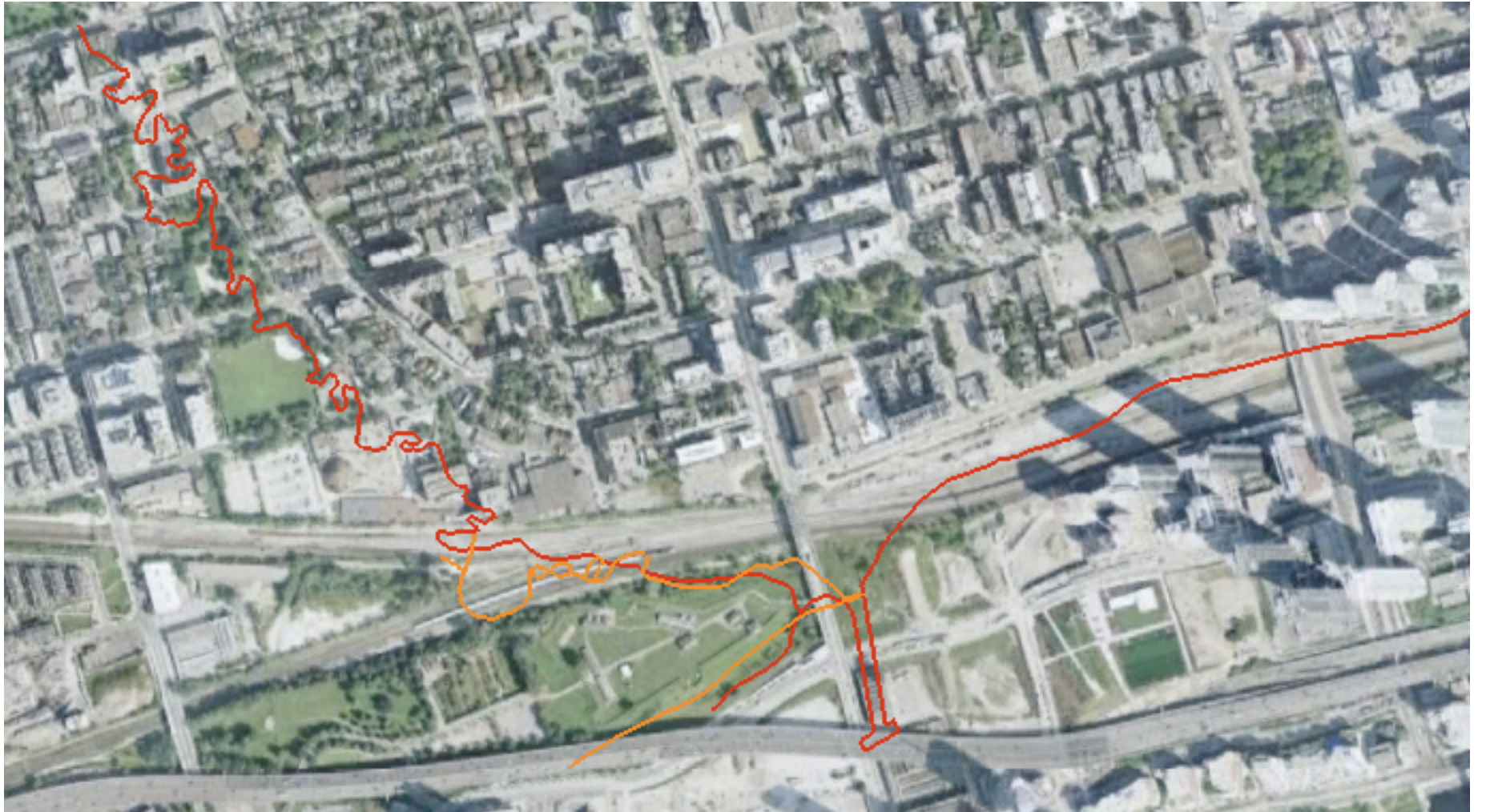
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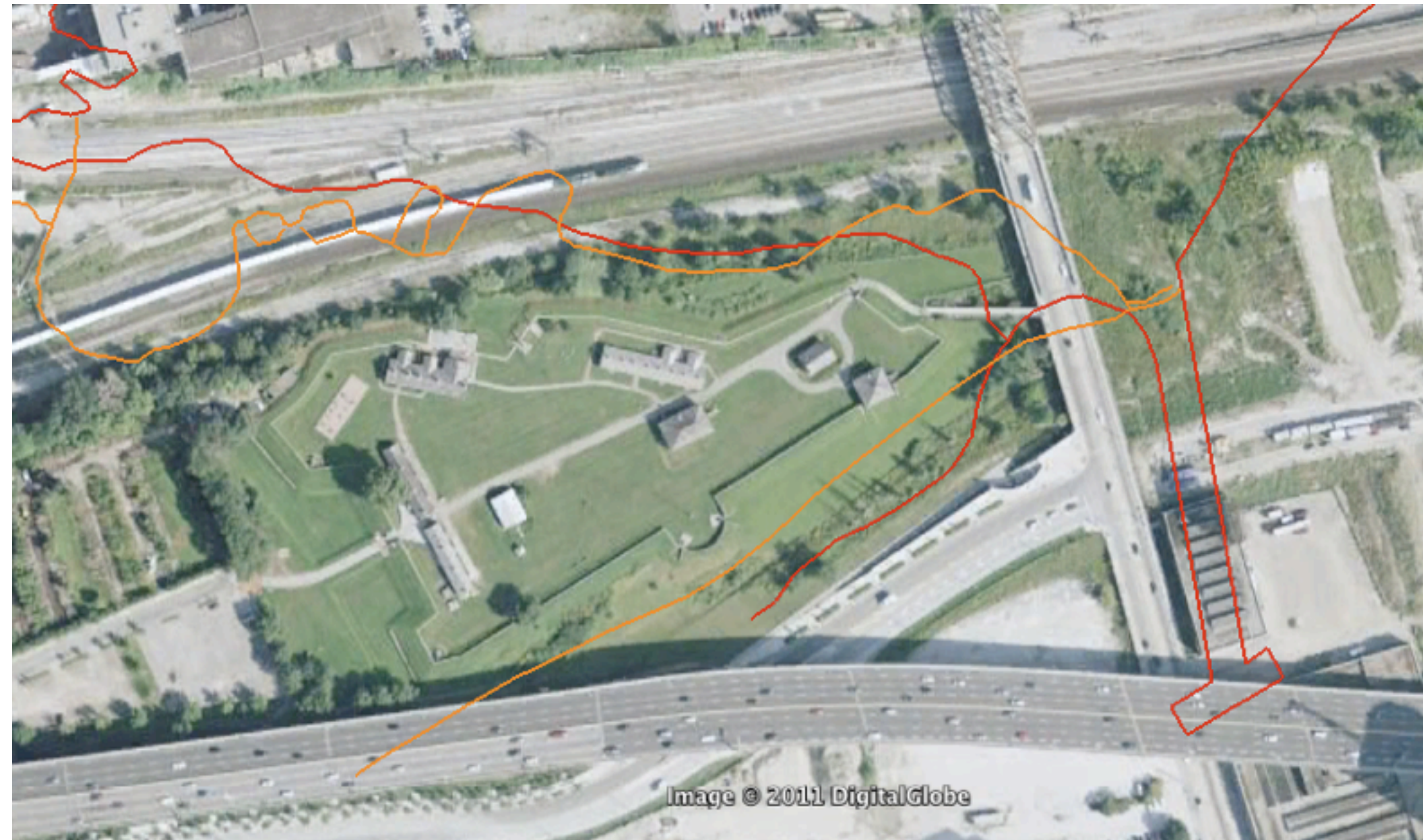
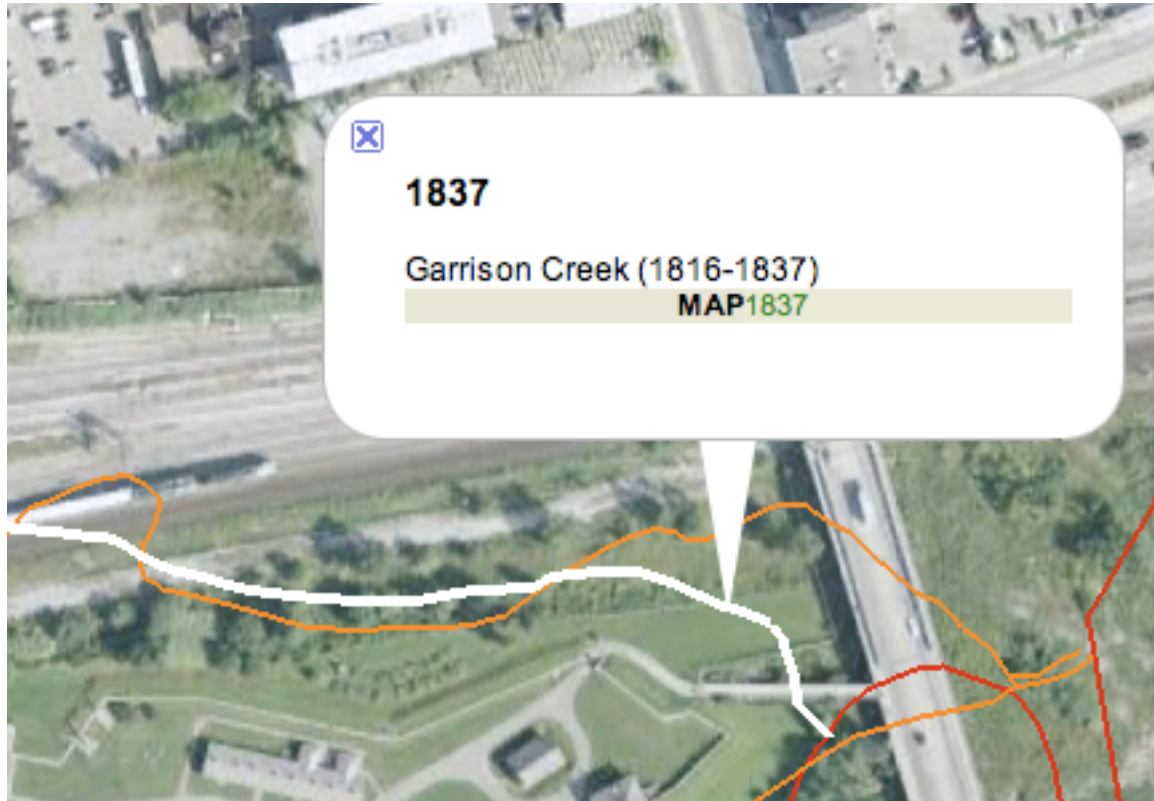


Image © 2011 DigitalGlobe



**1837**

Garrison Creek (1816-1837)

MAP1837