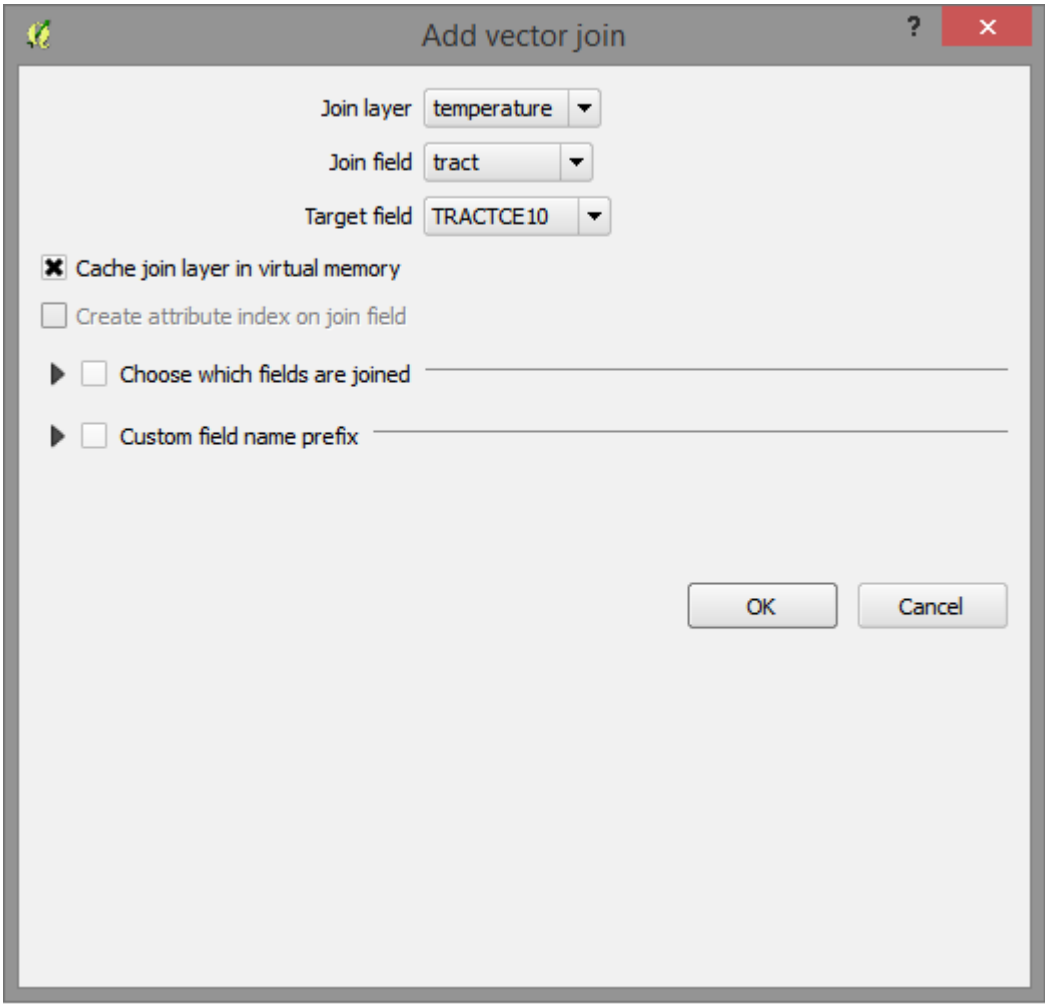
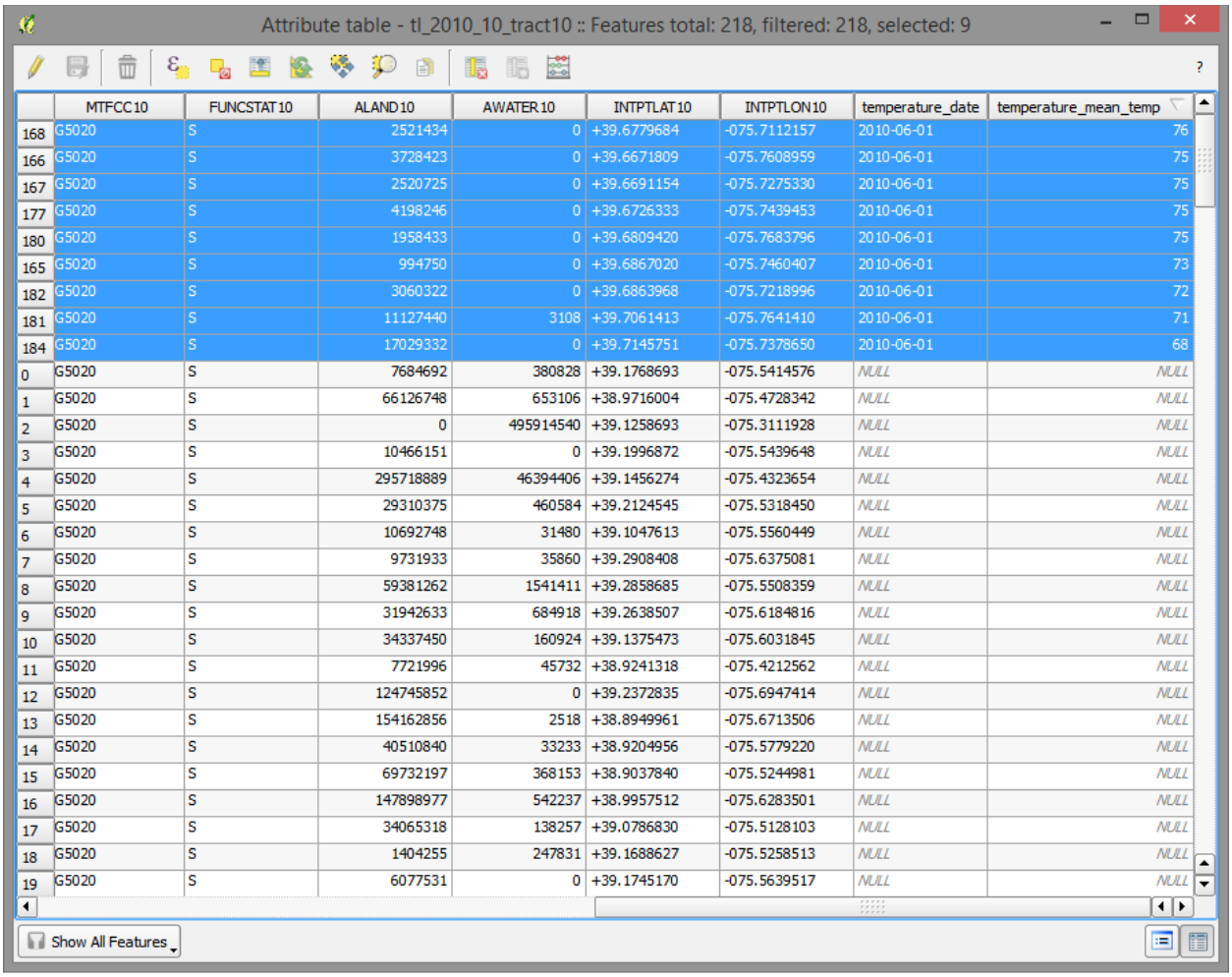
Chapter 1: Exploring Places – from Concept to Interface





	MTFCC10	FUNCSTAT10	ALAND10	AWATER10	INTPTLAT10	INTPTLON10	temperature_date	temperature_mean_temp
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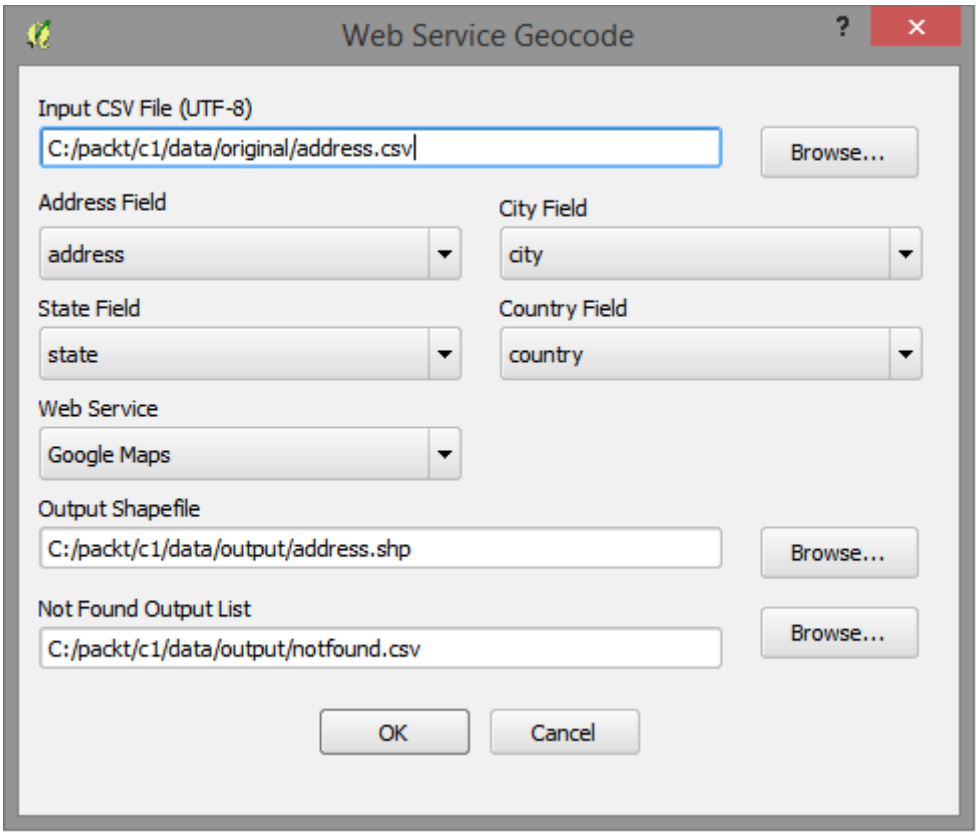
166	G5020	S	3728423	0	+39.6671809	-075.7608959	2010-06-01	75
167	G5020	S	2520725	0	+39.6691154	-075.7275330	2010-06-01	75
177	G5020	S	4198246	0	+39.6726333	-075.7439453	2010-06-01	75
180	G5020	S	1958433	0	+39.6809420	-075.7683796	2010-06-01	75
165	G5020	S	994750	0	+39.6867020	-075.7460407	2010-06-01	73
182	G5020	S	3060322	0	+39.6863968	-075.7218996	2010-06-01	72
181	G5020	S	11127440	3108	+39.7061413	-075.7641410	2010-06-01	71
184	G5020	S	17029332	0	+39.7145751	-075.7378650	2010-06-01	68
0	G5020	S	7684692	380828	+39.1768693	-075.5414576	NULL	NULL
1	G5020	S	66126748	653106	+38.9716004	-075.4728342	NULL	NULL
2	G5020	S	0	495914540	+39.1258693	-075.3111928	NULL	NULL
3	G5020	S	10466151	0	+39.1996872	-075.5439648	NULL	NULL
4	G5020	S	295718889	46394406	+39.1456274	-075.4323654	NULL	NULL
5	G5020	S	29310375	460584	+39.2124545	-075.5318450	NULL	NULL
6	G5020	S	10692748	31480	+39.1047613	-075.5560449	NULL	NULL
7	G5020	S	9731933	35860	+39.2908408	-075.6375081	NULL	NULL
8	G5020	S	59381262	1541411	+39.2858685	-075.5508359	NULL	NULL
9	G5020	S	31942633	684918	+39.2638507	-075.6184816	NULL	NULL
10	G5020	S	34337450	160924	+39.1375473	-075.6031845	NULL	NULL
11	G5020	S	7721996	45732	+38.9241318	-075.4212562	NULL	NULL
12	G5020	S	124745852	0	+39.2372835	-075.6947414	NULL	NULL
13	G5020	S	154162856	2518	+38.8949961	-075.6713506	NULL	NULL
14	G5020	S	40510840	33233	+38.9204956	-075.5779220	NULL	NULL
15	G5020	S	69732197	368153	+38.9037840	-075.5244981	NULL	NULL
16	G5020	S	147898977	542237	+38.9957512	-075.6283501	NULL	NULL
17	G5020	S	34065318	138257	+39.0786830	-075.5128103	NULL	NULL
18	G5020	S	1404255	247831	+39.1688627	-075.5258513	NULL	NULL
19	G5020	S	6077531	0	+39.1745170	-075.5639517	NULL	NULL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Browse...
Address Field
address
City Field
city
State Field
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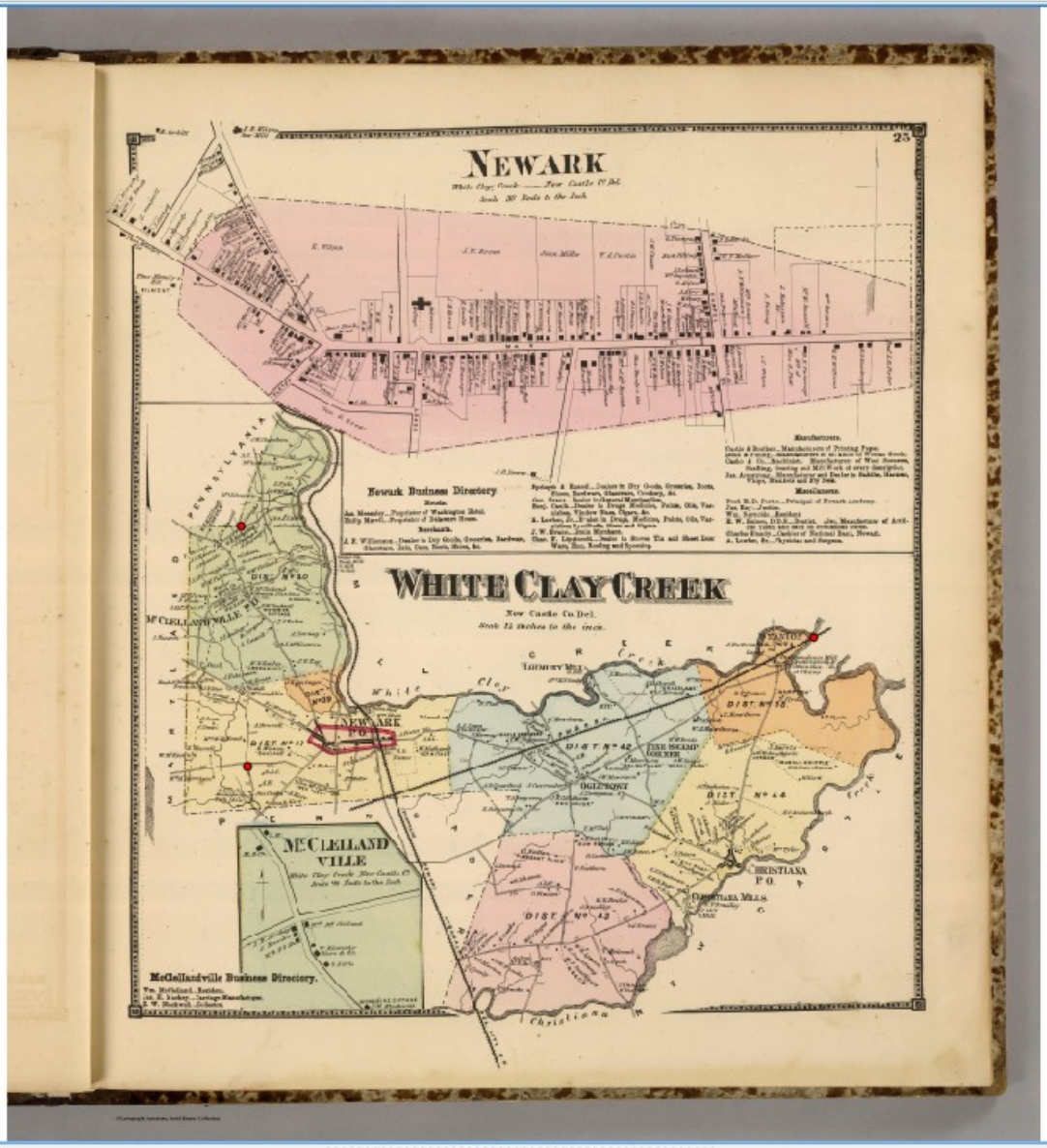
Country Field
country
Web Service
Google Maps
Output Shapefile
C:/packt/c1/data/output/address.shp
Browse...
Not Found Output List
C:/packt/c1/data/output/notfound.csv
Browse...
OK
Cancel

Georeferencer - 4622009.jpg

File Edit View Settings Help



GCP table

on/off	id	srcX	srcY	dstX	dstY	dX[pixels]	dY[pixels]	residual[pixels]
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✖	1	1295.07	-4114.20	-8435237.39	4819319.27	0.00	0.00	0.00
✖	2	1261.00	-2810.94	-8435104.29	4825604.80	0.00	0.00	0.00

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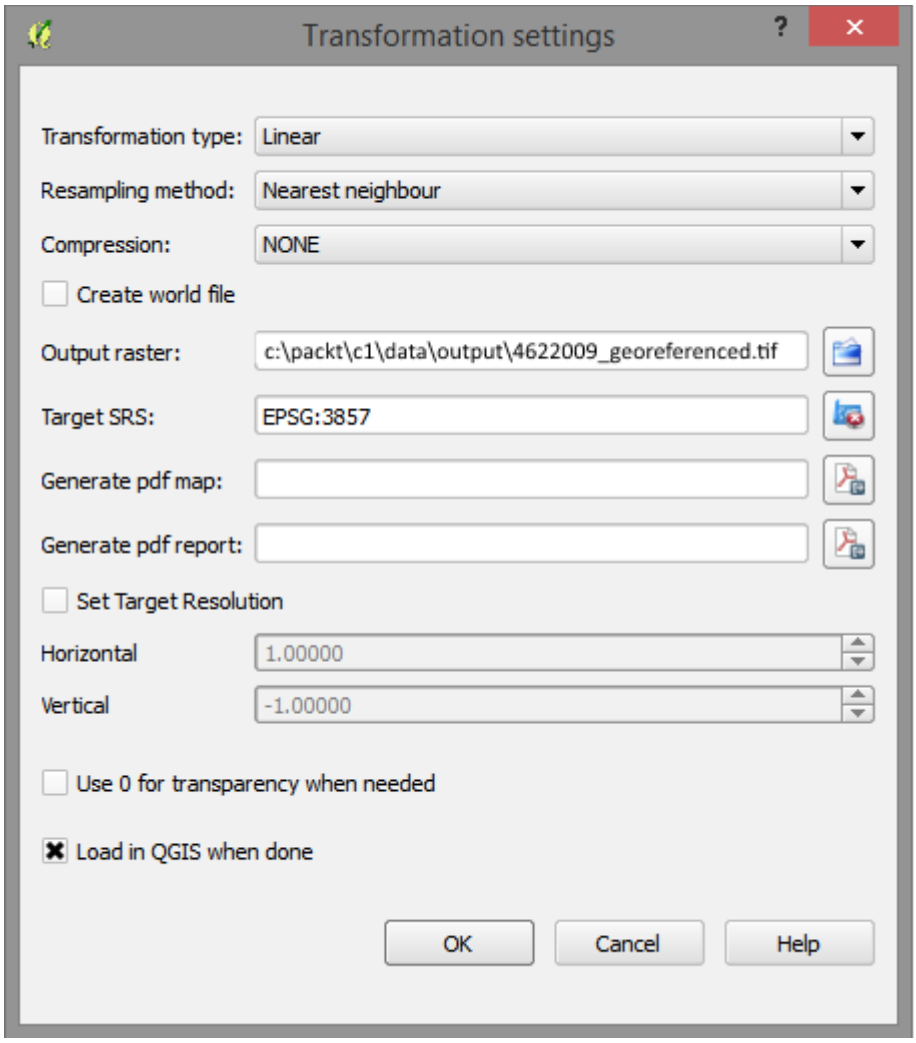
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Transformation type:
Linear
Resampling method:
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Compression:
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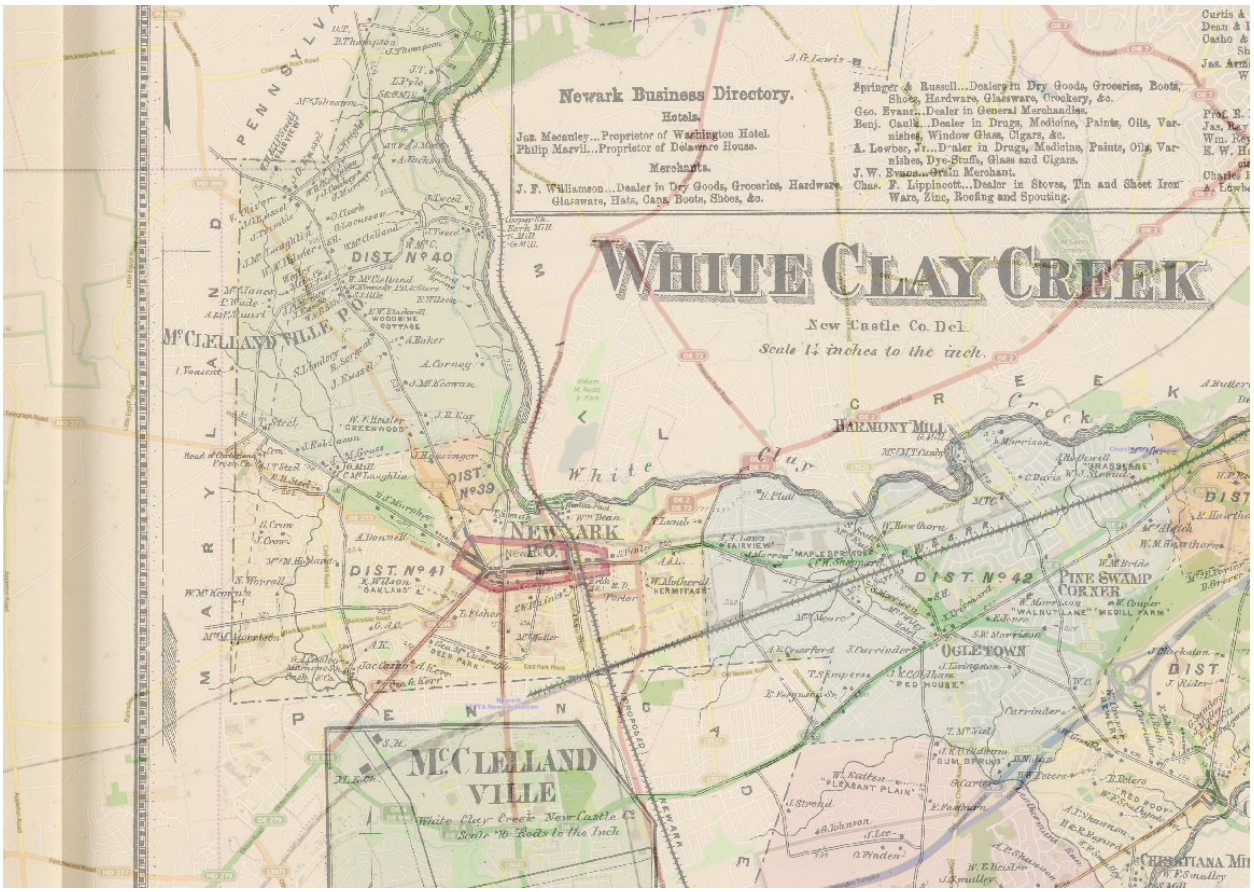
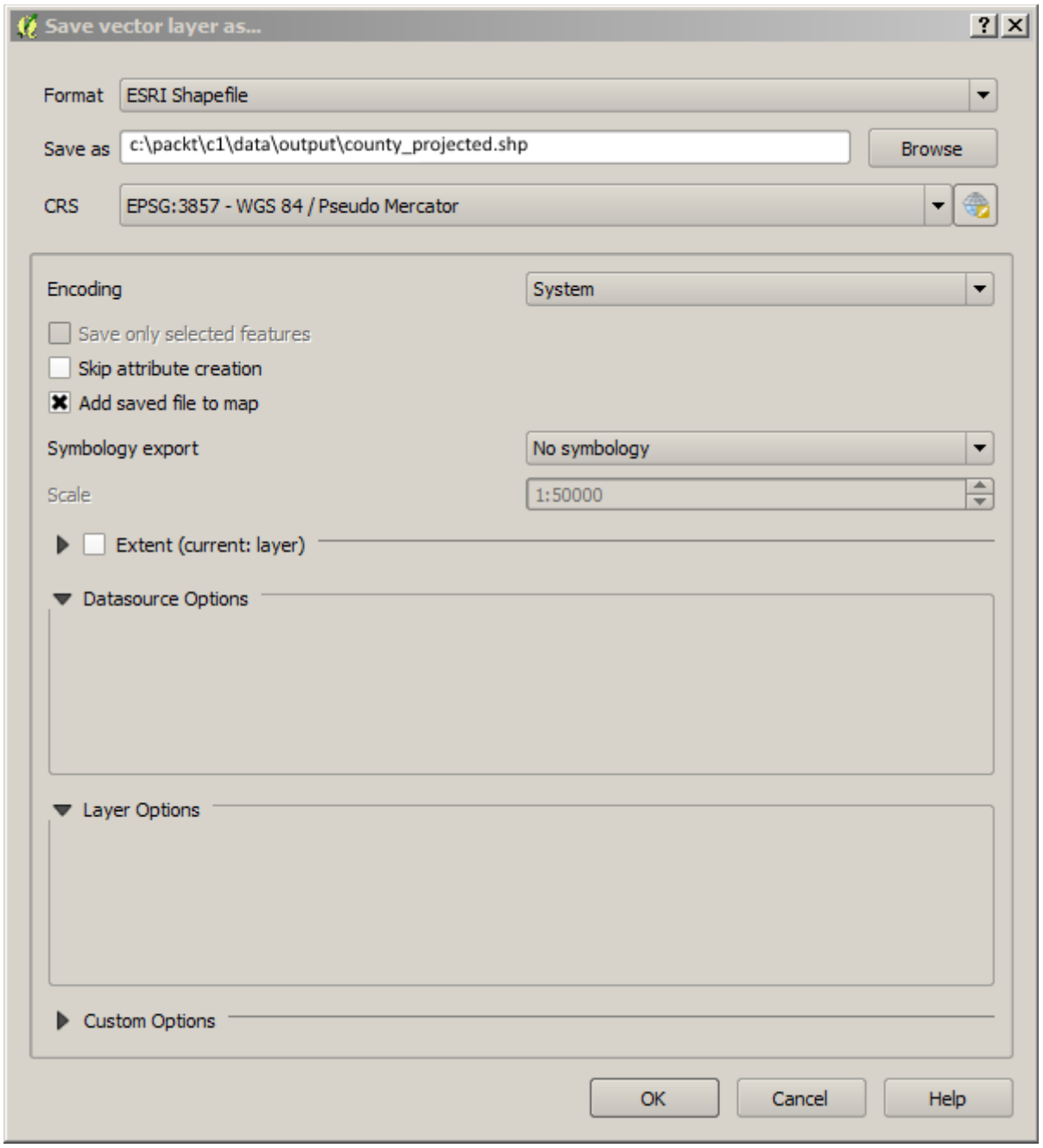
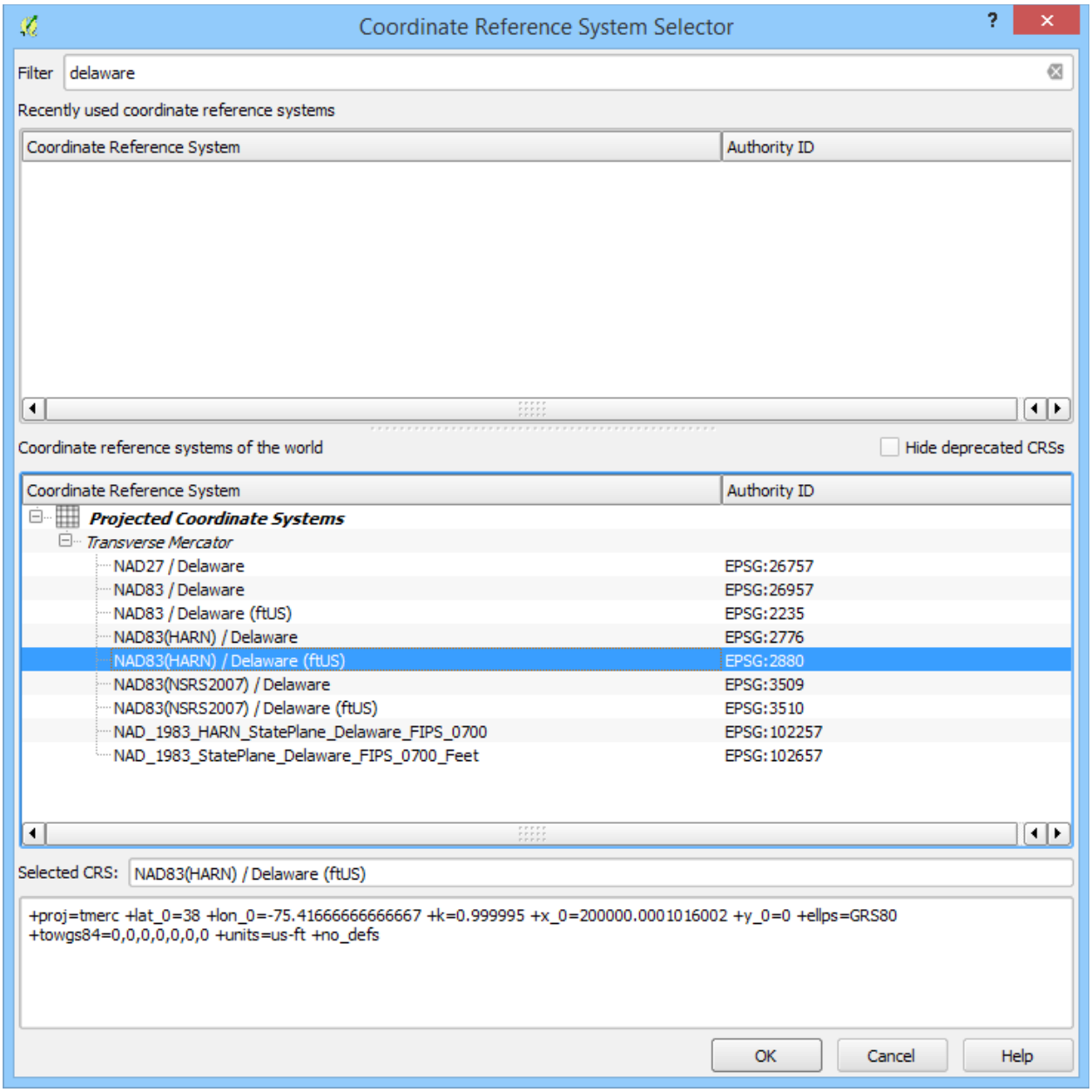
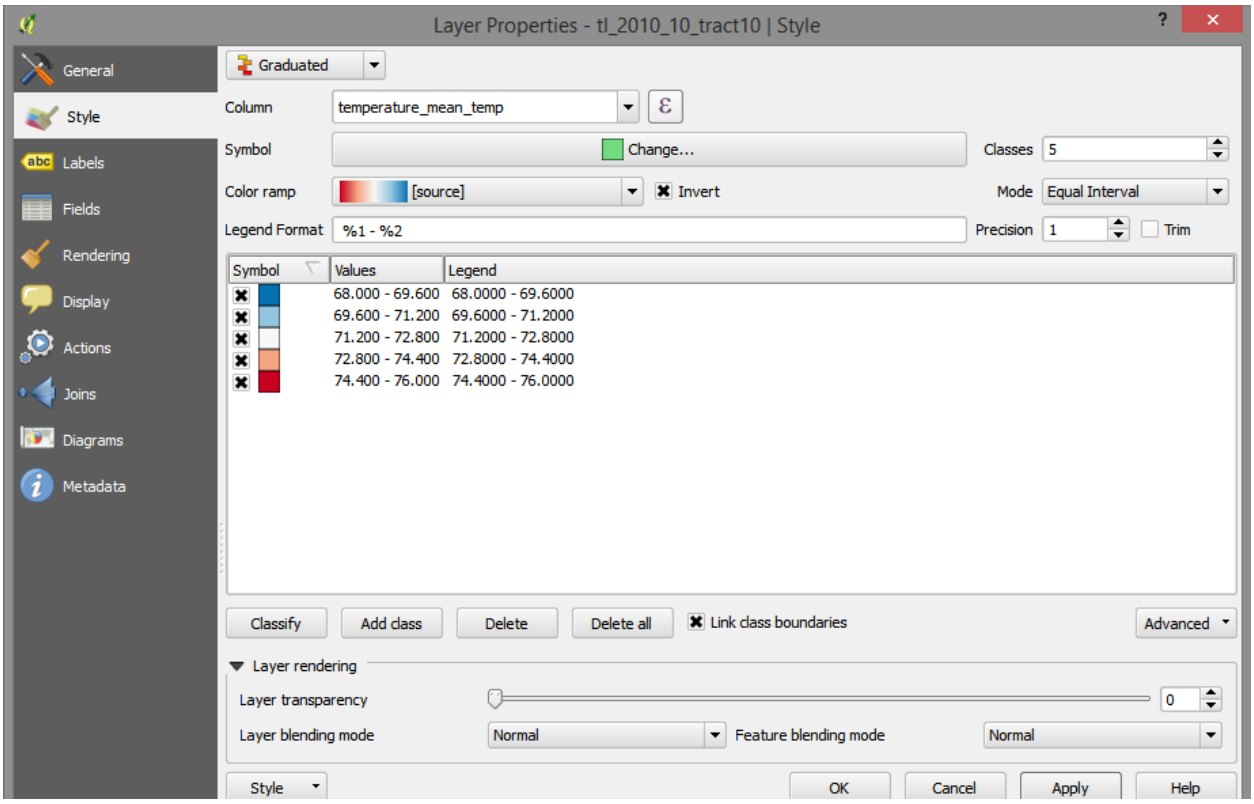
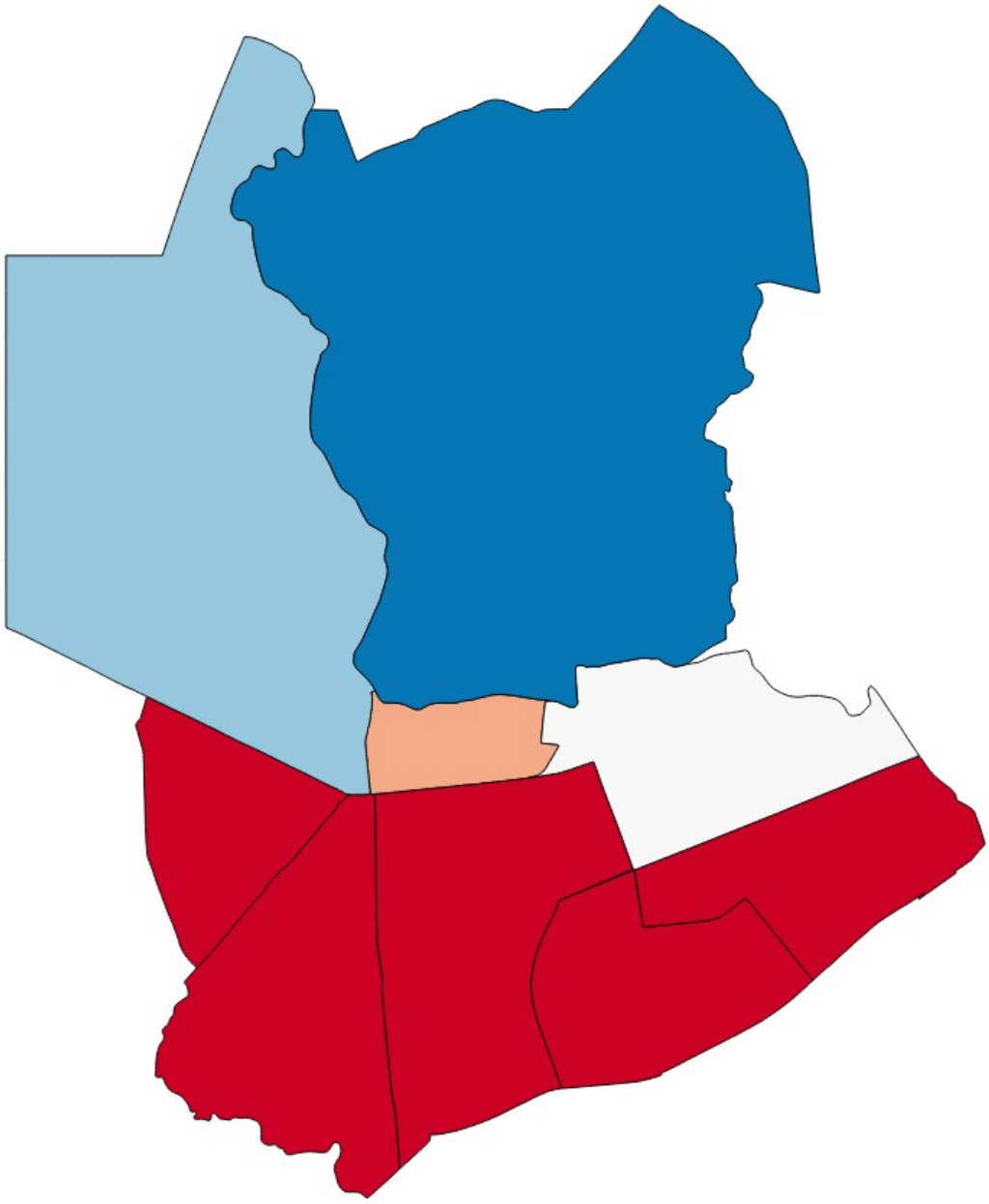
Target SRS:
EPSG:3857
Generate pdf map:
Generate pdf report:
Set Target Resolution
Horizontal
1.00000
Vertical
-1.00000
Use 0 for transparency when needed
Load in QGIS when done
OK
Cancel
Help

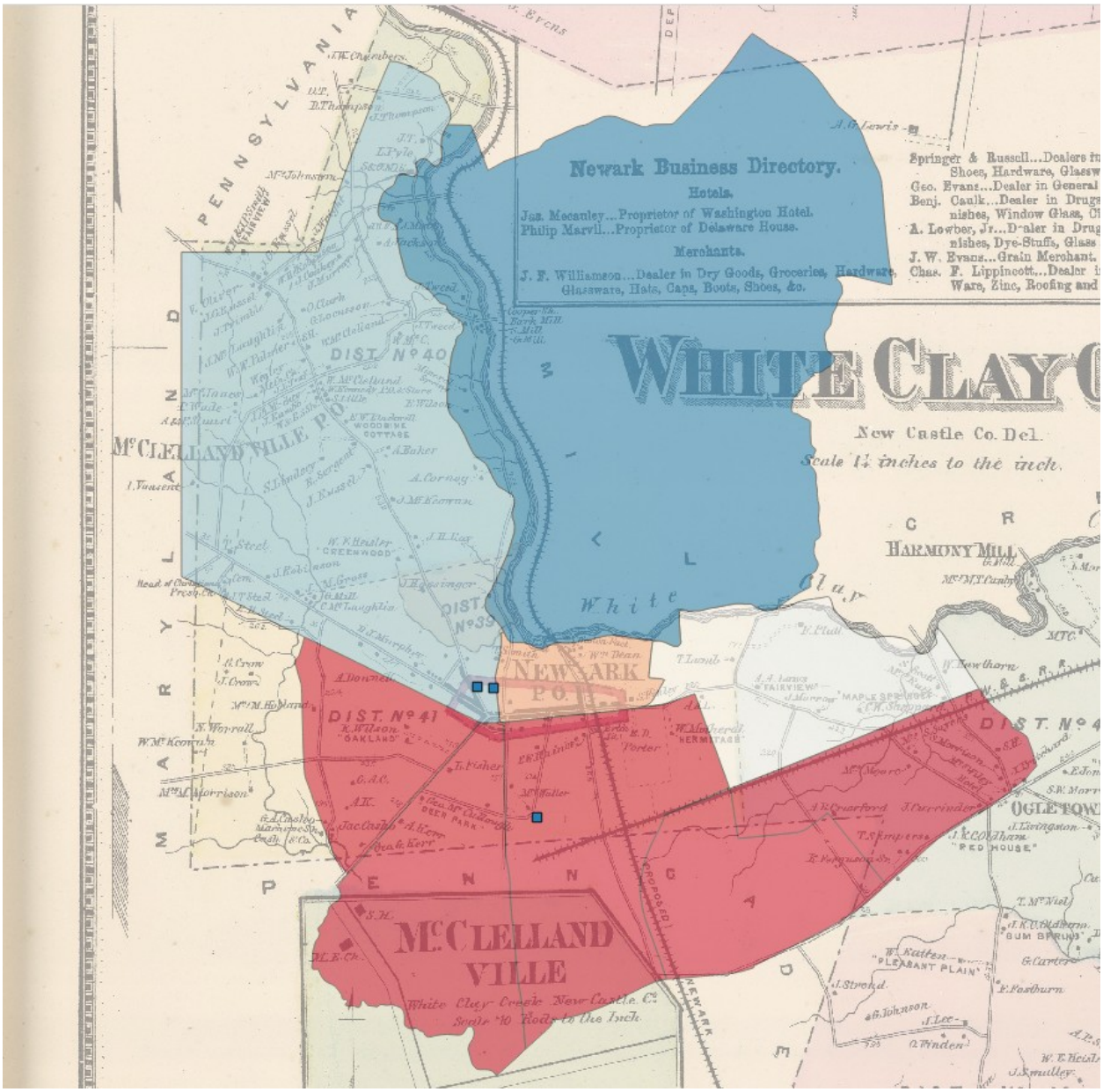

Newark Business Directory.
Hotels.
Jas. Mecauley...Proprietor of Washington Hotel.
Philip Marvil...Proprietor of Delaware House.
Merchants.
J. F. Williamson...Dealer in Dry Goods, Groceries, Hardware, Glassware, Hats, Cans, Boots, Shoes, &c.
Springer & Russell...Dealers in Dry Goods, Groceries, Boots, Shoes, Hardware, Glassware, Crockery, &c.
Geo. Evans...Dealer in General Merchandise.
Benj. Caulk...Dealer in Drugs, Medicine, Paints, Oils, Varnishes, Window Glass, Cigars, &c.
A. Lowber, Jr...Dealer in Drugs, Medicine, Paints, Oils, Varnishes, Dye-Stuffs, Glass and Cigars.
J. W. Evans...Grain Merchant.
Chas. F. Lippincott...Dealer in Stoves, Tin and Sheet Iron Ware, Zinc, Roofing and Spouting.
WHITE CLAY CREEK
New Castle Co. Del.
Scale 1½ inches to the inch.
McCLELLANDVILLE P.O.
DIST. No 40
DIST. No 39
DIST. No 41
DIST. No 42
NEWARK P.O.
HARMONY MILL
PINE SWAMP CORNER
OGLETOWN
McCLELLAND VILLE
White Clay Creek
PENNSYLVANIA
MARYLAND
PENNSYLVANIA RAILROAD
PROPOSED NEWARK BRANCH

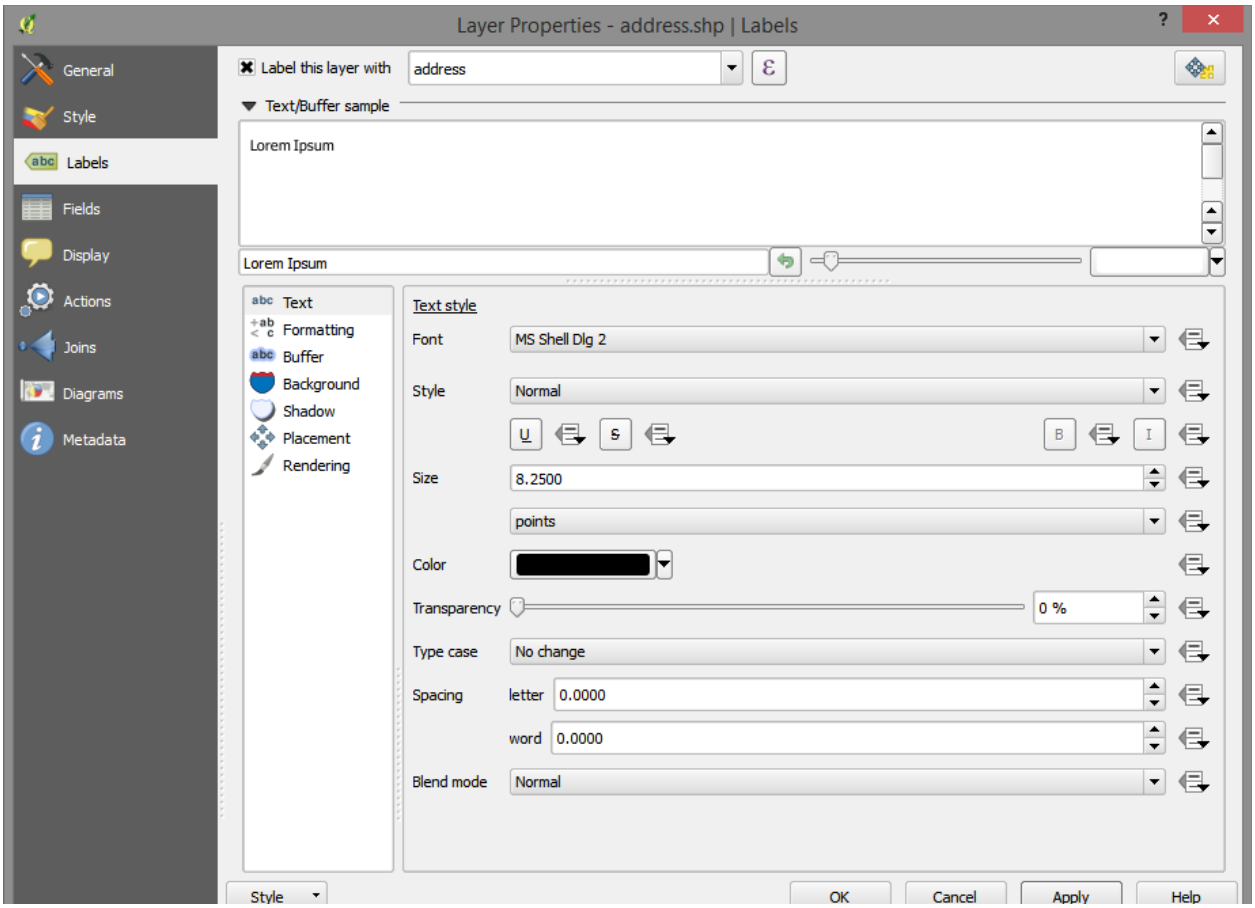

Save vector layer as...
Format
ESRI Shapefile
Save as
c:\packt\c1\data\output\county_projected.shp
Browse
CRS
EPSG:3857 - WGS 84 / Pseudo Mercator
Encoding
System
Save only selected features
Skip attribute creation
Add saved file to map
Symbology export
No symbology
Scale
1:50000
Extent (current: layer)
Datasource Options
Layer Options
Custom Options
OK
Cancel
Help

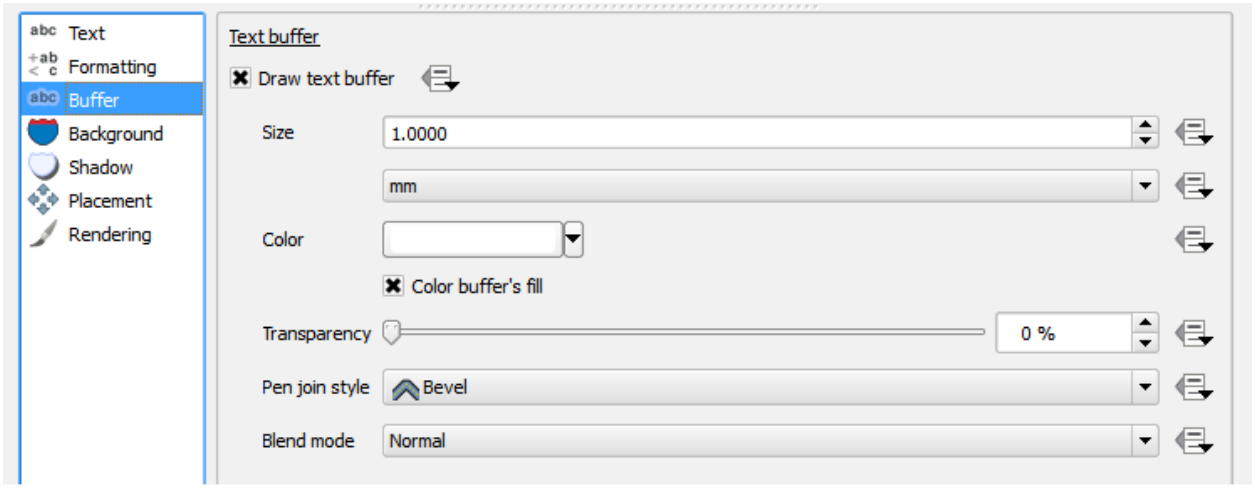

Coordinate Reference System Selector
Filter
delaware
Recently used coordinate reference systems
Coordinate Reference System
Authority ID
Coordinate reference systems of the world
Hide deprecated CRSs
Coordinate Reference System
Authority ID
Projected Coordinate Systems
Transverse Mercator
NAD27 / Delaware
EPSG:26757
NAD83 / Delaware
EPSG:26957
NAD83 / Delaware (ftUS)
EPSG:2235
NAD83(HARN) / Delaware
EPSG:2776
NAD83(HARN) / Delaware (ftUS)
EPSG:2880
NAD83(NSRS2007) / Delaware
EPSG:3509
NAD83(NSRS2007) / Delaware (ftUS)
EPSG:3510
NAD_1983_HARN_StatePlane_Delaware_FIPS_0700
EPSG:102257
NAD_1983_StatePlane_Delaware_FIPS_0700_Feet
EPSG:102657
Selected CRS:
NAD83(HARN) / Delaware (ftUS)
+proj=tmerc +lat_0=38 +lon_0=-75.41666666666667 +k=0.999995 +x_0=200000.0001016002 +y_0=0 +ellps=GRS80
+towgs84=0,0,0,0,0,0,0 +units=us-ft +no_defs
OK
Cancel
Help

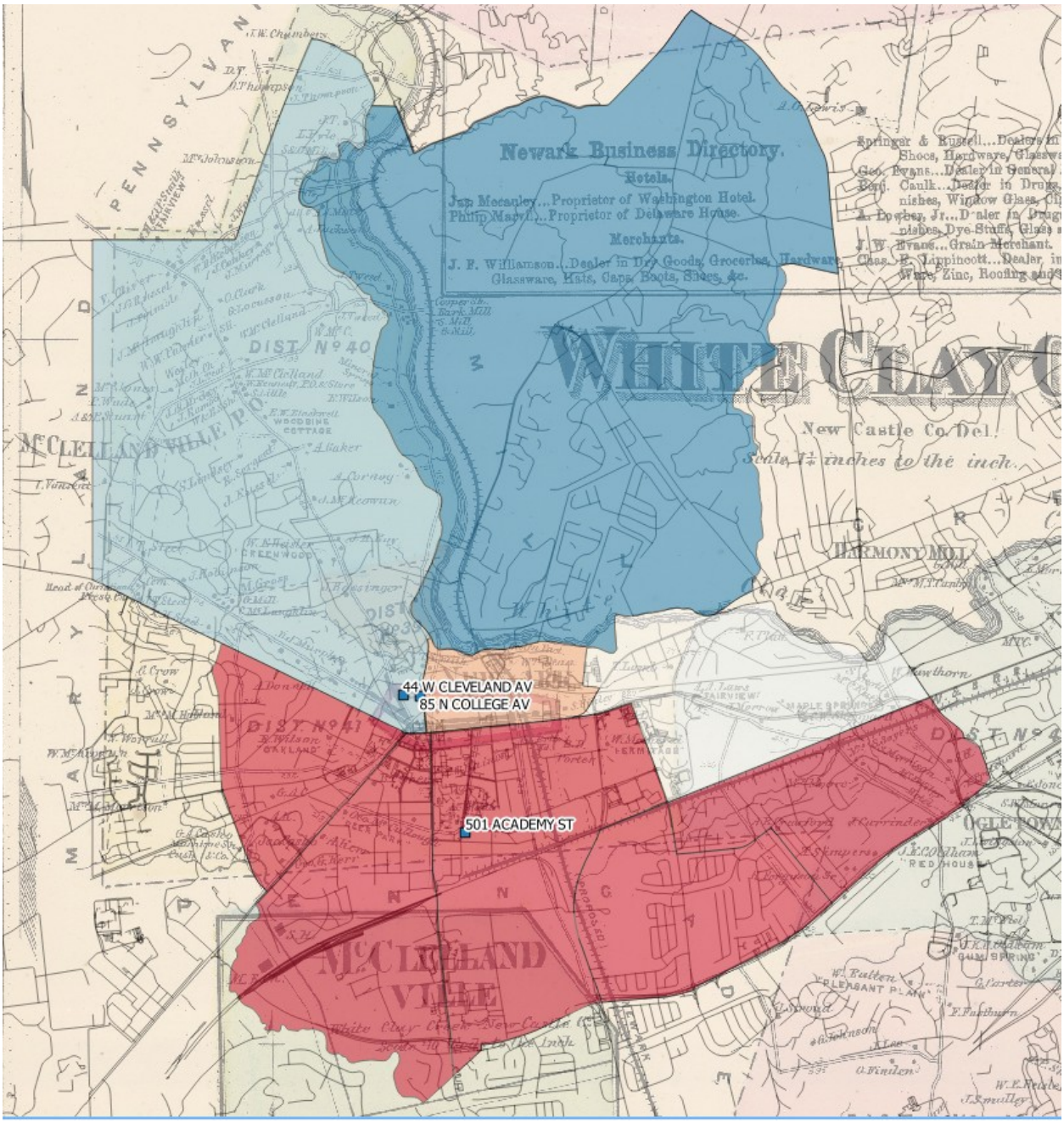

Layer Properties - tl_2010_10_tract10 | Style
General
Style
Labels
Fields
Rendering
Display
Actions
Joins
Diagrams
Metadata
Graduated
Column
temperature_mean_temp
Symbol
Change...
Classes
5
Color ramp
[source]
Invert
Mode
Equal Interval
Legend Format
%1 - %2
Precision
1
Trim
Symbol
Values
Legend
68.000 - 69.600
68.0000 - 69.6000
69.600 - 71.200
69.6000 - 71.2000
71.200 - 72.800
71.2000 - 72.8000
72.800 - 74.400
72.8000 - 74.4000
74.400 - 76.000
74.4000 - 76.0000
Classify
Add class
Delete
Delete all
Link class boundaries
Advanced
Layer rendering
Layer transparency
0
Layer blending mode
Normal
Feature blending mode
Normal
Style
OK
Cancel
Apply
Help




Newark Business Directory.
Hotels.
Jas. Mecanley...Proprietor of Washington Hotel.
Philip Marvil...Proprietor of Delaware House.
Merchants.
J. F. Williamson...Dealer in Dry Goods, Groceries, Hardware, Glassware, Hats, Caps, Boots, Shoes, &c.
Springer & Russell...Dealers in Shoes, Hardware, Glassw
Geo. Evans...Dealer in General
Benj. Caulk...Dealer in Drugs
nishes, Window Glass, C
A. Lowber, Jr...Dealer in Drug
nishes, Dye-Stuffs, Glass
J. W. Evans...Grain Merchant.
Chas. F. Lippincott...Dealer i
Ware, Zinc, Roofing and
WHITE CLAY C
New Castle Co. Del.
Scale 1¼ inches to the inch.
PENNSYLVANIA
MARYLAND
DIST. No 40
DIST. No 41
DIST. No 39
DIST. No 4
McCLELLANDVILLE P.O.
NEWARK P.O.
HARMONY MILL
OGLETOWN
McCLELLAND VILLE
White Clay Creek New Castle Co.
Scale 10 Rods to the Inch.
PROPOSED
NEWARK


Layer Properties - address.shp | Labels
General
Style
Labels
Fields
Display
Actions
Joins
Diagrams
Metadata
Label this layer with
address
Text/Buffer sample
Lorem Ipsum
Lorem Ipsum
Text
Formatting
Buffer
Background
Shadow
Placement
Rendering
Text style
Font
MS Shell Dlg 2
Style
Normal
Size
8.2500
points
Color
Transparency
0 %
Type case
No change
Spacing
letter
0.0000
word
0.0000
Blend mode
Normal
Style
OK
Cancel
Apply
Help


Text
Formatting
Buffer
Background
Shadow
Placement
Rendering
Text buffer
Draw text buffer
Size
1.0000
mm
Color
Color buffer's fill
Transparency
0 %
Pen join style
Bevel
Blend mode
Normal


Newark Business Directory.
Hotels.
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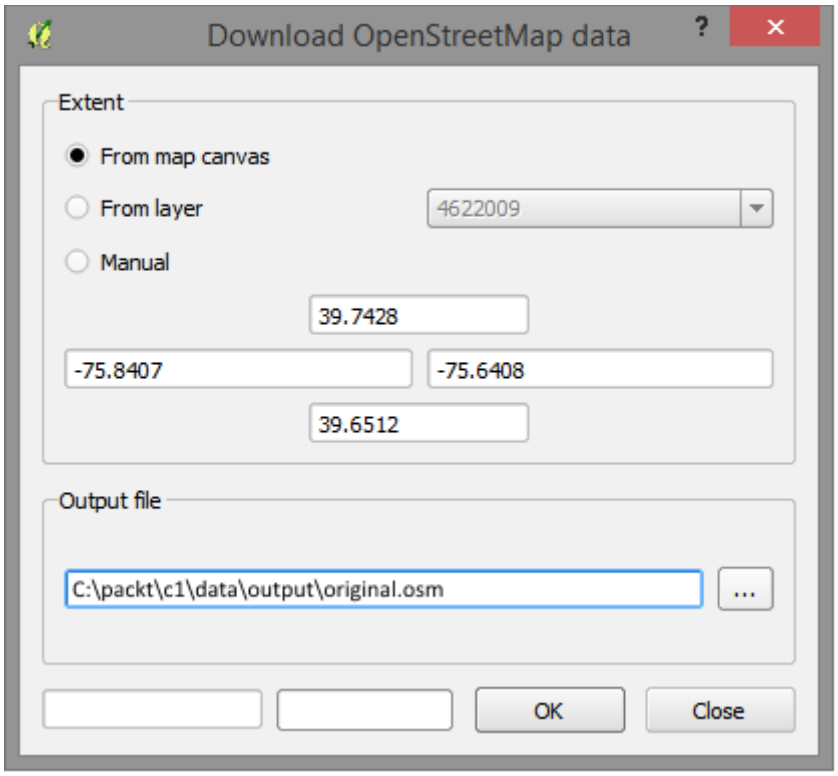
Philip Marvil...Proprietor of Delaware House.
Merchants.
J. F. Williamson...Dealer in Dry Goods, Groceries, Hardware, Glassware, Hats, Caps, Boots, Shoes, &c.
WHITE CLAY C
New Castle Co. Del.
Scale, 1½ inches to the inch.
DIST Nº 40
DIST Nº 41
McCLELLAND VILLE P.O.
HARMONY MILL
44 W CLEVELAND AV
85 N COLLEGE AV
501 ACADEMY ST
McCLELLAND VILLE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Extent
From map canvas
From layer
4622009
Manual
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-75.6408
39.6512
Output file
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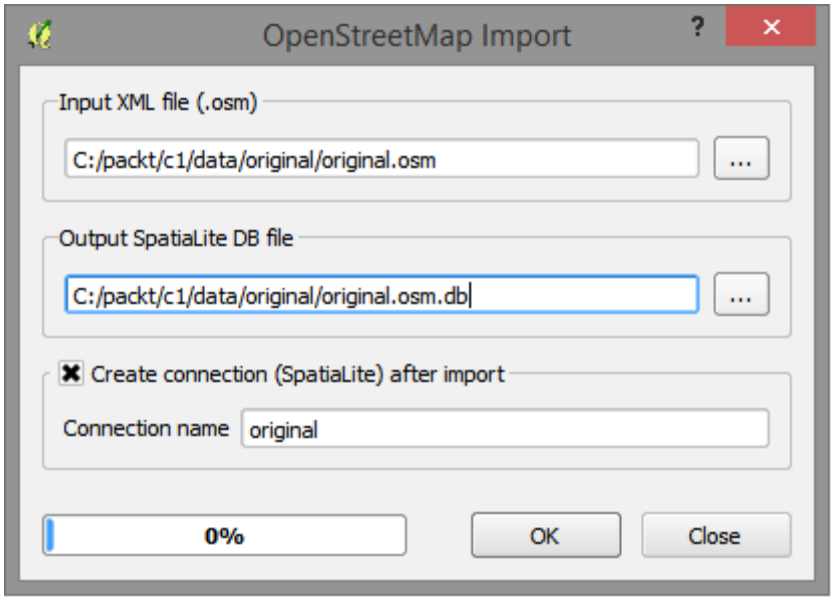
...
OK
Close


OpenStreetMap Import
Input XML file (.osm)
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Output SpatiaLite DB file
C:/packt/c1/data/original/original.osm.db
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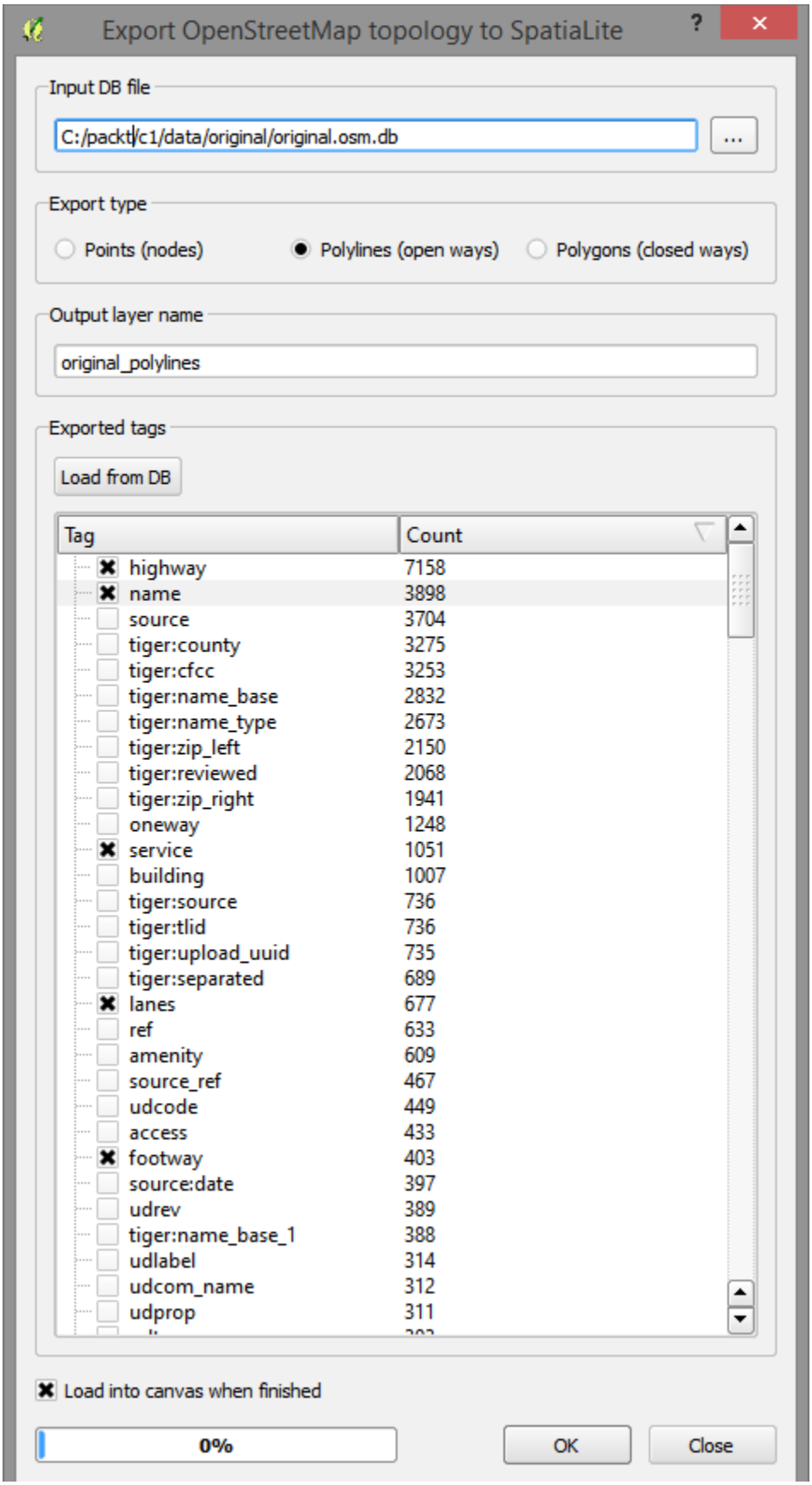
Create connection (SpatiaLite) after import
Connection name
original
0%
OK
Close


Export OpenStreetMap topology to SpatiaLite
Input DB file
C:/packt/c1/data/original/original.osm.db
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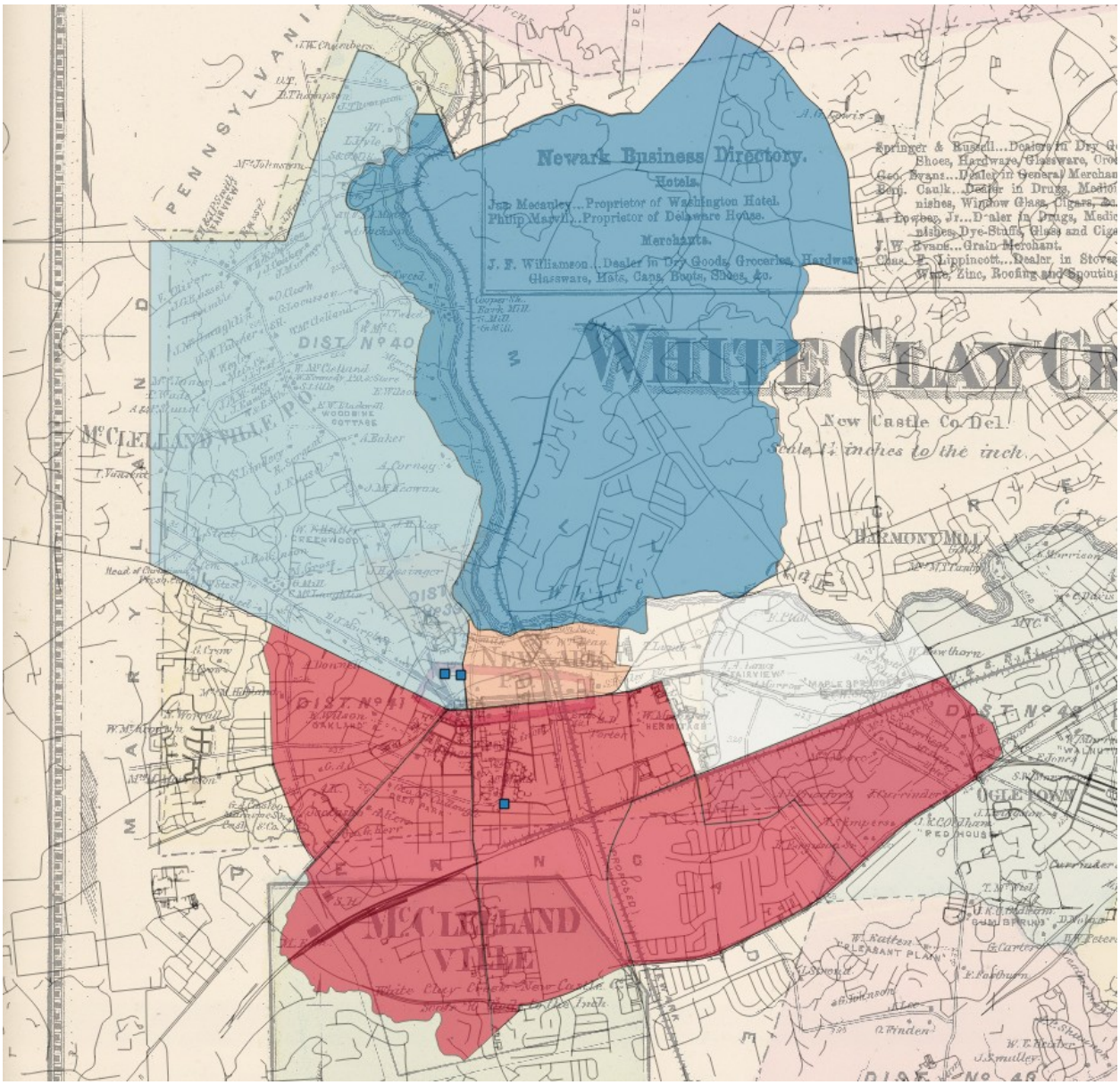
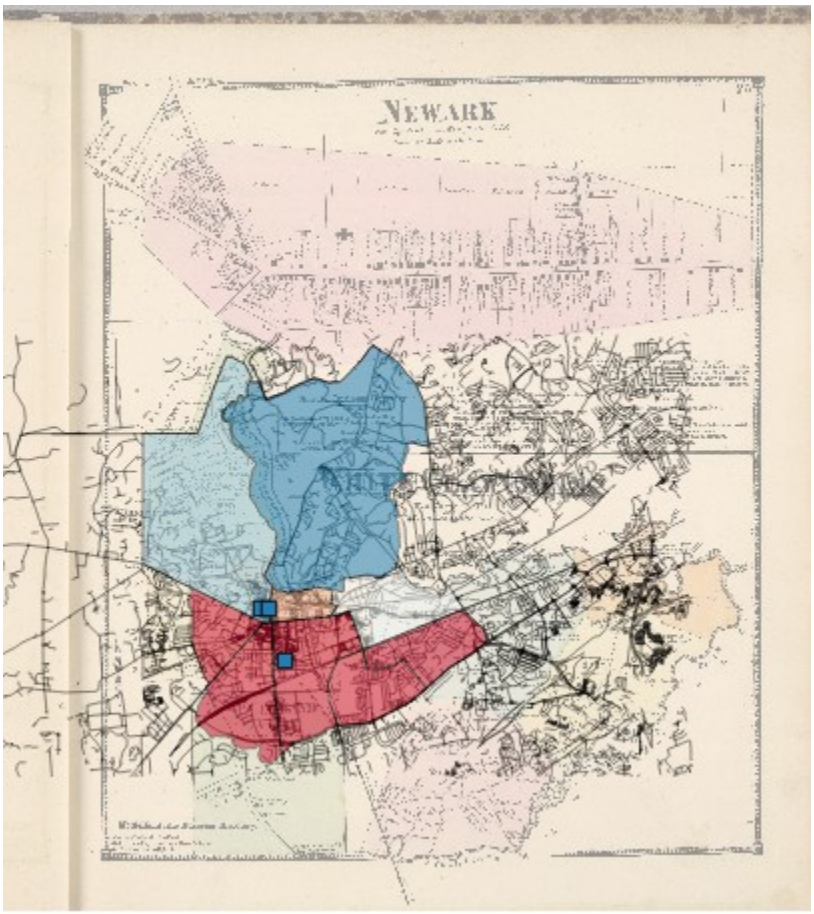
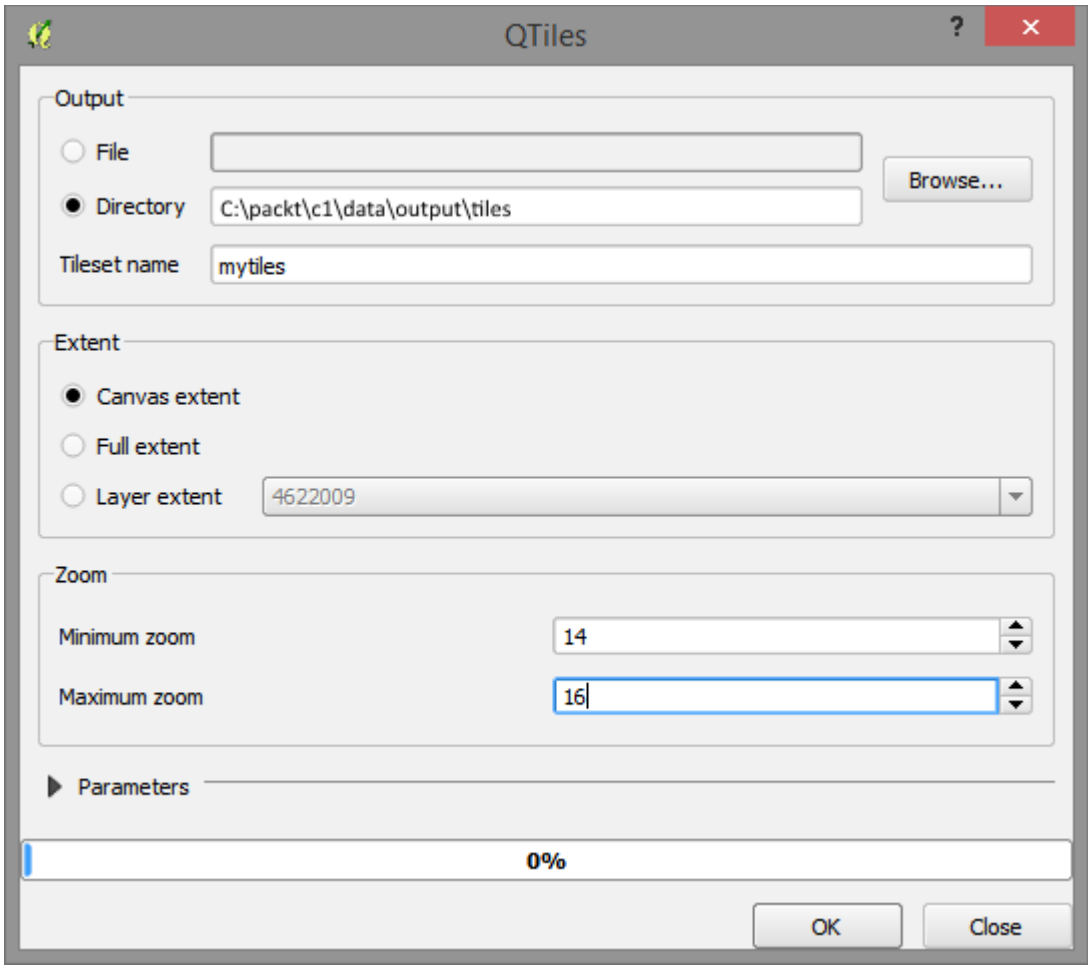
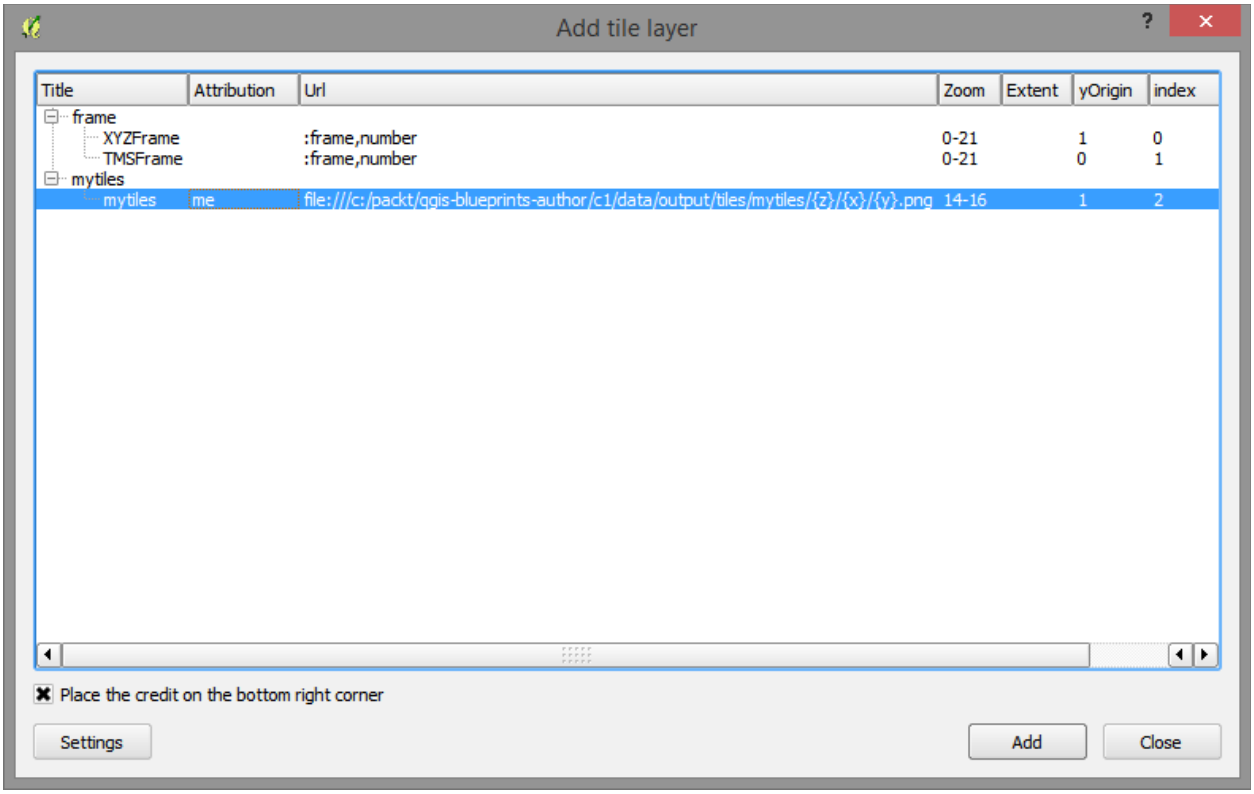
Export type
Points (nodes)
Polylines (open ways)
Polygons (closed ways)
Output layer name
original_polylines
Exported tags
Load from DB
Tag
Count
highway 7158
name 3898
source 3704
tiger:county 3275
tiger:cfcc 3253
tiger:name_base 2832
tiger:name_type 2673
tiger:zip_left 2150
tiger:reviewed 2068
tiger:zip_right 1941
oneway 1248
service 1051
building 1007
tiger:source 736
tiger:tlid 736
tiger:upload_uuid 735
tiger:separated 689
lanes 677
ref 633
amenity 609
source_ref 467
udcode 449
access 433
footway 403
source:date 397
udrev 389
tiger:name_base_1 388
udlabel 314
udcom_name 312
udprop 311
Load into canvas when finished
0%
OK
Close

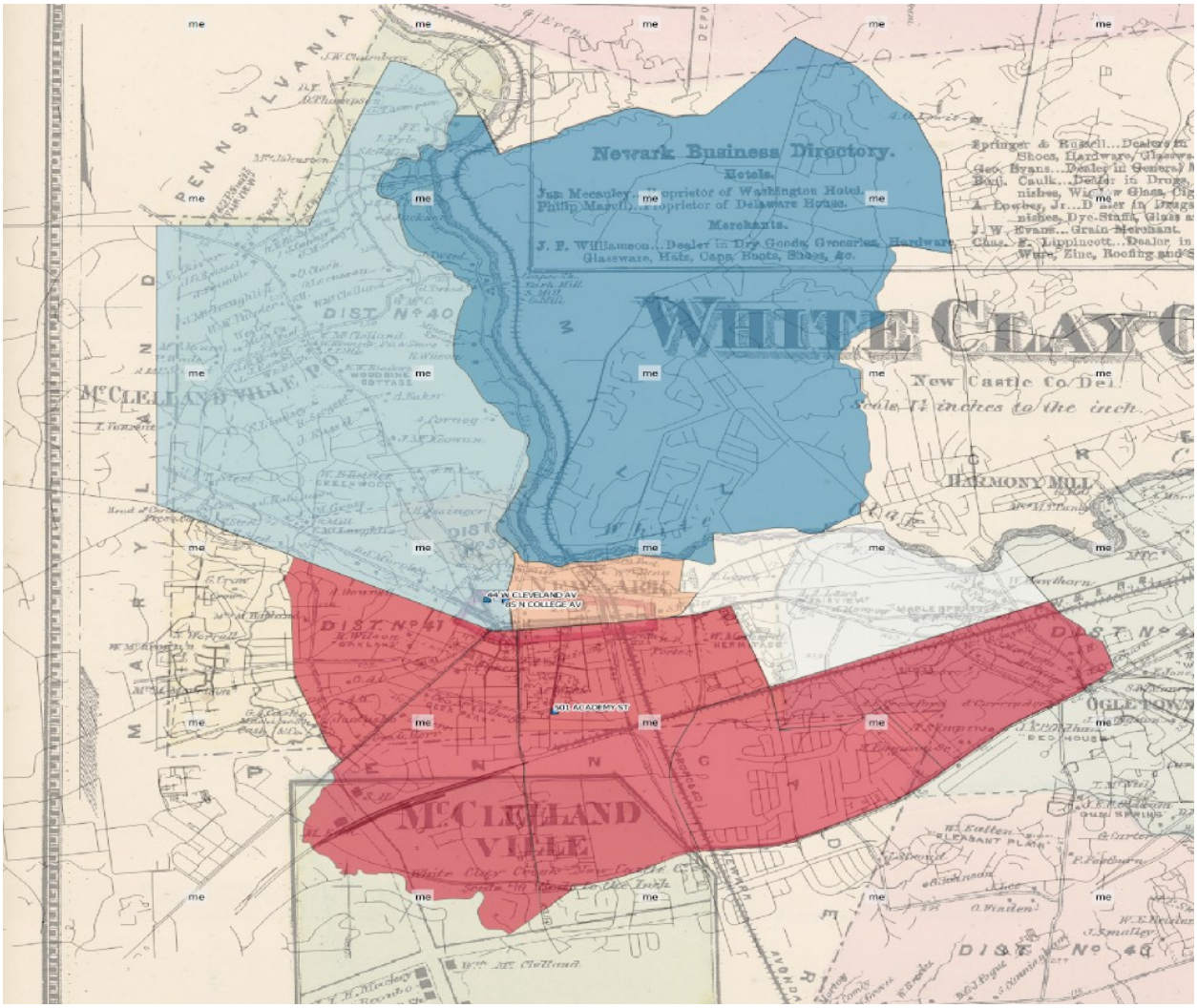

Newark Business Directory.
Hotels.
Jno. Macauley...Proprietor of Washington Hotel.
Philip Marvil...Proprietor of Delaware House.
Merchants.
J. F. Williamson...Dealer in Dry Goods, Groceries, Hardware, Glassware, Hats, Cans, Boots, Shoes, &c.
WHITE CLAY CR
New Castle Co. Del.
Scale 1 inches to the inch.
DIST. Nº 40
DIST. Nº 41
DIST. Nº 42
McCLELLAND VILLE
HARMONY MILL
OGLE TOWN
PENNSYLVANIA
MARYLAND


NEWARK

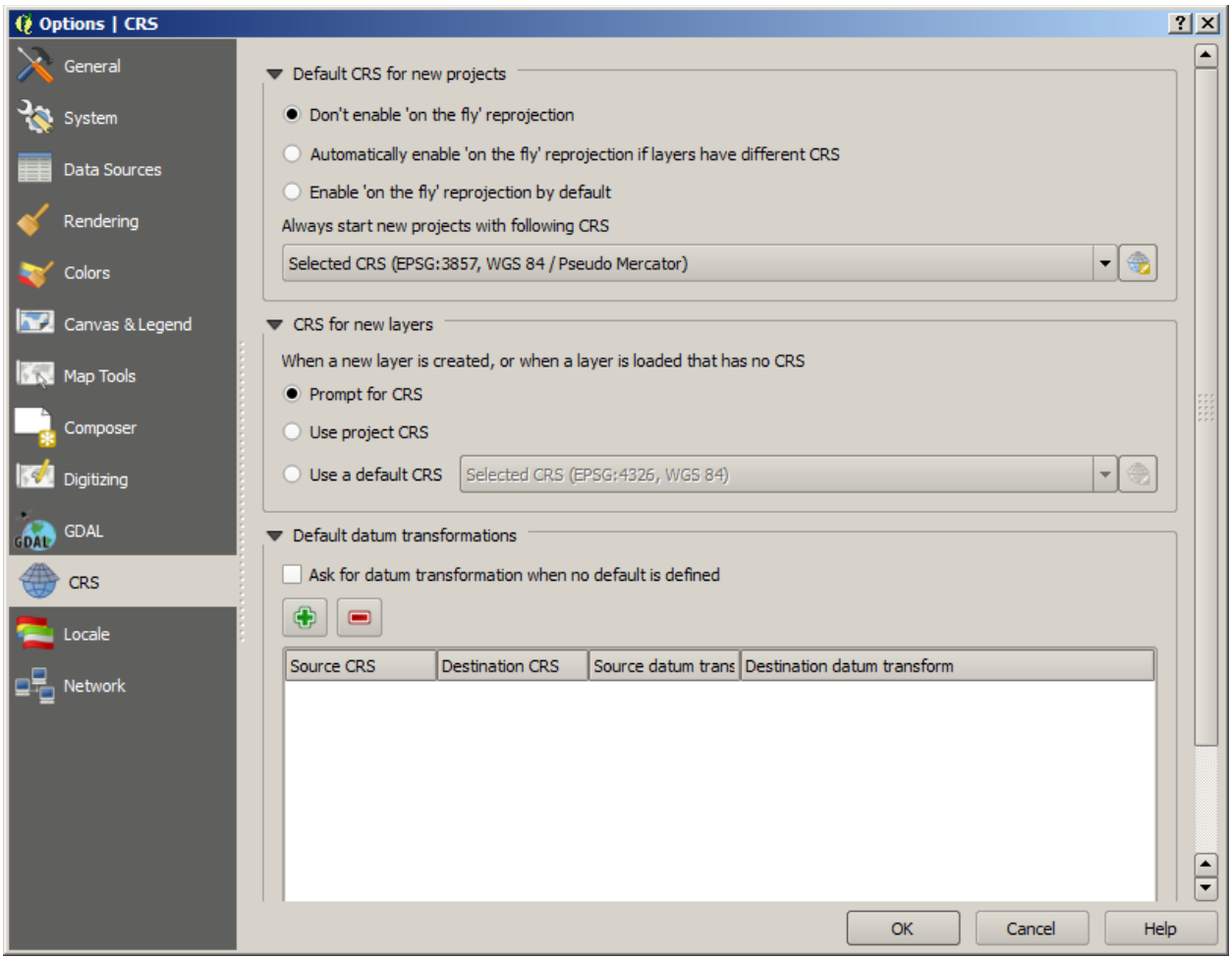

QTiles
Output
File
Directory
C:\packt\c1\data\output\tiles
Browse...
Tileset name
mytiles
Extent
Canvas extent
Full extent
Layer extent
4622009
Zoom
Minimum zoom
14
Maximum zoom
16
Parameters
0%
OK
Close

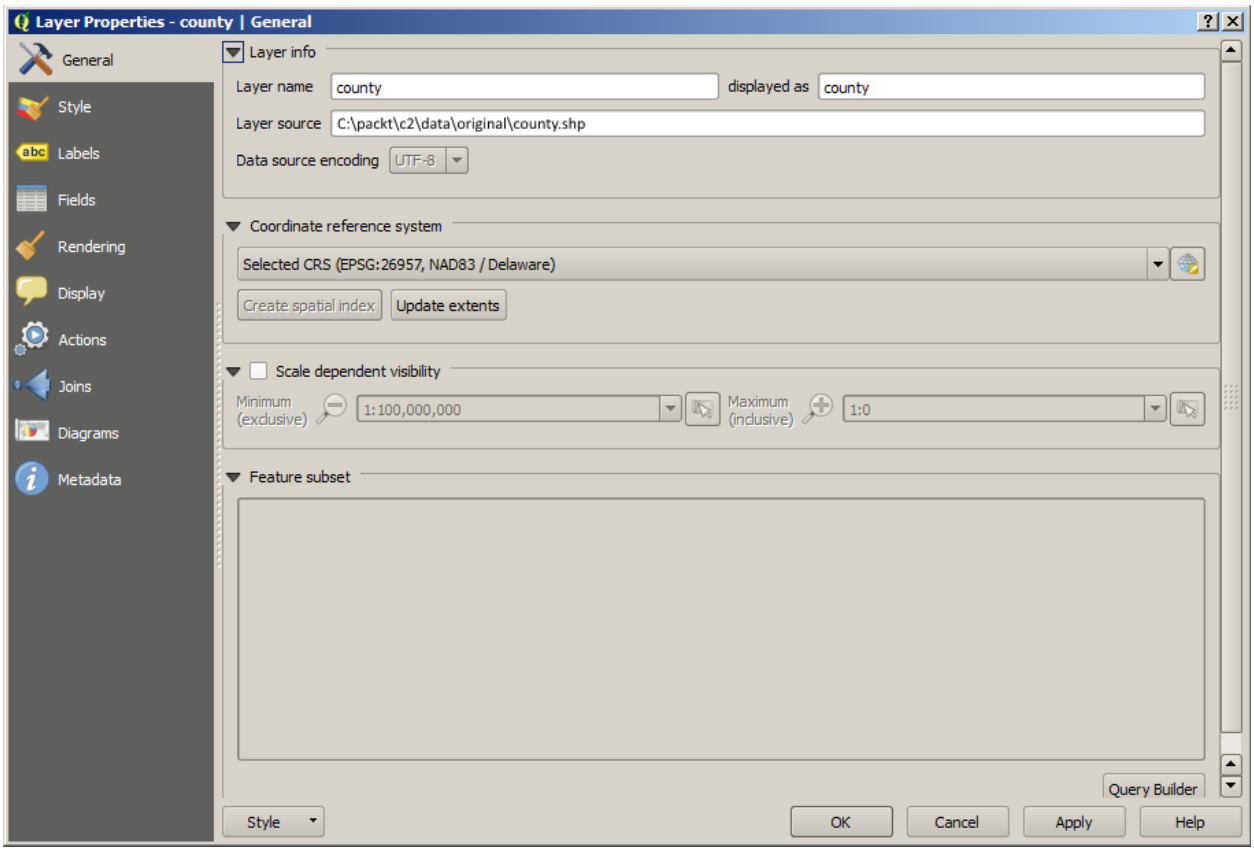

me

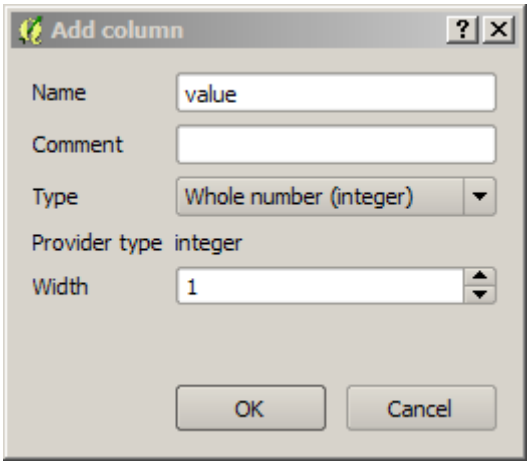

Add tile layer
Title
Attribution
Url
Zoom
Extent
yOrigin
index
frame
XYZFrame
:frame,number
0-21
1
0
TMSFrame
:frame,number
0-21
0
1
mytiles
mytiles
me
file:///c:/packt/qgis-blueprints-author/c1/data/output/tiles/mytiles/{z}/{x}/{y}.png
14-16
1
2
Place the credit on the bottom right corner
Settings
Add
Close

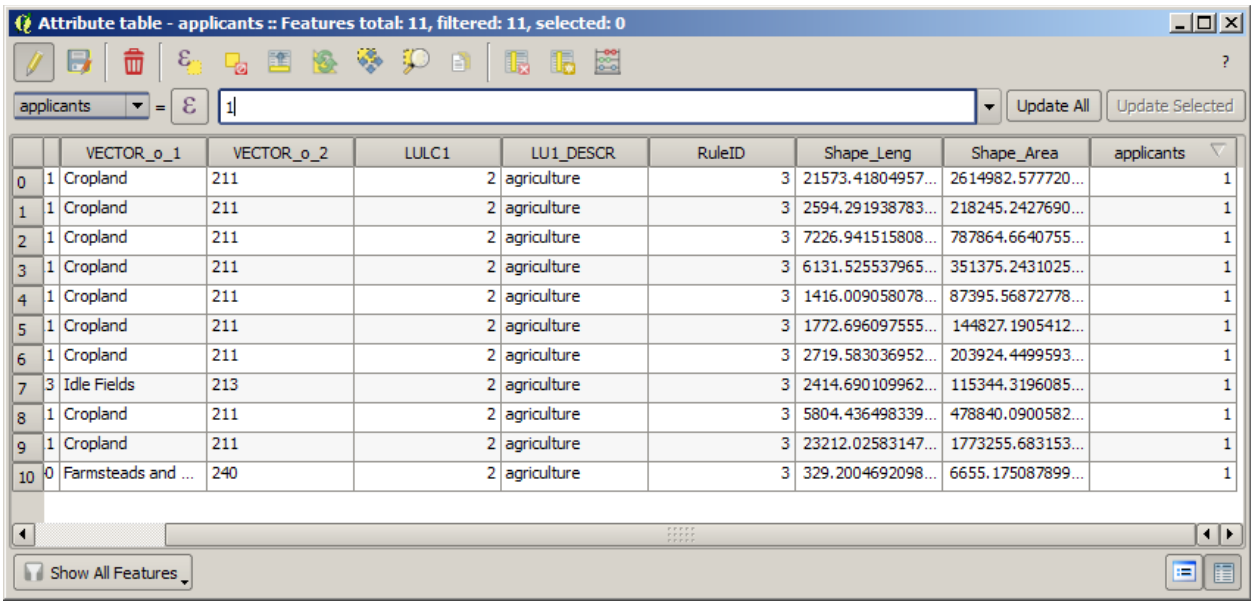


Chapter 2: Identifying the Best Places

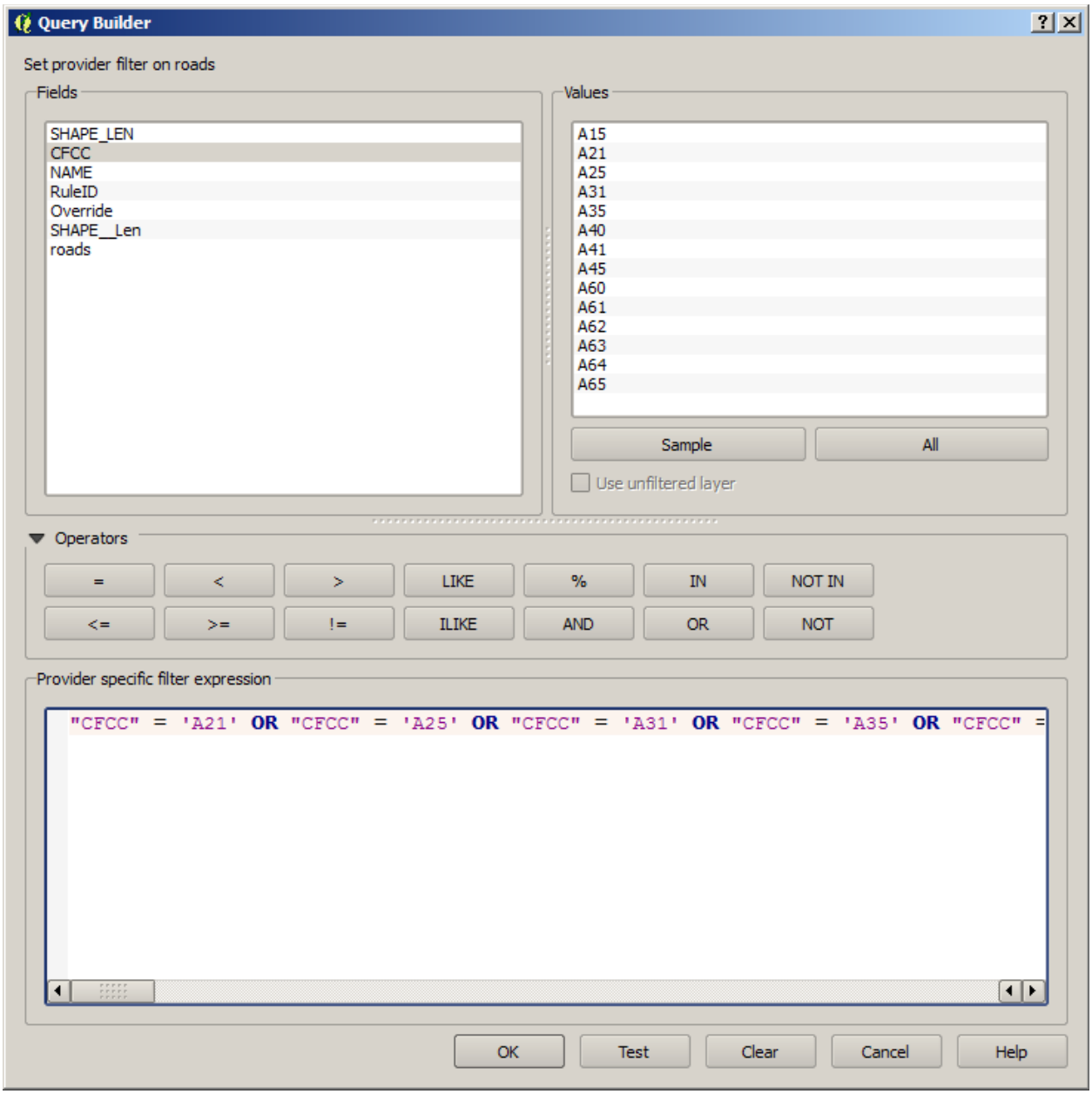

Options | CRS
General
System
Data Sources
Rendering
Colors
Canvas & Legend
Map Tools
Composer
Digitizing
GDAL
CRS
Locale
Network
Default CRS for new projects
Don't enable 'on the fly' reprojection
Automatically enable 'on the fly' reprojection if layers have different CRS
Enable 'on the fly' reprojection by default
Always start new projects with following CRS
Selected CRS (EPSG:3857, WGS 84 / Pseudo Mercator)
CRS for new layers
When a new layer is created, or when a layer is loaded that has no CRS
Prompt for CRS
Use project CRS
Use a default CRS
Selected CRS (EPSG:4326, WGS 84)
Default datum transformations
Ask for datum transformation when no default is defined
Source CRS
Destination CRS
Source datum trans
Destination datum transform
OK
Cancel
Help

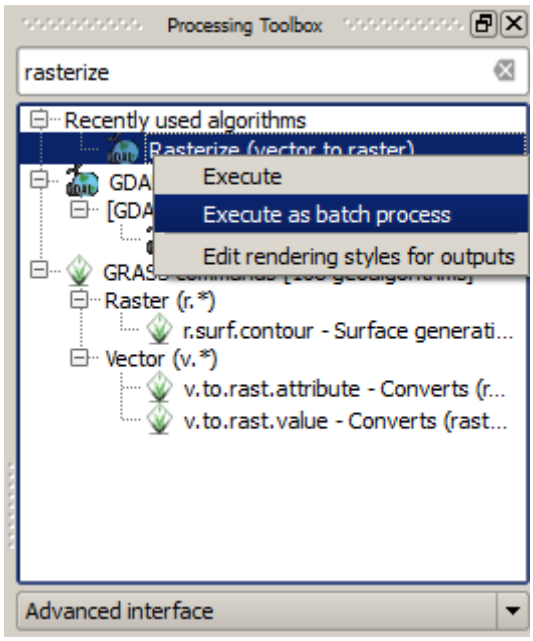

Layer Properties - county | General
General
Style
Labels
Fields
Rendering
Display
Actions
Joins
Diagrams
Metadata
Layer info
Layer name
county
displayed as
county
Layer source
C:\packt\c2\data\original\county.shp
Data source encoding
UTF-8
Coordinate reference system
Selected CRS (EPSG:26957, NAD83 / Delaware)
Create spatial index
Update extents
Scale dependent visibility
Minimum (exclusive)
1:100,000,000
Maximum (inclusive)
1:0
Feature subset
Query Builder
Style
OK
Cancel
Apply
Help

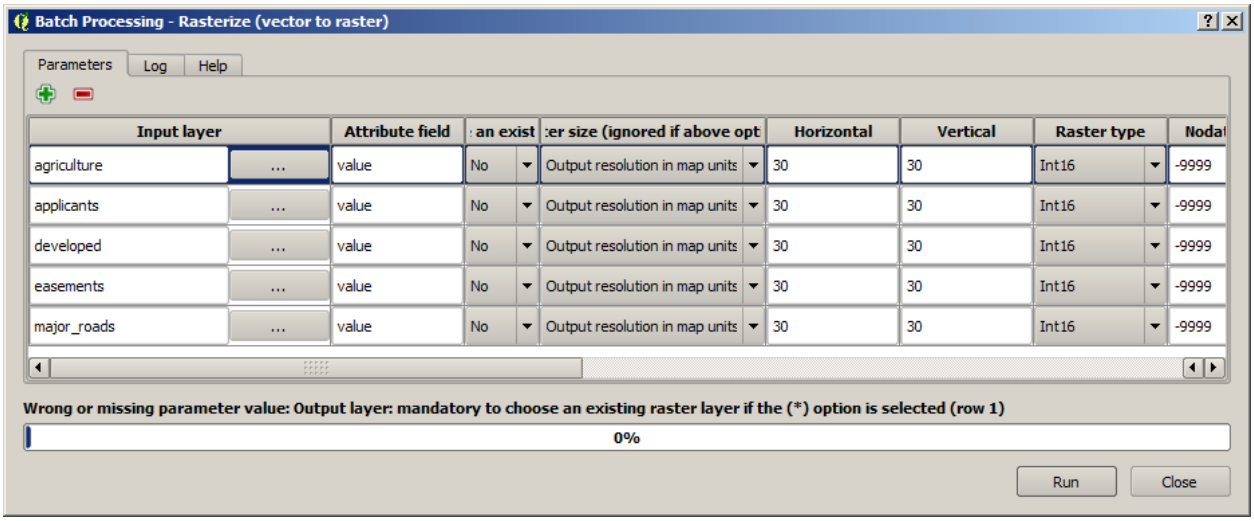

Add column
Name
value
Comment
Type
Whole number (integer)
Provider type
integer
Width
1
OK
Cancel

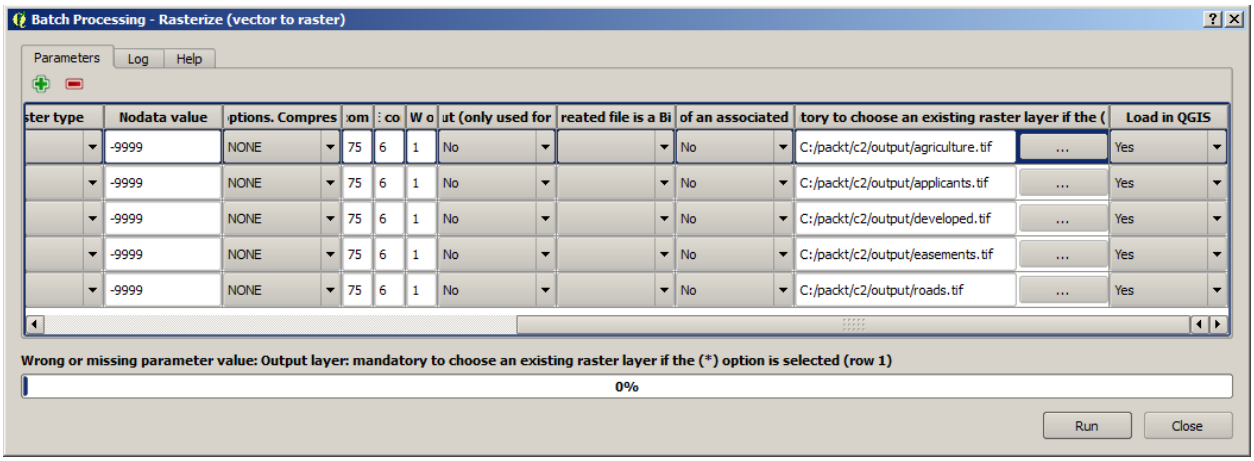


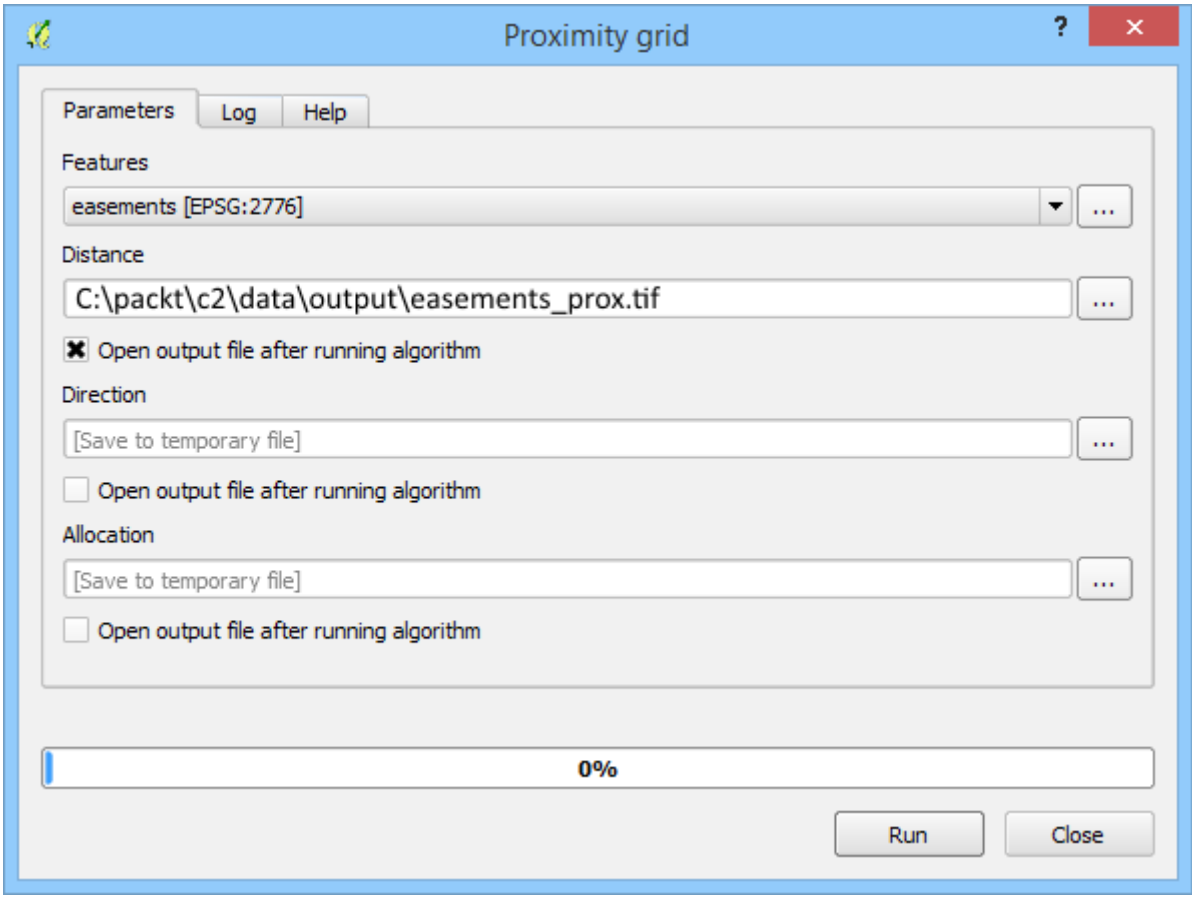
		VECTOR_o_1	VECTOR_o_2	LULC1	LU1_DESCR	RuleID	Shape_Leng	Shape_Area	applicants
0	1	Cropland	211	2	agriculture	3	21573.41804957...	2614982.577720...	1
1	1	Cropland	211	2	agriculture	3	2594.291938783...	218245.2427690...	1
2	1	Cropland	211	2	agriculture	3	7226.941515808...	787864.6640755...	1
3	1	Cropland	211	2	agriculture	3	6131.525537965...	351375.2431025...	1
4	1	Cropland	211	2	agriculture	3	1416.009058078...	87395.56872778...	1
5	1	Cropland	211	2	agriculture	3	1772.696097555...	144827.1905412...	1
6	1	Cropland	211	2	agriculture	3	2719.583036952...	203924.4499593...	1
7	3	Idle Fields	213	2	agriculture	3	2414.690109962...	115344.3196085...	1
8	1	Cropland	211	2	agriculture	3	5804.436498339...	478840.0900582...	1
9	1	Cropland	211	2	agriculture	3	23212.02583147...	1773255.683153...	1
10	0	Farmsteads and ...	240	2	agriculture	3	329.2004692098...	6655.175087899...	1

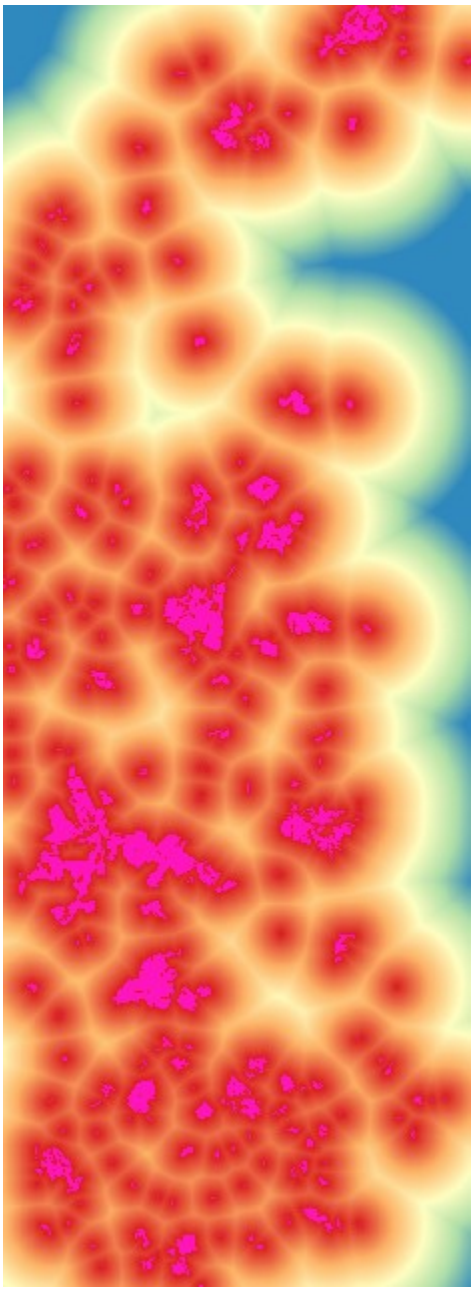

Query Builder
Set provider filter on roads
Fields
SHAPE_LEN
CFCC
NAME
RuleID
Override
SHAPE__Len
roads
Values
A15
A21
A25
A31
A35
A40
A41
A45
A60
A61
A62
A63
A64
A65
Sample
All
Use unfiltered layer
Operators
=
<
>
LIKE
%
IN
NOT IN
<=
>=
!=
ILIKE
AND
OR
NOT
Provider specific filter expression
"CFCC" = 'A21' OR "CFCC" = 'A25' OR "CFCC" = 'A31' OR "CFCC" = 'A35' OR "CFCC" =
OK
Test
Clear
Cancel
Help

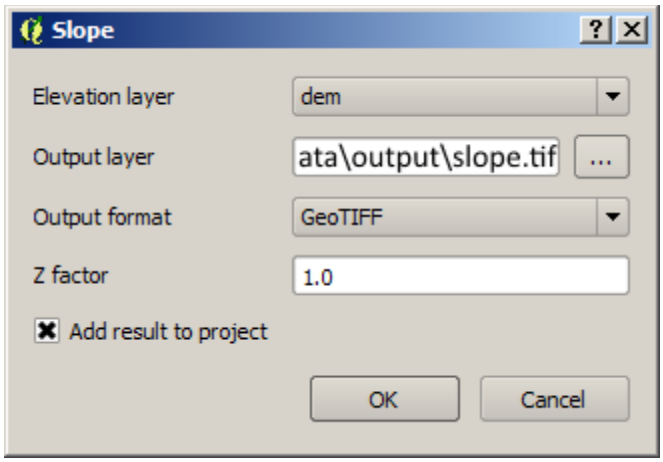

Processing Toolbox
rasterize
Recently used algorithms
Rasterize (vector to raster)
Execute
Execute as batch process
Edit rendering styles for outputs
Raster (r.*)
r.surf.contour - Surface generati...
Vector (v.*)
v.to.rast.attribute - Converts (r...
v.to.rast.value - Converts (rast...
Advanced interface

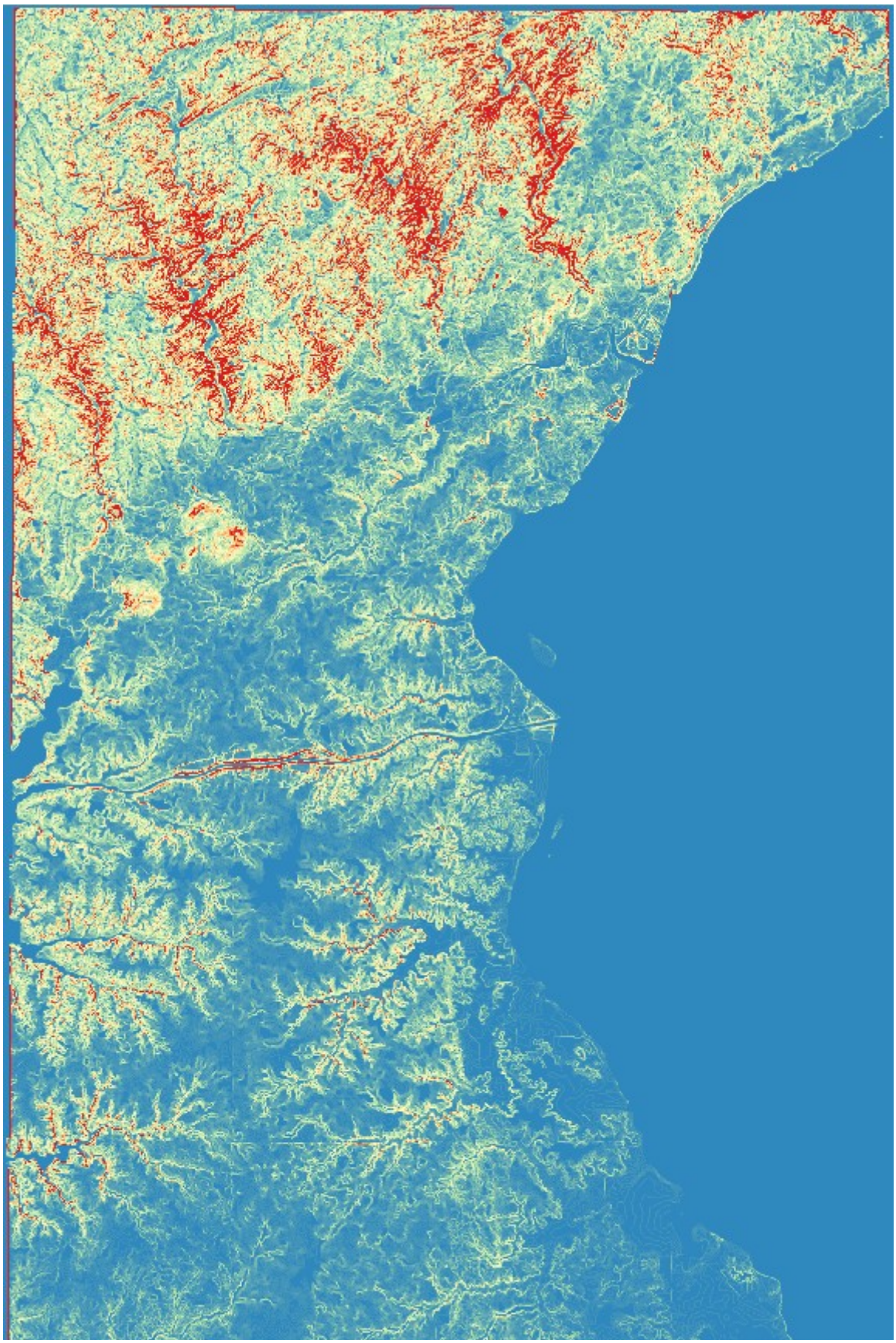

Batch Processing - Rasterize (vector to raster)
Parameters
Log
Help
Input layer
Attribute field
an exist
er size (ignored if above opt
Horizontal
Vertical
Raster type
Noda
agriculture
applicants
developed
easements
major_roads
value
No
Output resolution in map units
30
Int16
-9999
Wrong or missing parameter value: Output layer: mandatory to choose an existing raster layer if the (*) option is selected (row 1)
0%
Run
Close

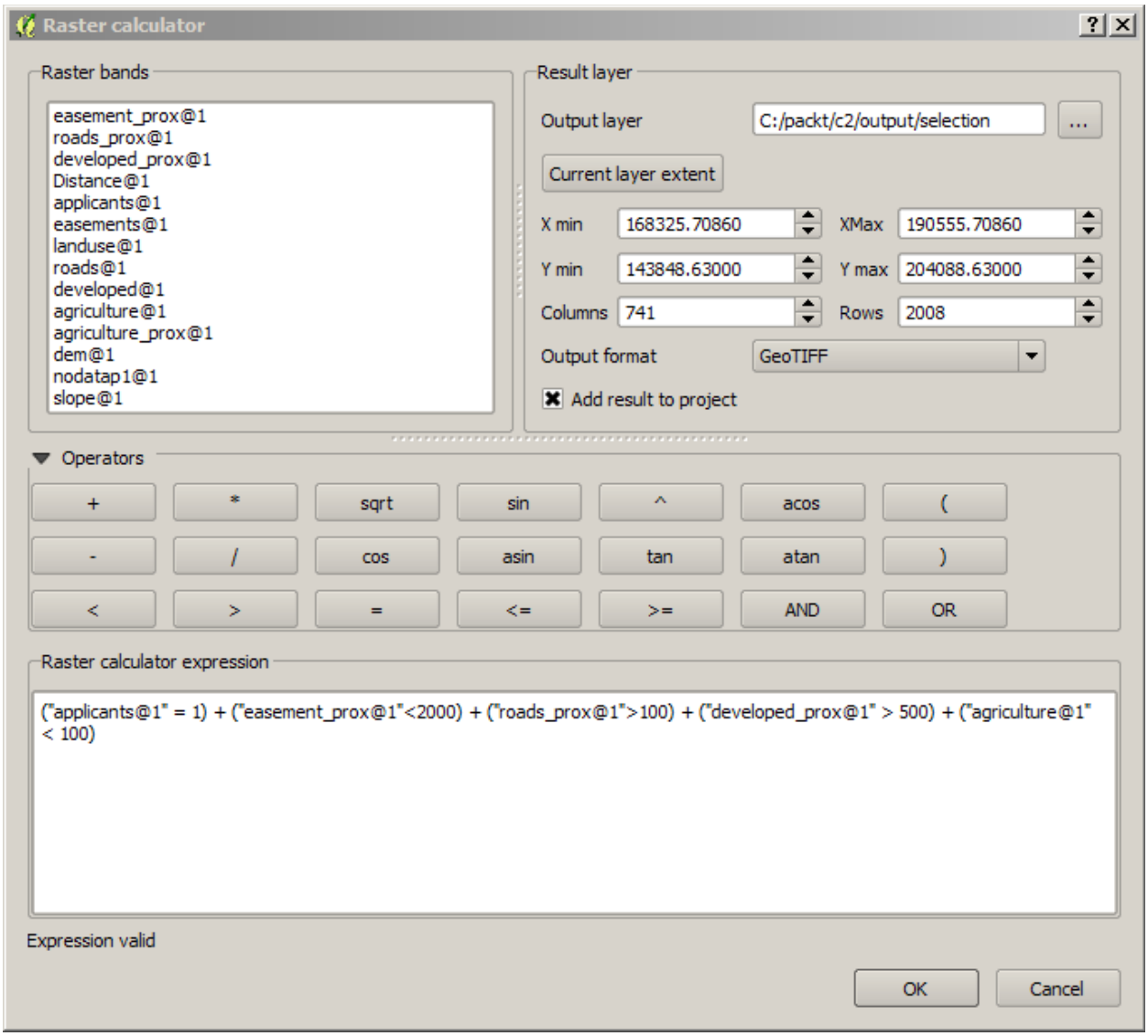

Batch Processing - Rasterize (vector to raster)
Parameters
Log
Help
ster type
Nodata value
ptions. Compres
om
co
W o
ut (only used for
reated file is a Bi
of an associated
tory to choose an existing raster layer if the (
Load in QGIS
-9999
NONE
75
6
1
No
C:/packt/c2/output/agriculture.tif
C:/packt/c2/output/applicants.tif
C:/packt/c2/output/developed.tif
C:/packt/c2/output/easements.tif
C:/packt/c2/output/roads.tif
Yes
Wrong or missing parameter value: Output layer: mandatory to choose an existing raster layer if the (*) option is selected (row 1)
0%
Run
Close

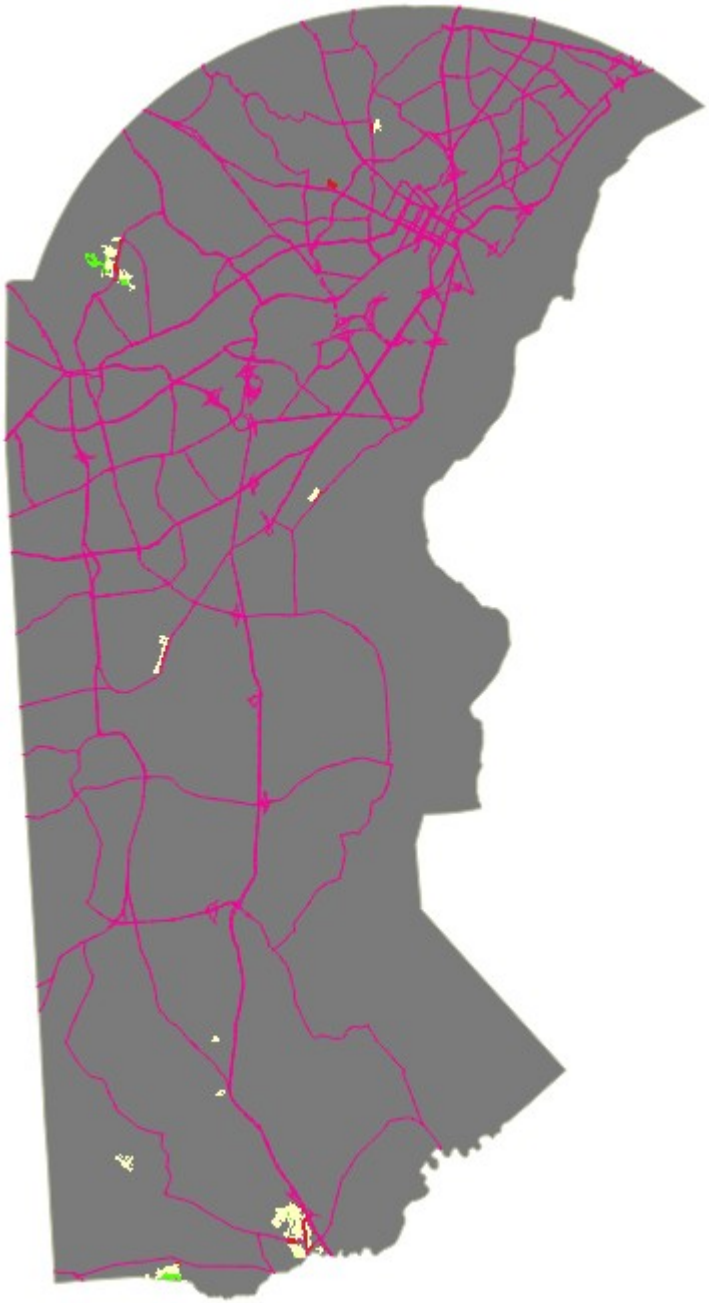

Proximity grid
Parameters
Log
Help
Features
easements [EPSG:2776]
Distance
C:\packt\c2\data\output\easements_prox.tif
Open output file after running algorithm
Direction
[Save to temporary file]
Open output file after running algorithm
Allocation
[Save to temporary file]
Open output file after running algorithm
0%
Run
Close

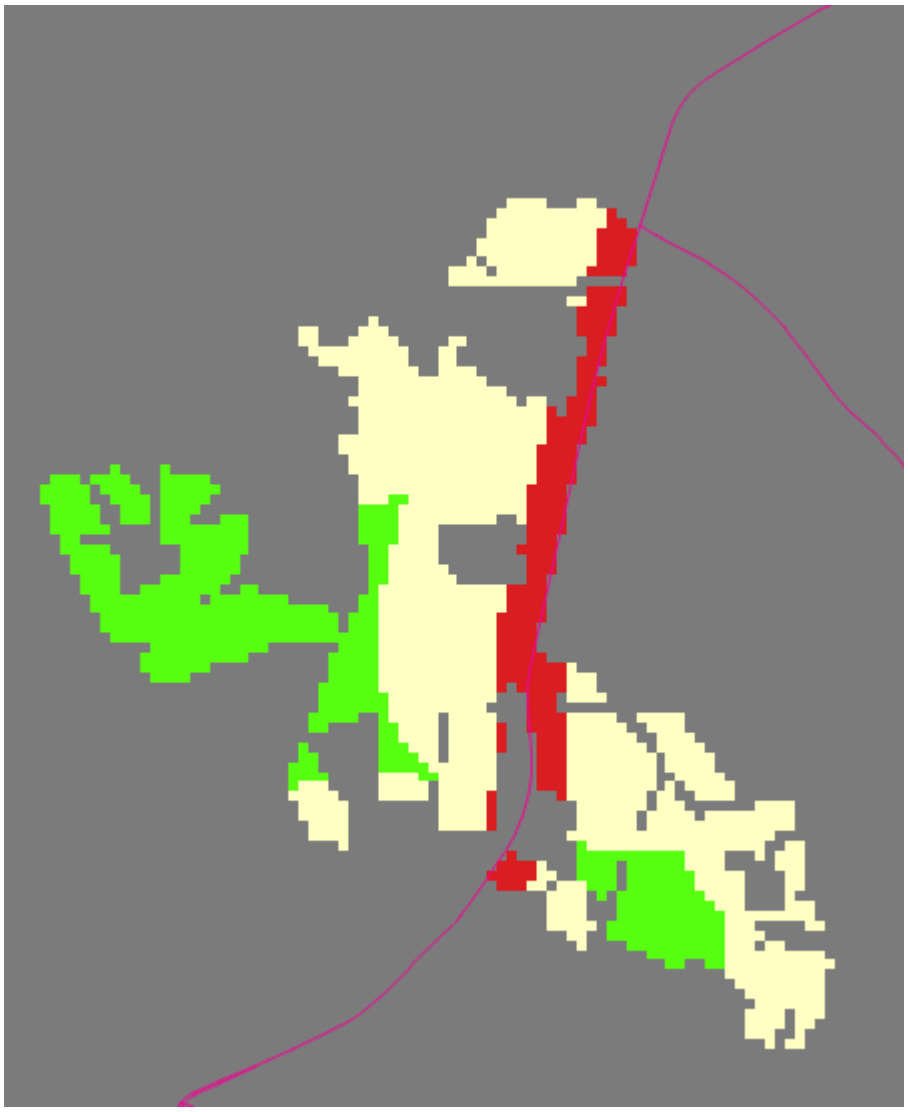


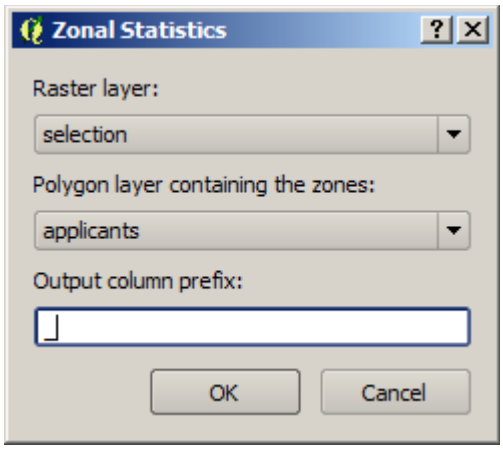

Slope
Elevation layer
dem
Output layer
ata\output\slope.tif
...
Output format
GeoTIFF
Z factor
1.0
Add result to project
OK
Cancel




Raster calculator
Raster bands
easement_prox@1
roads_prox@1
developed_prox@1
Distance@1
applicants@1
easements@1
landuse@1
roads@1
developed@1
agriculture@1
agriculture_prox@1
dem@1
nodatap1@1
slope@1
Result layer
Output layer
C:/packt/c2/output/selection
...
Current layer extent
X min
168325.70860
XMax
190555.70860
Y min
143848.63000
Y max
204088.63000
Columns
741
Rows
2008
Output format
GeoTIFF
Add result to project
Operators
+
*
sqrt
sin
^
acos
(
-
/
cos
asin
tan
atan
)
<
>
=
<=
>=
AND
OR
Raster calculator expression
("applicants@1" = 1) + ("easement_prox@1"<2000) + ("roads_prox@1">100) + ("developed_prox@1" > 500) + ("agriculture@1" < 100)
Expression valid
OK
Cancel



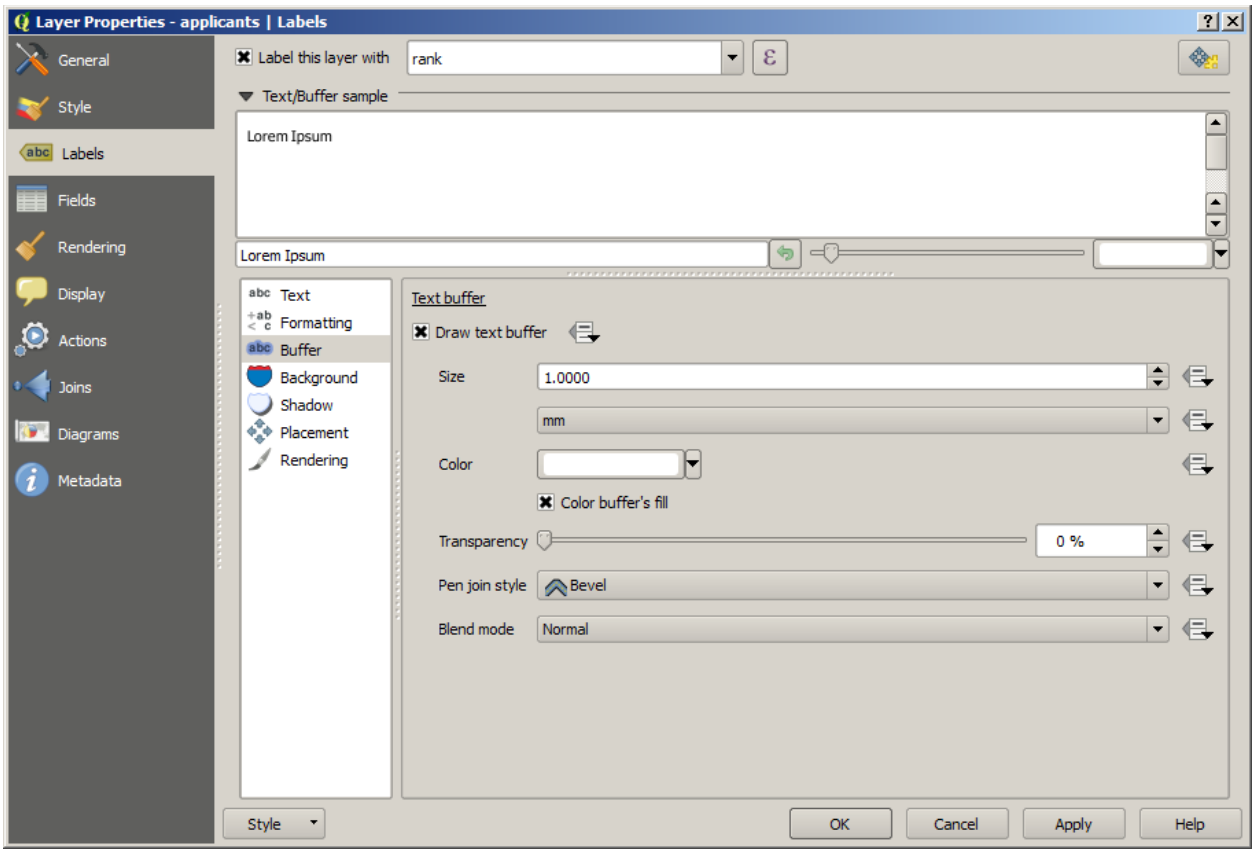


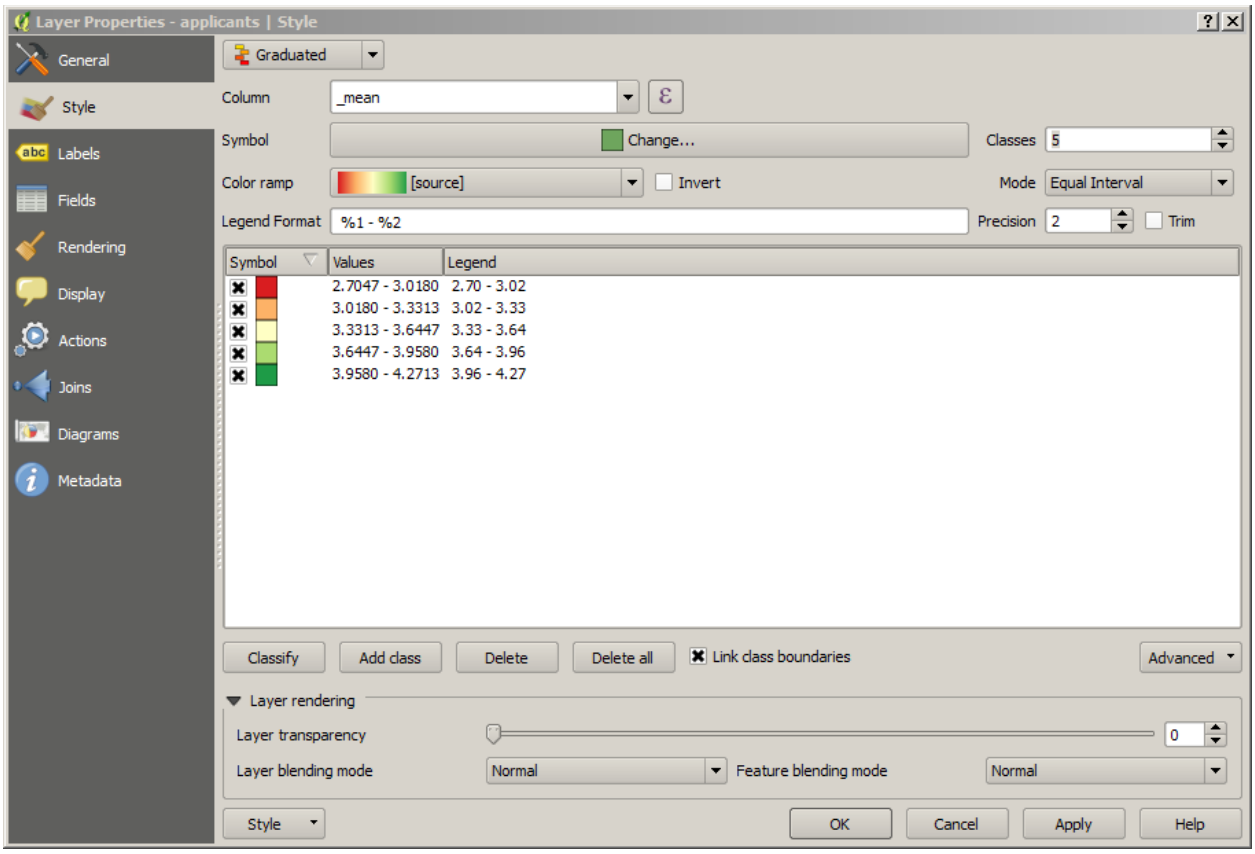


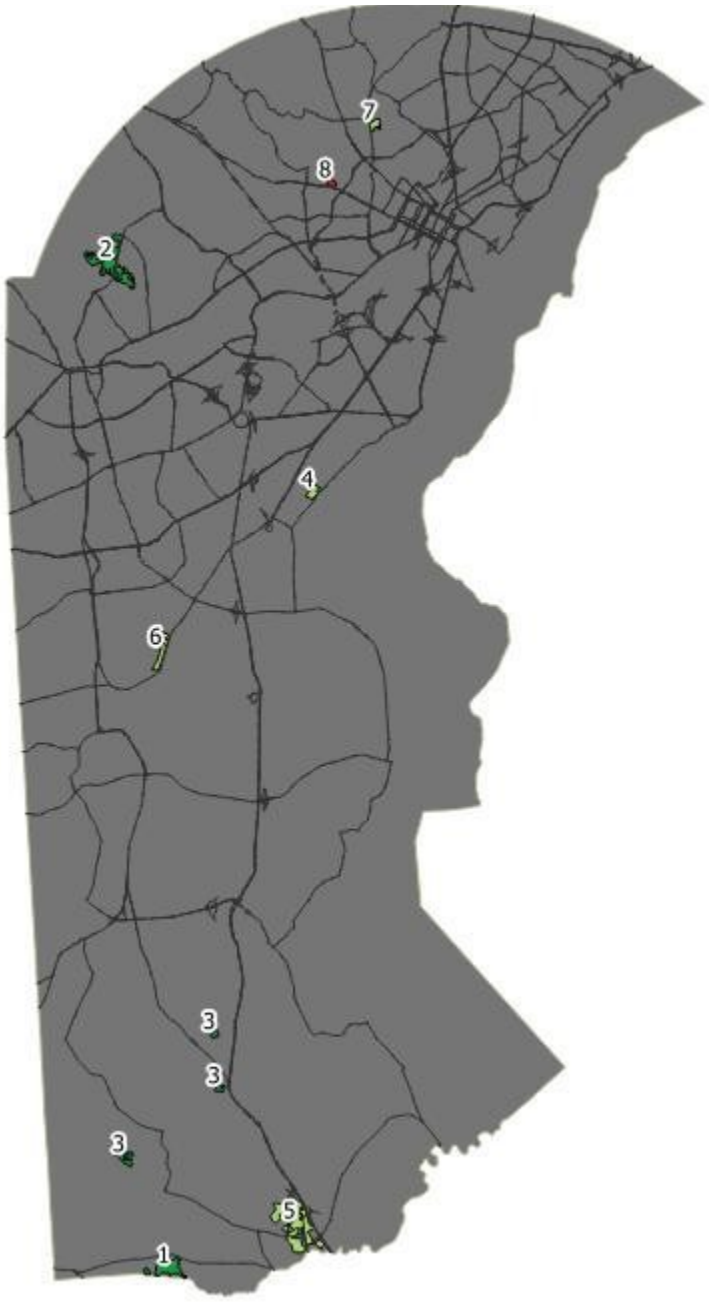
Attribute table - applicants :: Features total: 11, filtered: 11, selected: 0

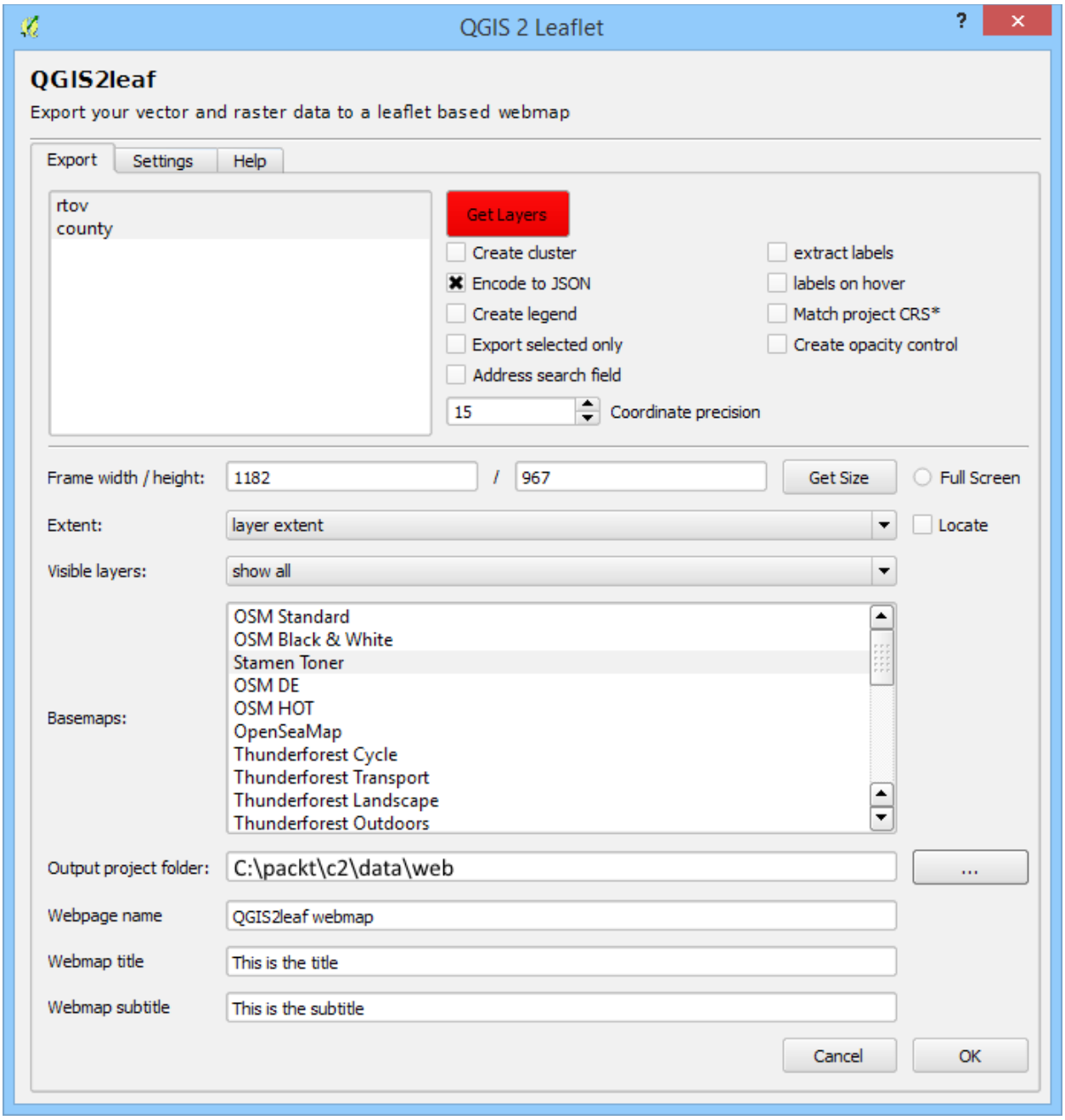
	;TOR_	VECTOR_o_1	VECTOR_o_2	LULC1	LU1_DESCR	ulel	Shape_Leng	Shape_Area	)lica	_count	_sum	_mean	rank
2	211	Cropland	211	2	agriculture	3	7226.941515808...	787864.6640755...	1	833.0000000000...	3558.000000000...	4.271308523409...	1
9	211	Cropland	211	2	agriculture	3	23212.02583147...	1773255.683153...	1	1813.000000000...	7552.000000000...	4.165471594043...	2
3	211	Cropland	211	2	agriculture	3	6131.525537965...	351375.2431025...	1	350.0000000000...	1400.000000000...	4.000000000000...	3
4	211	Cropland	211	2	agriculture	3	1416.009058078...	87395.56872778...	1	91.00000000000...	364.0000000000...	4.000000000000...	3
7	213	Idle Fields	213	2	agriculture	3	2414.690109962...	115344.3196085...	1	112.0000000000...	448.0000000000...	4.000000000000...	3
10	240	Farmsteads and ...	240	2	agriculture	3	329.2004692098...	6655.175087899...	1	8.000000000000...	32.00000000000...	4.000000000000...	3
1	211	Cropland	211	2	agriculture	3	2594.291938783...	218245.2427690...	1	225.0000000000...	870.0000000000...	3.866666666666...	4
0	211	Cropland	211	2	agriculture	3	21573.41804957...	2614982.577720...	1	2764.000000000...	10613.00000000...	3.839725036179...	5
8	211	Cropland	211	2	agriculture	3	5804.436498339...	478840.0900582...	1	490.0000000000...	1860.000000000...	3.795918367346...	6
6	211	Cropland	211	2	agriculture	3	2719.583036952...	203924.4499593...	1	211.0000000000...	797.0000000000...	3.777251184834...	7
5	211	Cropland	211	2	agriculture	3	1772.696097555...	144827.1905412...	1	149.0000000000...	403.0000000000...	2.704697986577...	8

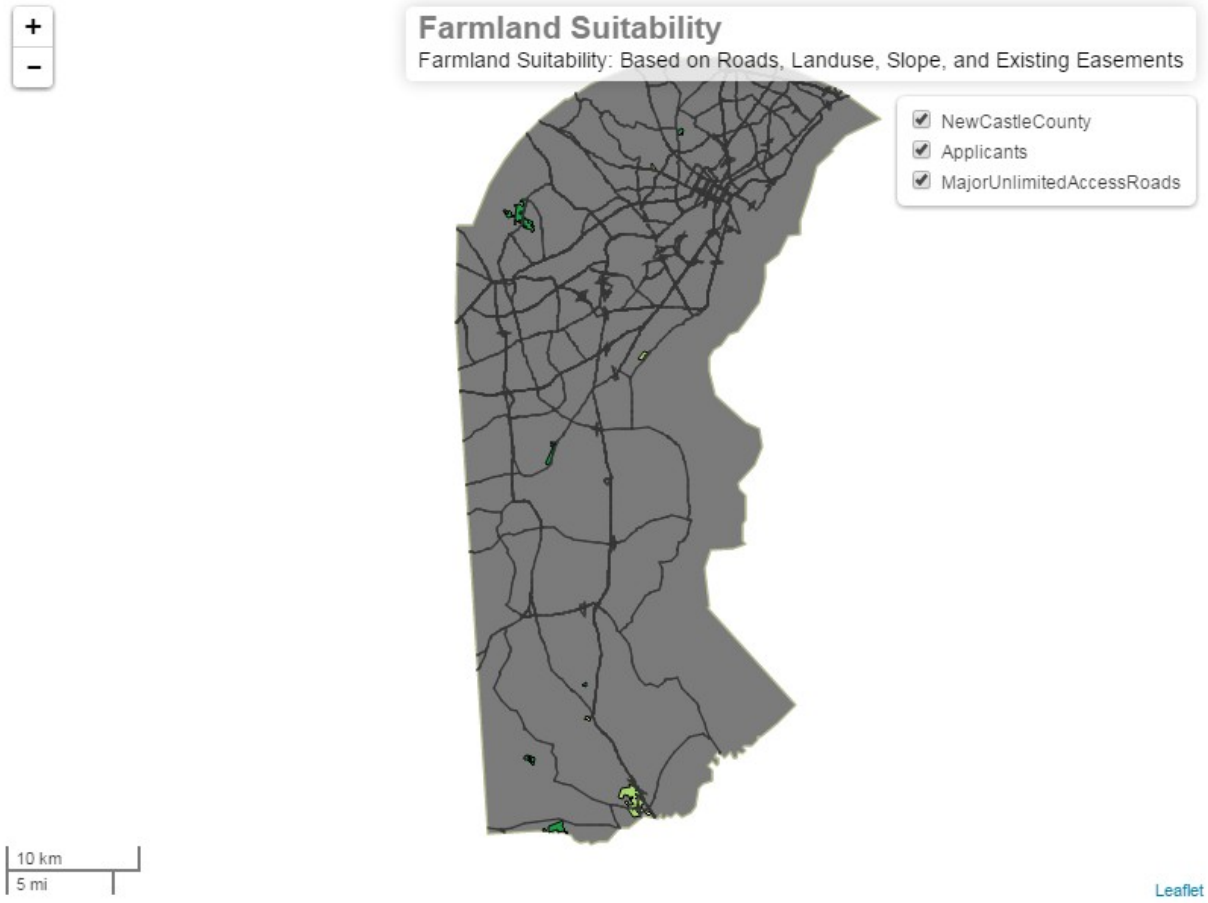
Show All Features


Layer Properties - applicants | Labels
General
Style
Labels
Fields
Rendering
Display
Actions
Joins
Diagrams
Metadata
Label this layer with
rank
Text/Buffer sample
Lorem Ipsum
Lorem Ipsum
Text
Formatting
Buffer
Background
Shadow
Placement
Rendering
Text buffer
Draw text buffer
Size
1.0000
mm
Color
Color buffer's fill
Transparency
0 %
Pen join style
Bevel
Blend mode
Normal
Style
OK
Cancel
Apply
Help

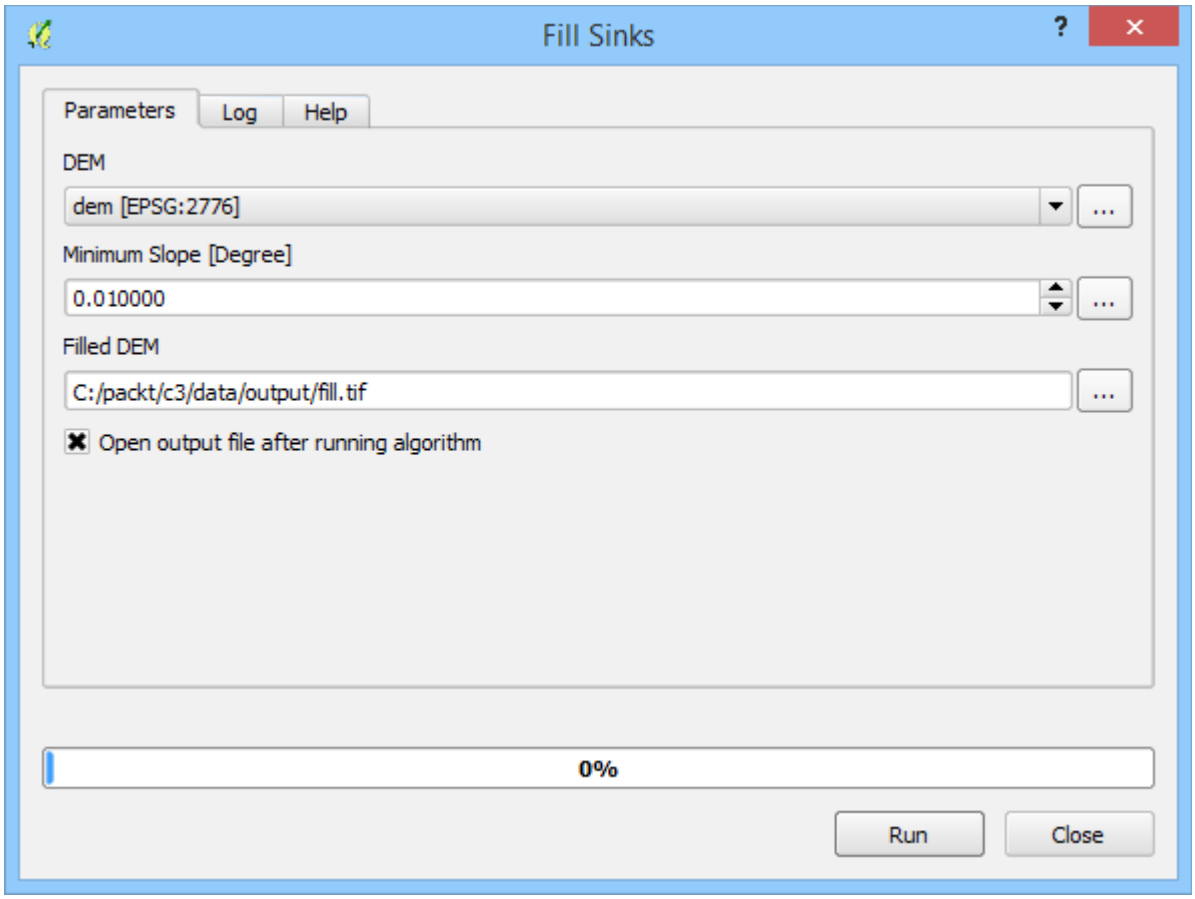

Layer Properties - applicants | Style
General
Style
Labels
Fields
Rendering
Display
Actions
Joins
Diagrams
Metadata
Graduated
Column
_mean
Symbol
Change...
Classes
5
Color ramp
[source]
Invert
Mode
Equal Interval
Legend Format
%1 - %2
Precision
2
Trim
Symbol
Values
Legend
2.7047 - 3.0180
2.70 - 3.02
3.0180 - 3.3313
3.02 - 3.33
3.3313 - 3.6447
3.33 - 3.64
3.6447 - 3.9580
3.64 - 3.96
3.9580 - 4.2713
3.96 - 4.27
Classify
Add class
Delete
Delete all
Link class boundaries
Advanced
Layer rendering
Layer transparency
0
Layer blending mode
Normal
Feature blending mode
Normal
Style
OK
Cancel
Apply
Help

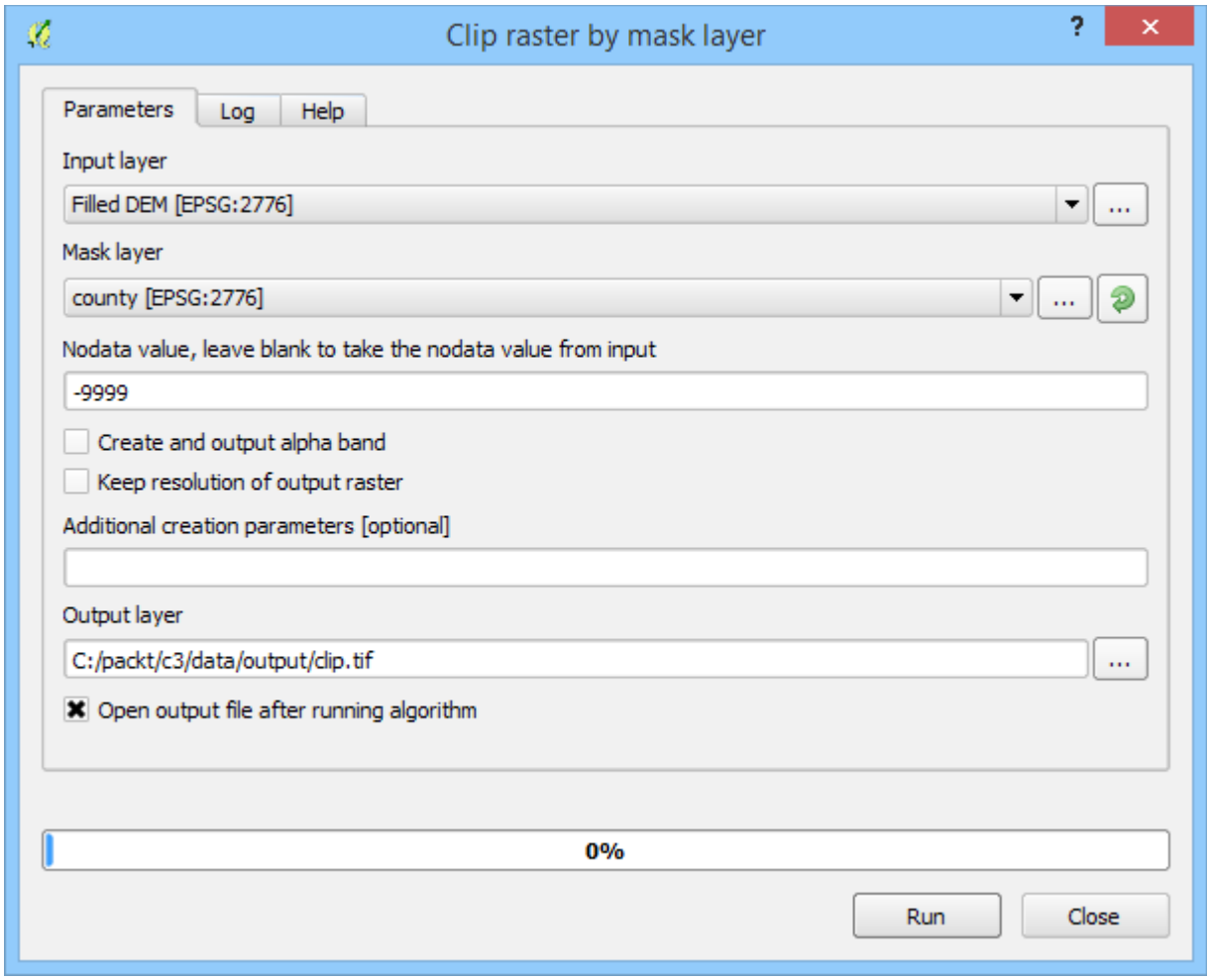

7
8
2
4
6
3
3
3
5
1

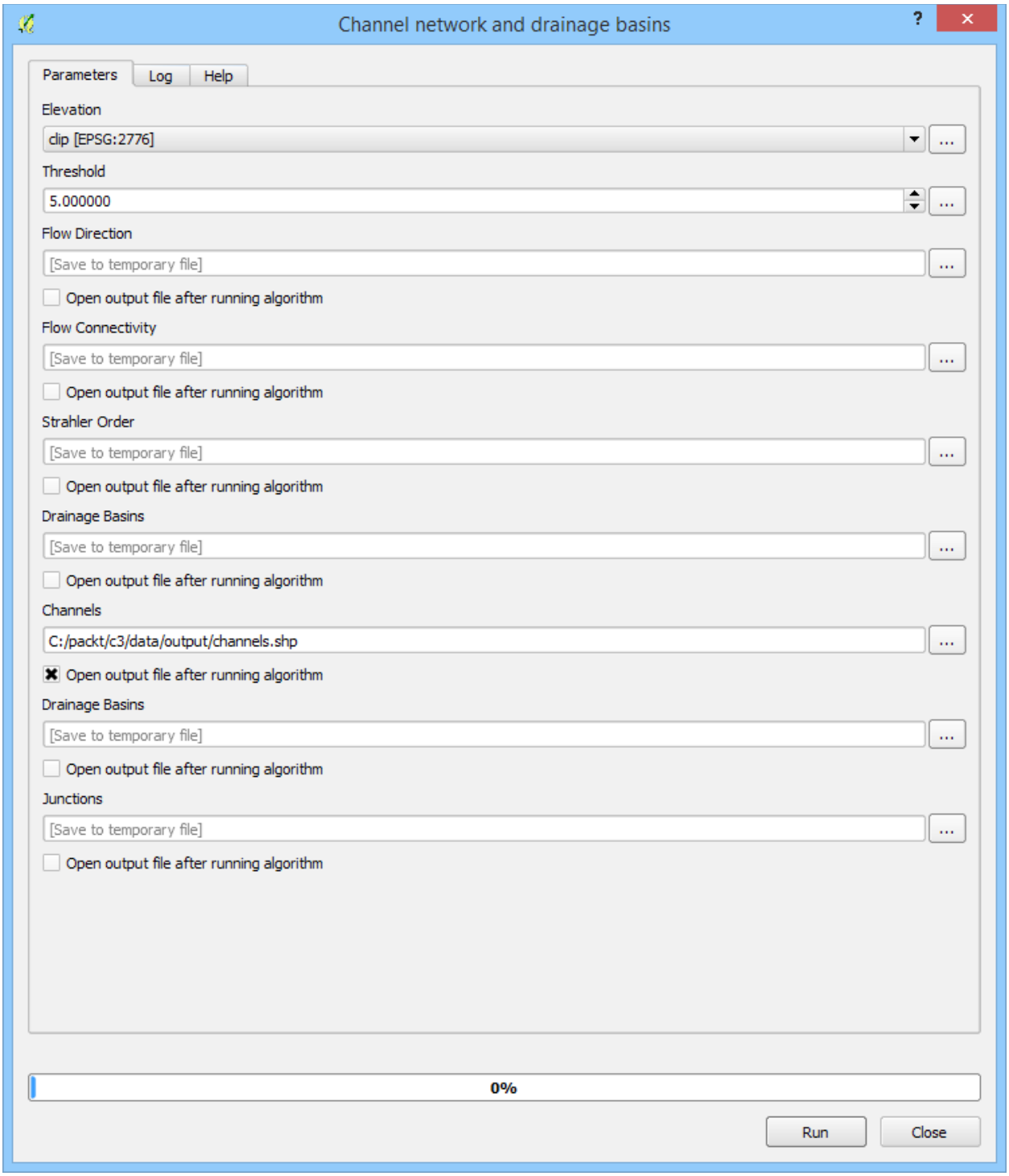

QGIS 2 Leaflet
QGIS2leaf
Export your vector and raster data to a leaflet based webmap
Export
Settings
Help
rtov
county
Get Layers
Create cluster
Encode to JSON
Create legend
Export selected only
Address search field
15
Coordinate precision
extract labels
labels on hover
Match project CRS*
Create opacity control
Frame width / height:
1182
/
967
Get Size
Full Screen
Extent:
layer extent
Locate
Visible layers:
show all
Basemaps:
OSM Standard
OSM Black & White
Stamen Toner
OSM DE
OSM HOT
OpenSeaMap
Thunderforest Cycle
Thunderforest Transport
Thunderforest Landscape
Thunderforest Outdoors
Output project folder:
C:\packt\c2\data\web
...
Webpage name
QGIS2leaf webmap
Webmap title
This is the title
Webmap subtitle
This is the subtitle
Cancel
OK

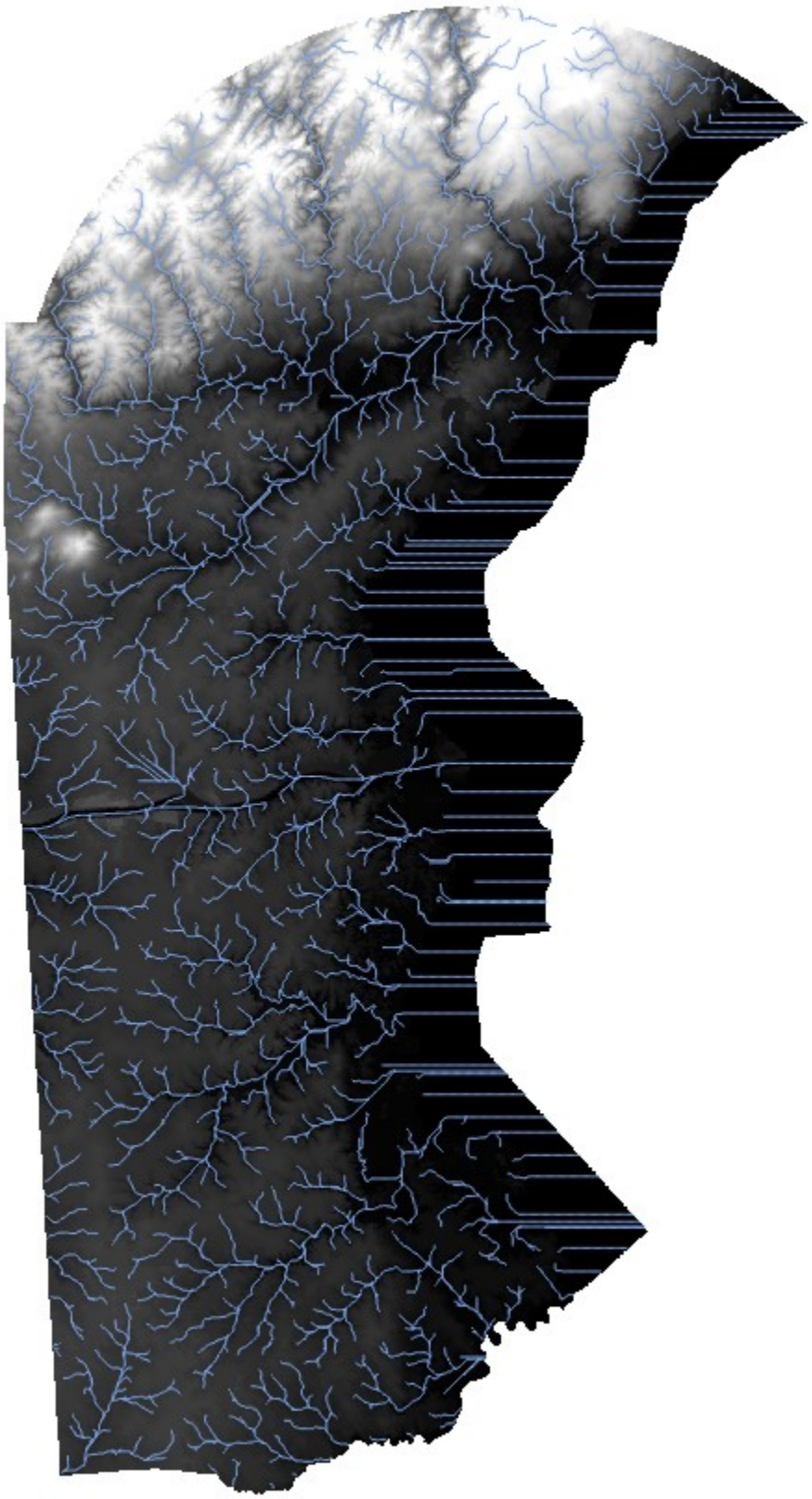


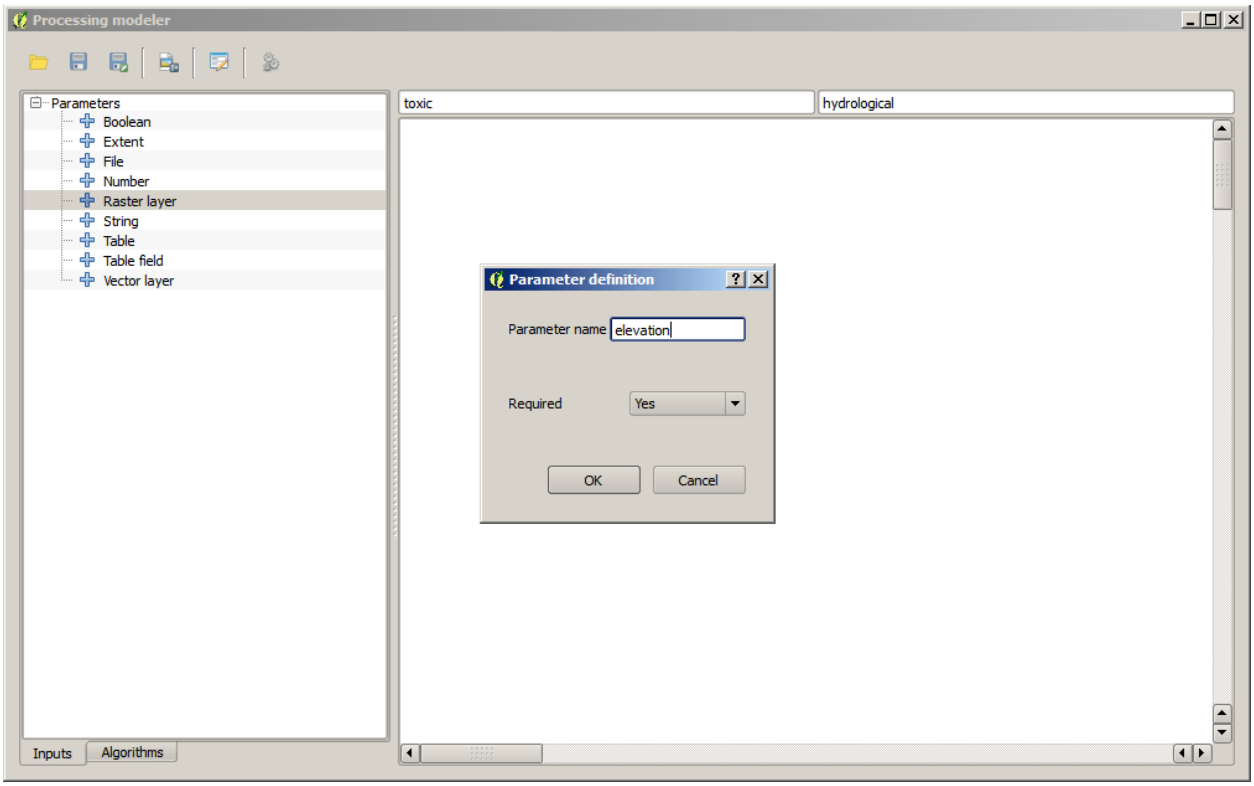
Chapter 3: Discovering Physical Relationships

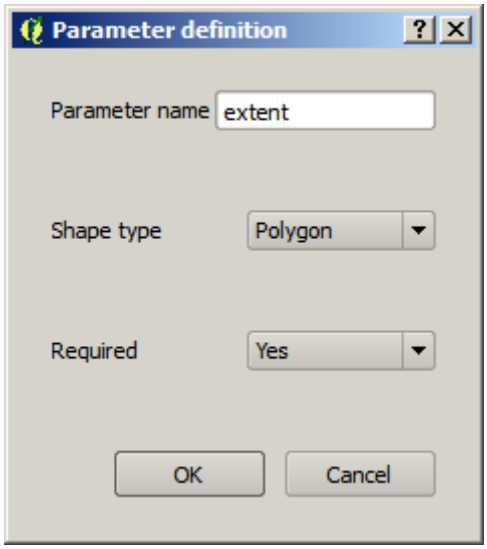

Fill Sinks
Parameters
Log
Help
DEM
dem [EPSG:2776]
Minimum Slope [Degree]
0.010000
Filled DEM
C:/packt/c3/data/output/fill.tif
Open output file after running algorithm
0%
Run
Close

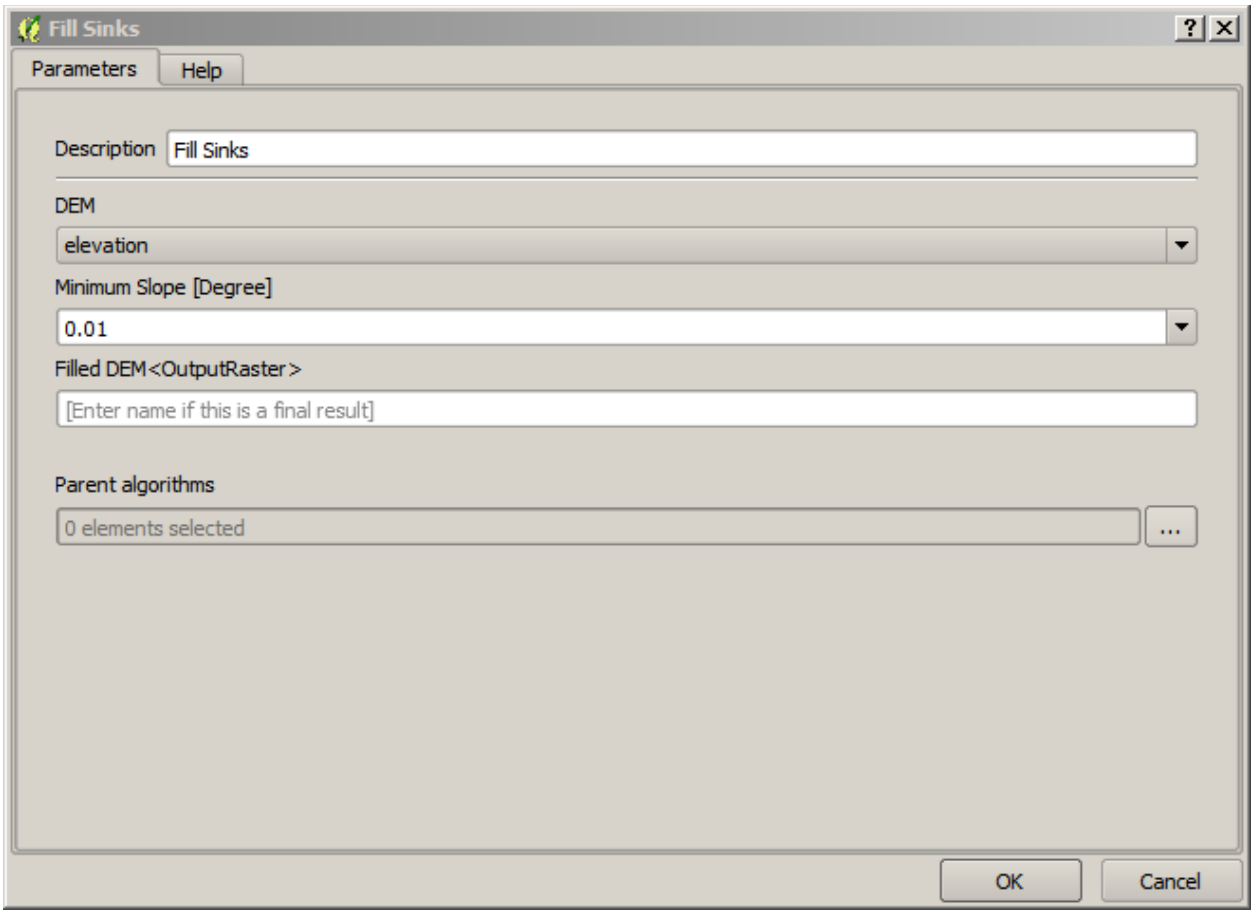

Clip raster by mask layer
Parameters
Log
Help
Input layer
Filled DEM [EPSG:2776]
Mask layer
county [EPSG:2776]
Nodata value, leave blank to take the nodata value from input
-9999
Create and output alpha band
Keep resolution of output raster
Additional creation parameters [optional]
Output layer
C:/packt/c3/data/output/clip.tif
Open output file after running algorithm
0%
Run
Close

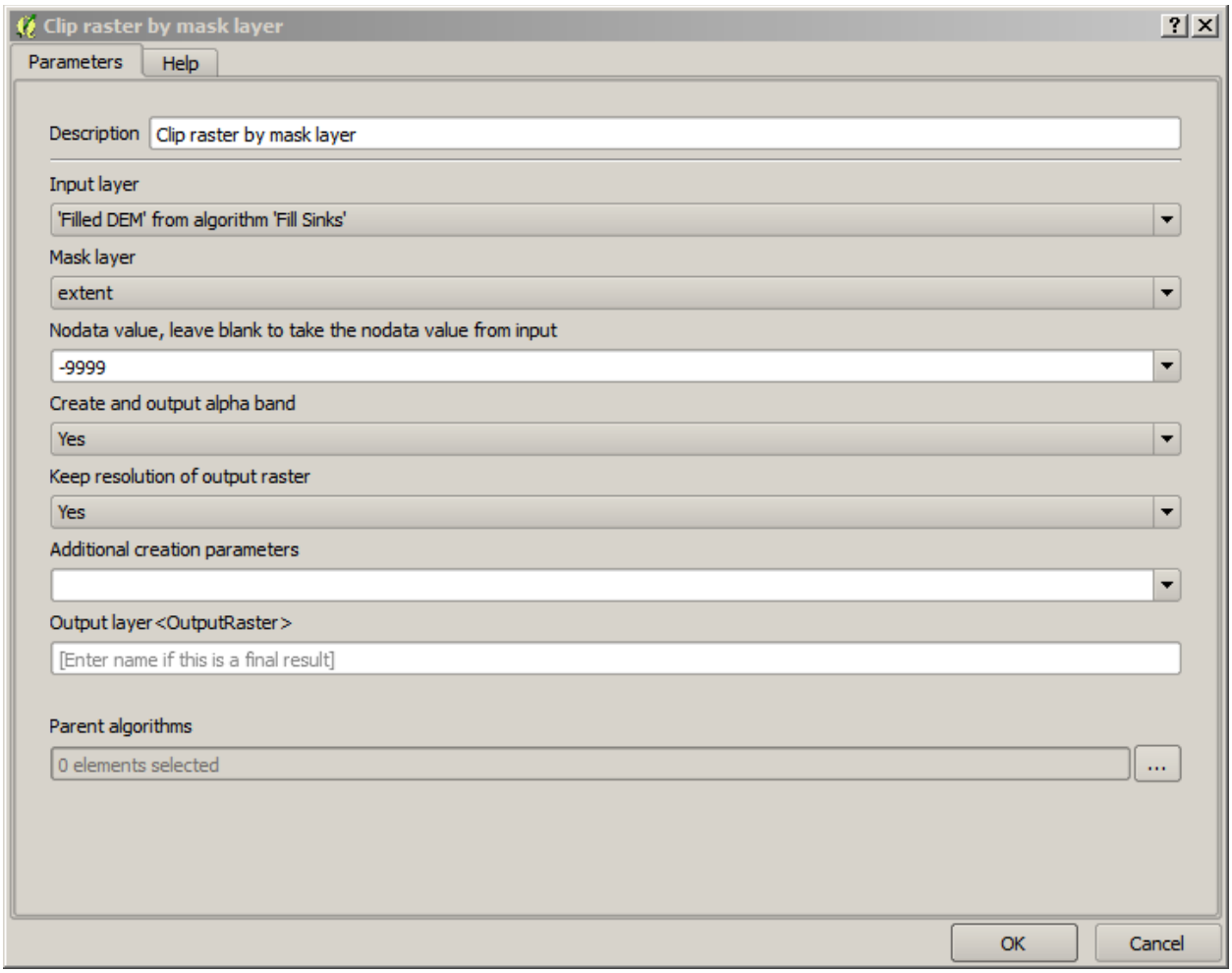

Channel network and drainage basins
Parameters
Log
Help
Elevation
clip [EPSG:2776]
Threshold
5.000000
Flow Direction
[Save to temporary file]
Open output file after running algorithm
Flow Connectivity
[Save to temporary file]
Open output file after running algorithm
Strahler Order
[Save to temporary file]
Open output file after running algorithm
Drainage Basins
[Save to temporary file]
Open output file after running algorithm
Channels
C:/packt/c3/data/output/channels.shp
Open output file after running algorithm
Drainage Basins
[Save to temporary file]
Open output file after running algorithm
Junctions
[Save to temporary file]
Open output file after running algorithm
0%
Run
Close

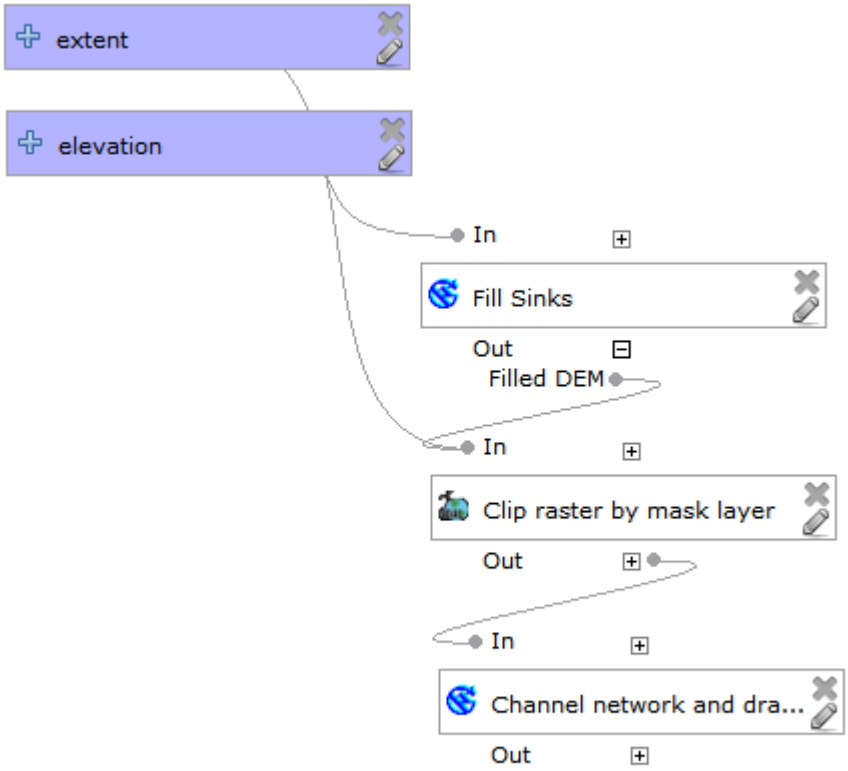


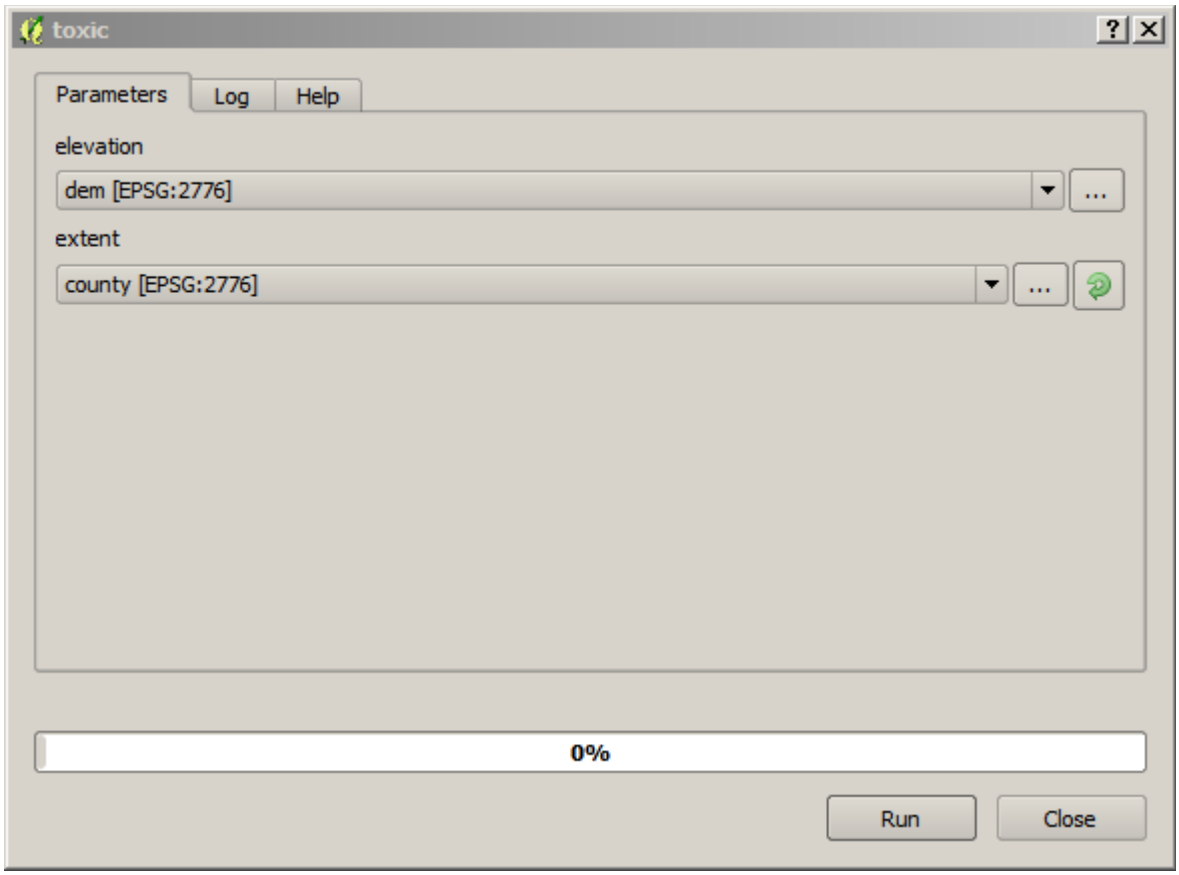

Processing modeler
Parameters
Boolean
Extent
File
Number
Raster layer
String
Table
Table field
Vector layer
Inputs
Algorithms
toxic
hydrological
Parameter definition
Parameter name
elevation
Required
Yes
OK
Cancel

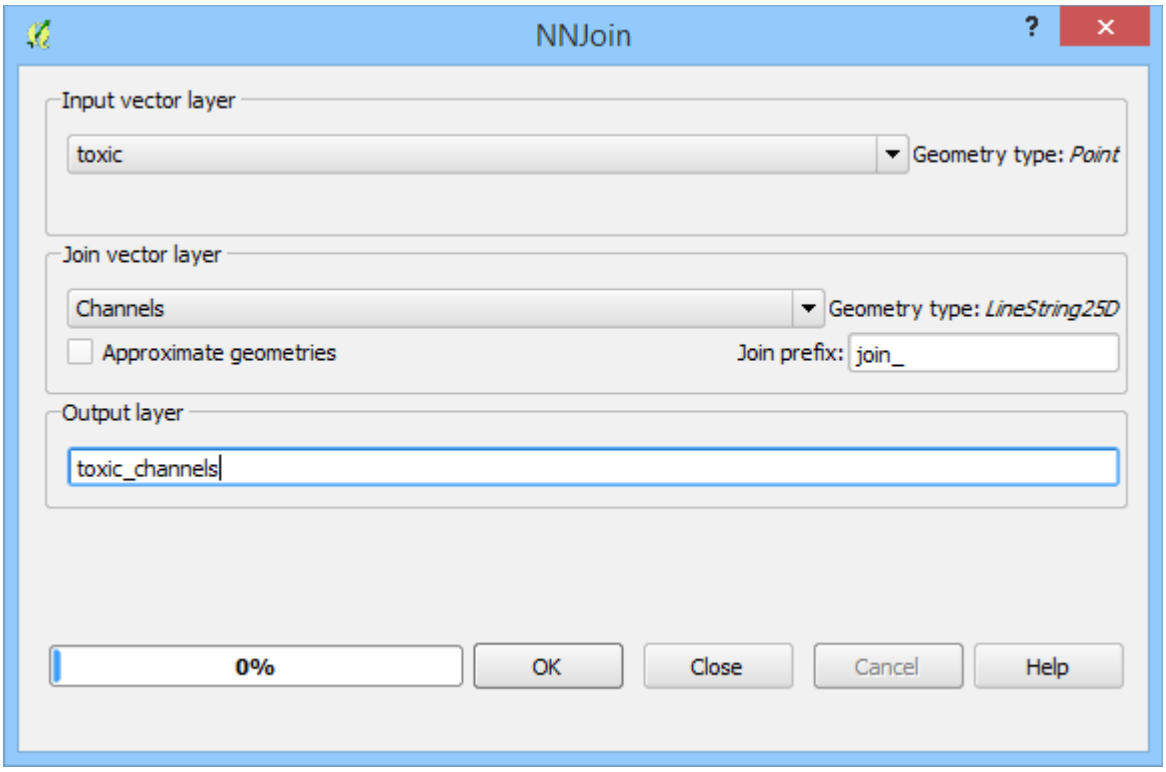

Parameter definition
Parameter name
extent
Shape type
Polygon
Required
Yes
OK
Cancel

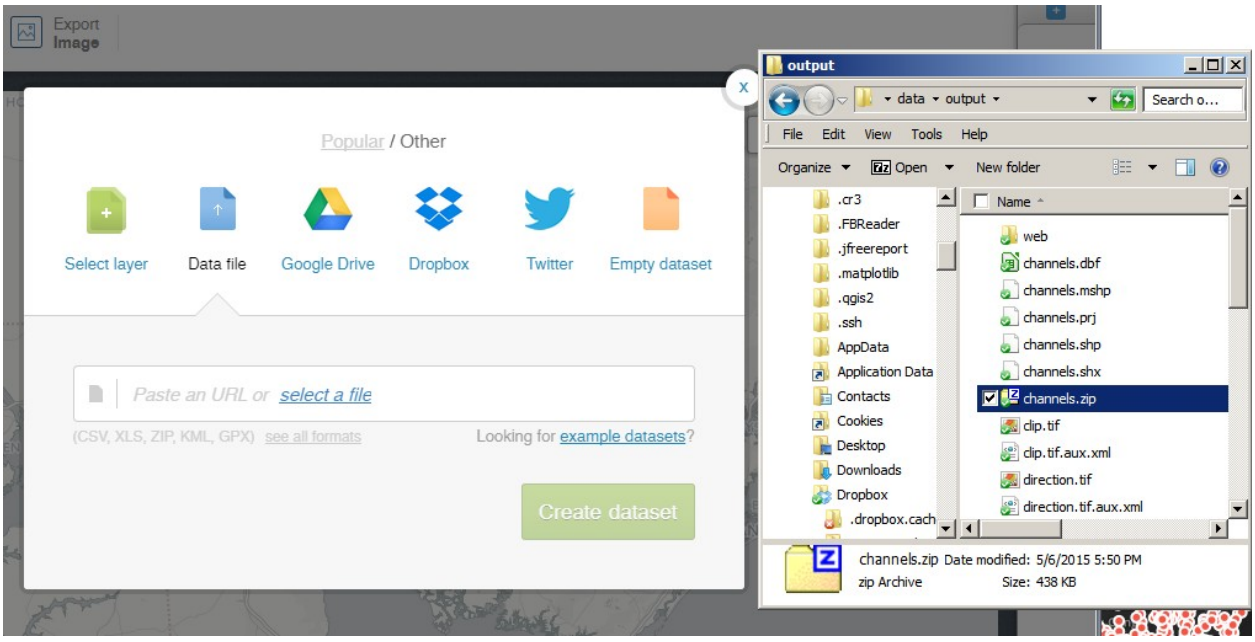

Fill Sinks
Parameters
Help
Description
Fill Sinks
DEM
elevation
Minimum Slope [Degree]
0.01
Filled DEM<OutputRaster>
[Enter name if this is a final result]
Parent algorithms
0 elements selected
...
OK
Cancel

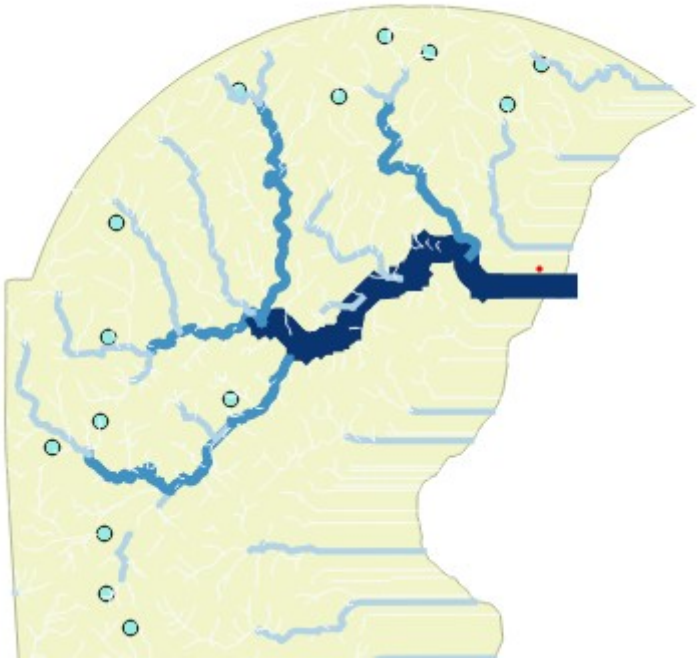

Clip raster by mask layer
Parameters
Help
Description
Clip raster by mask layer
Input layer
'Filled DEM' from algorithm 'Fill Sinks'
Mask layer
extent
Nodata value, leave blank to take the nodata value from input
-9999
Create and output alpha band
Yes
Keep resolution of output raster
Yes
Additional creation parameters
Output layer <OutputRaster>
[Enter name if this is a final result]
Parent algorithms
0 elements selected
...
OK
Cancel

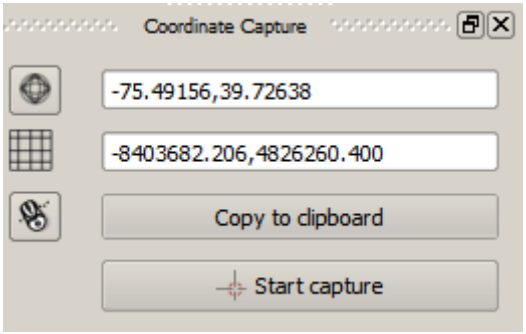

extent
elevation
In
Fill Sinks
Out
Filled DEM
In
Clip raster by mask layer
Out
In
Channel network and dra...
Out

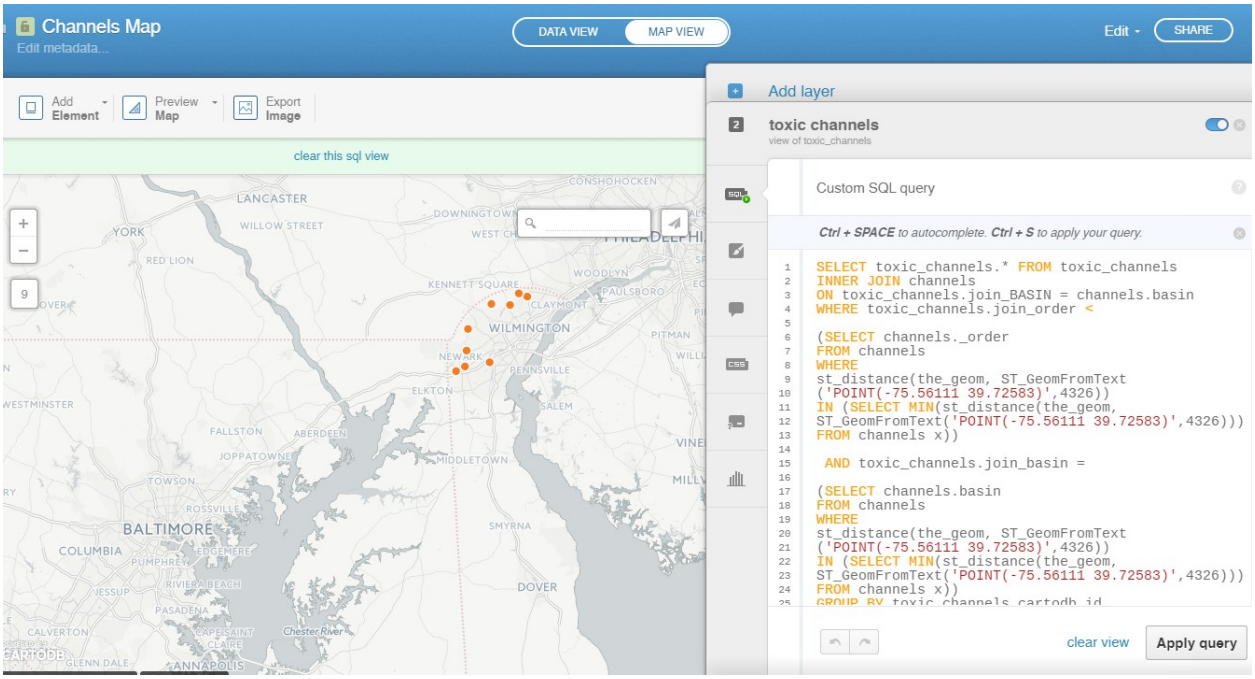

toxic
Parameters
Log
Help
elevation
dem [EPSG:2776]
...
extent
county [EPSG:2776]
...
0%
Run
Close

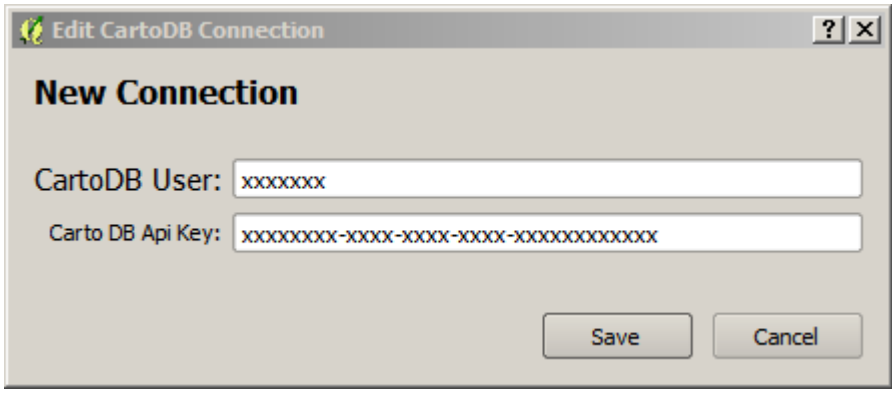

NNJoin
Input vector layer
toxic
Geometry type: Point
Join vector layer
Channels
Geometry type: LineString25D
Approximate geometries
Join prefix: join_
Output layer
toxic_channels
0%
OK
Close
Cancel
Help

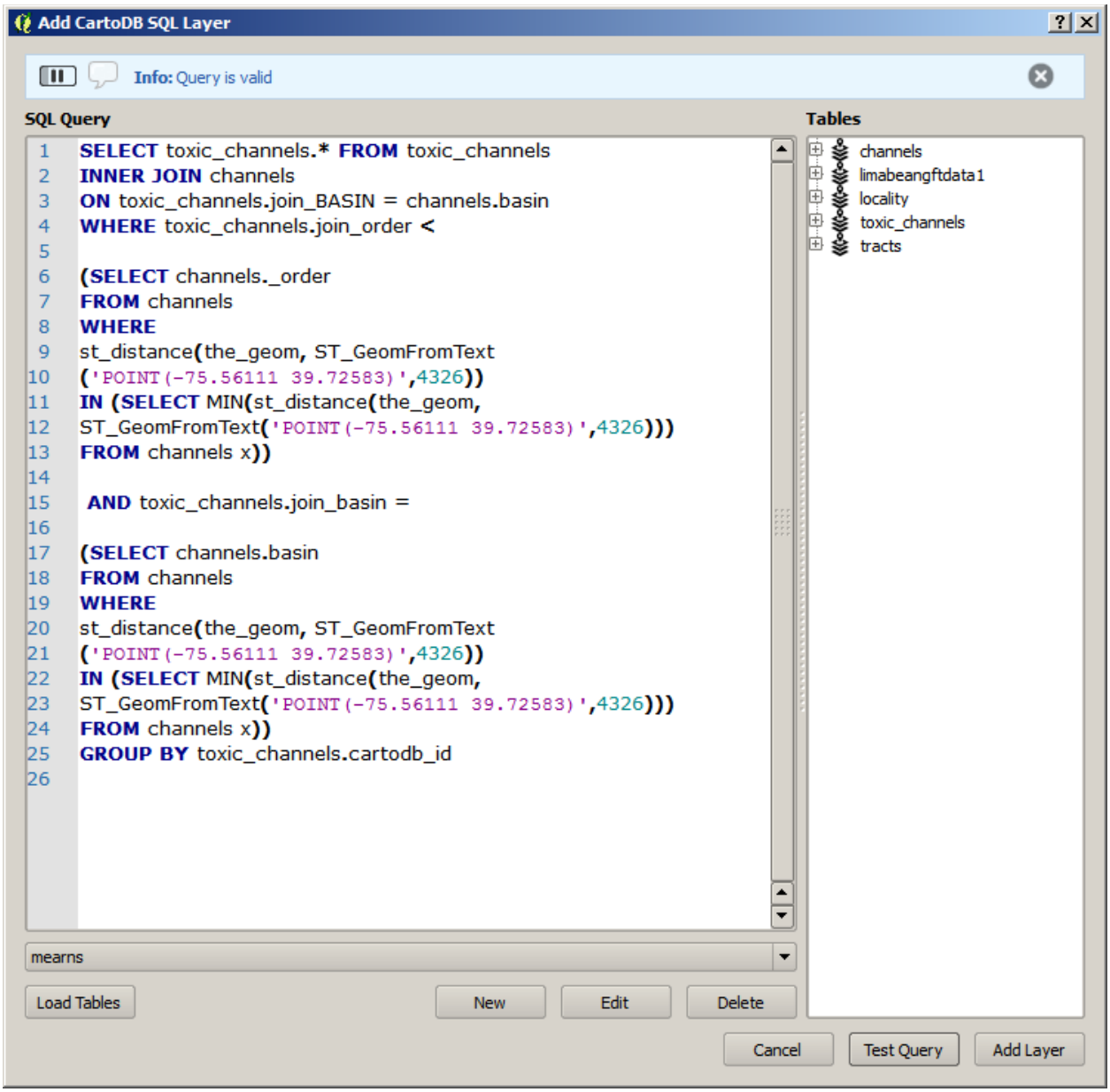

Export Image
Popular / Other
Select layer
Data file
Google Drive
Dropbox
Twitter
Empty dataset
Paste an URL or select a file
(CSV, XLS, ZIP, KML, GPX) see all formats
Looking for example datasets?
Create dataset
output
data output
Search o...
File Edit View Tools Help
Organize Open New folder
.cr3
.FBReader
.jfreereport
.matplotlib
.qgis2
.ssh
AppData
Application Data
Contacts
Cookies
Desktop
Downloads
Dropbox
.dropbox.cach
Name
web
channels.dbf
channels.mshp
channels.prj
channels.shp
channels.shx
channels.zip
clip.tif
clip.tif.aux.xml
direction.tif
direction.tif.aux.xml
channels.zip Date modified: 5/6/2015 5:50 PM
zip Archive
Size: 438 KB

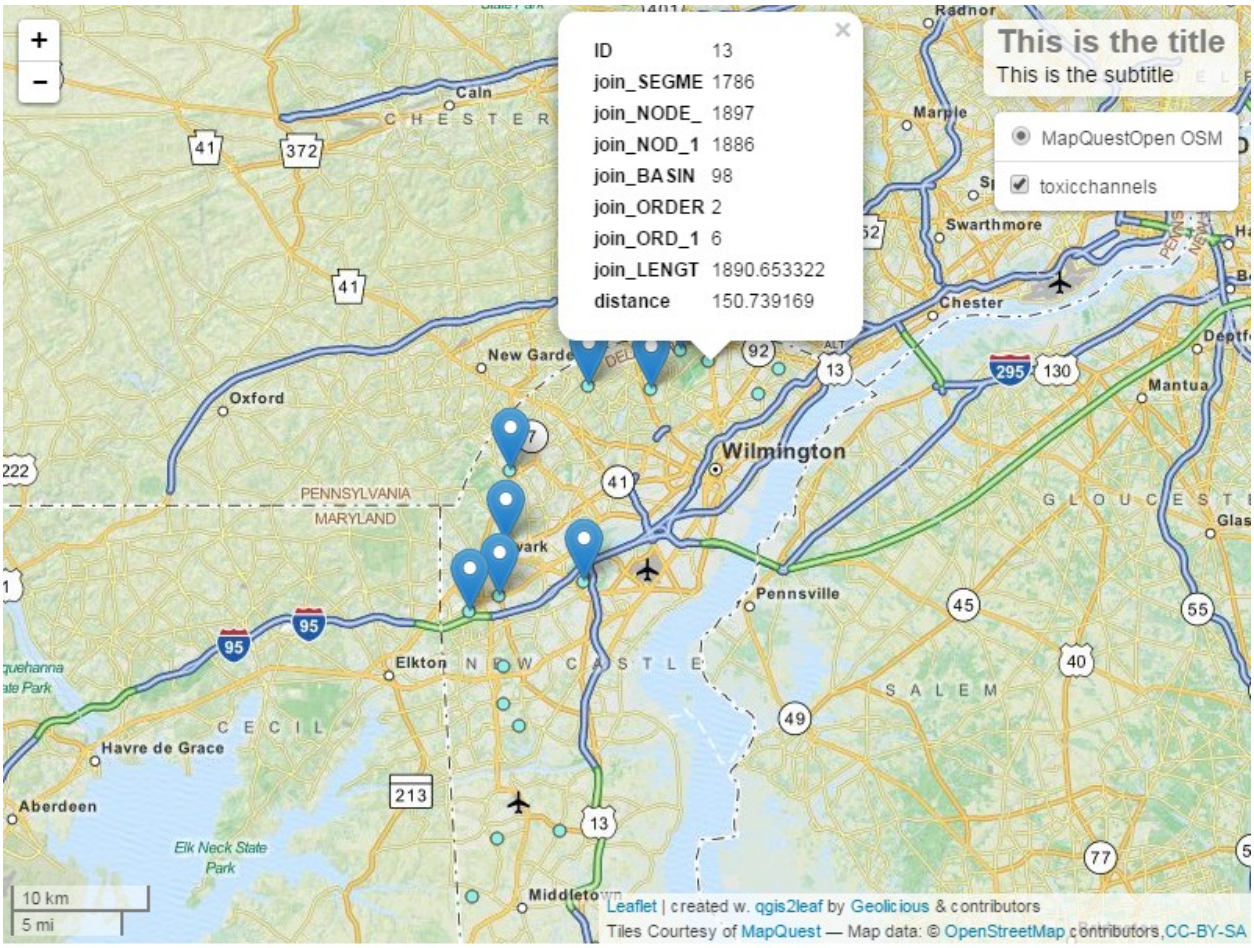



Coordinate Capture
-75.49156,39.72638
-8403682.206,4826260.400
Copy to clipboard
Start capture

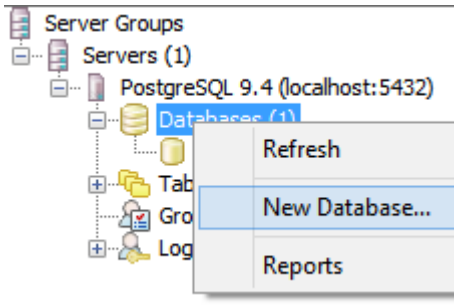

Channels Map
Edit metadata...
DATA VIEW
MAP VIEW
Edit
SHARE
Add Element
Preview Map
Export Image
clear this sql view
Add layer
toxic channels
view of toxic_channels
Custom SQL query
Ctrl + SPACE to autocomplete. Ctrl + S to apply your query.
SELECT toxic_channels.* FROM toxic_channels
INNER JOIN channels
ON toxic_channels.join_BASIN = channels.basin
WHERE toxic_channels.join_order <
(SELECT channels._order
FROM channels
WHERE
st_distance(the_geom, ST_GeomFromText
('POINT(-75.56111 39.72583)',4326))
IN (SELECT MIN(st_distance(the_geom,
ST_GeomFromText('POINT(-75.56111 39.72583)',4326)))
FROM channels x))
AND toxic_channels.join_basin =
(SELECT channels.basin
FROM channels
WHERE
st_distance(the_geom, ST_GeomFromText
('POINT(-75.56111 39.72583)',4326))
IN (SELECT MIN(st_distance(the_geom,
ST_GeomFromText('POINT(-75.56111 39.72583)',4326)))
FROM channels x))
clear view
Apply query
LANCASTER
YORK
WILLOW STREET
RED LION
WILMINGTON
NEWARK
ELKTON
BALTIMORE
COLUMBIA
TOWSON
DOVER
SMYRNA
ANNAPOLIS

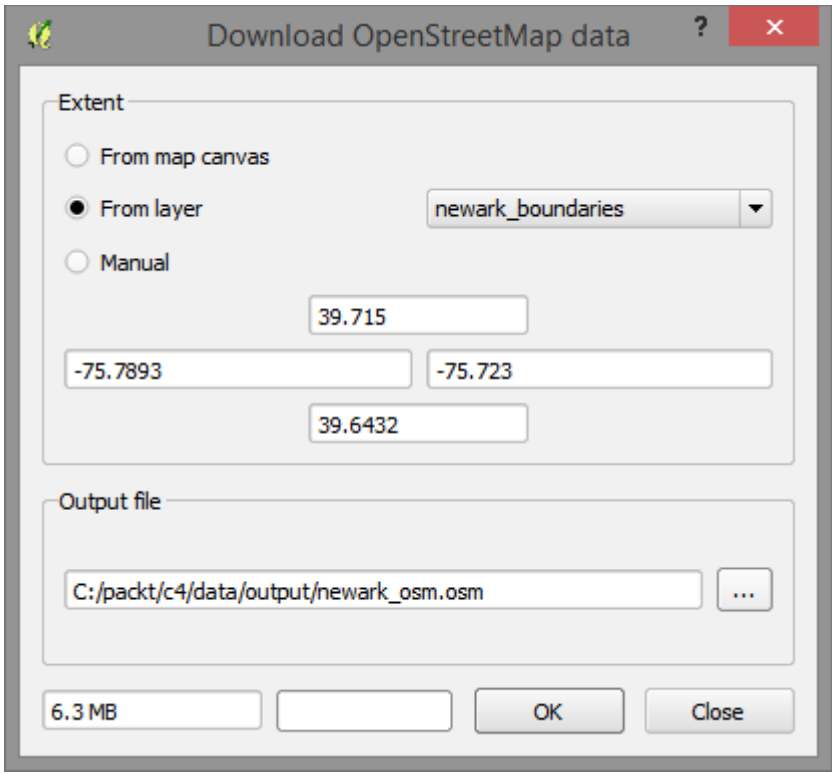

Edit CartoDB Connection
New Connection
CartoDB User:
xxxxxxx
Carto DB Api Key:
xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx
Save
Cancel

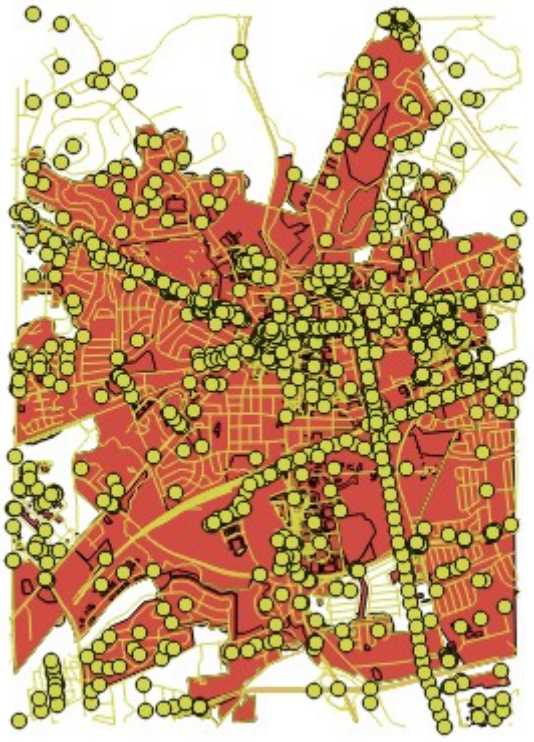

Add CartoDB SQL Layer
Info: Query is valid
SQL Query
Tables
1 SELECT toxic_channels.* FROM toxic_channels
2 INNER JOIN channels
3 ON toxic_channels.join_BASIN = channels.basin
4 WHERE toxic_channels.join_order <
5
6 (SELECT channels._order
7 FROM channels
8 WHERE
9 st_distance(the_geom, ST_GeomFromText
10 ('POINT(-75.56111 39.72583)',4326))
11 IN (SELECT MIN(st_distance(the_geom,
12 ST_GeomFromText('POINT(-75.56111 39.72583)',4326)))
13 FROM channels x))
14
15 AND toxic_channels.join_basin =
16
17 (SELECT channels.basin
18 FROM channels
19 WHERE
20 st_distance(the_geom, ST_GeomFromText
21 ('POINT(-75.56111 39.72583)',4326))
22 IN (SELECT MIN(st_distance(the_geom,
23 ST_GeomFromText('POINT(-75.56111 39.72583)',4326)))
24 FROM channels x))
25 GROUP BY toxic_channels.cartodb_id
26
channels
limabeangftdata1
locality
toxic_channels
tracts
mearns
Load Tables
New
Edit
Delete
Cancel
Test Query
Add Layer

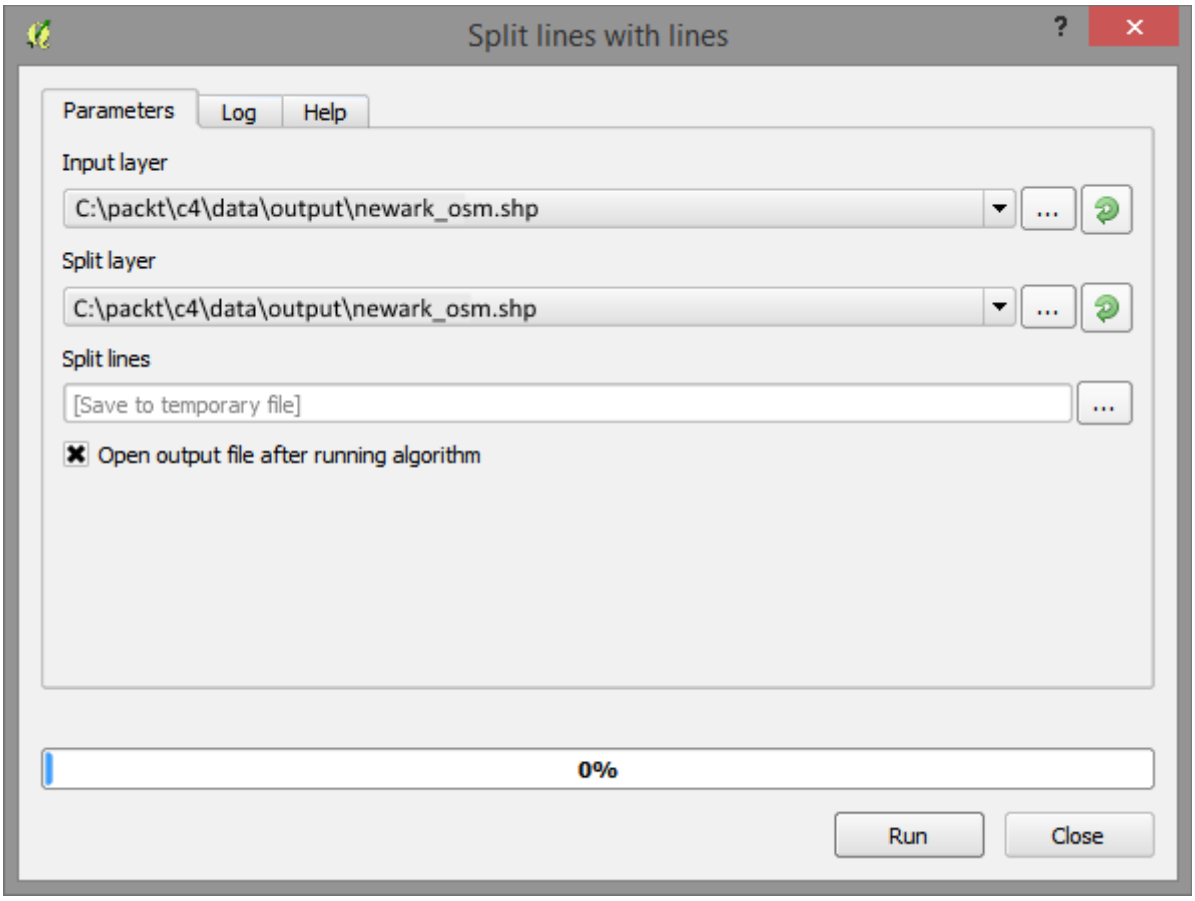


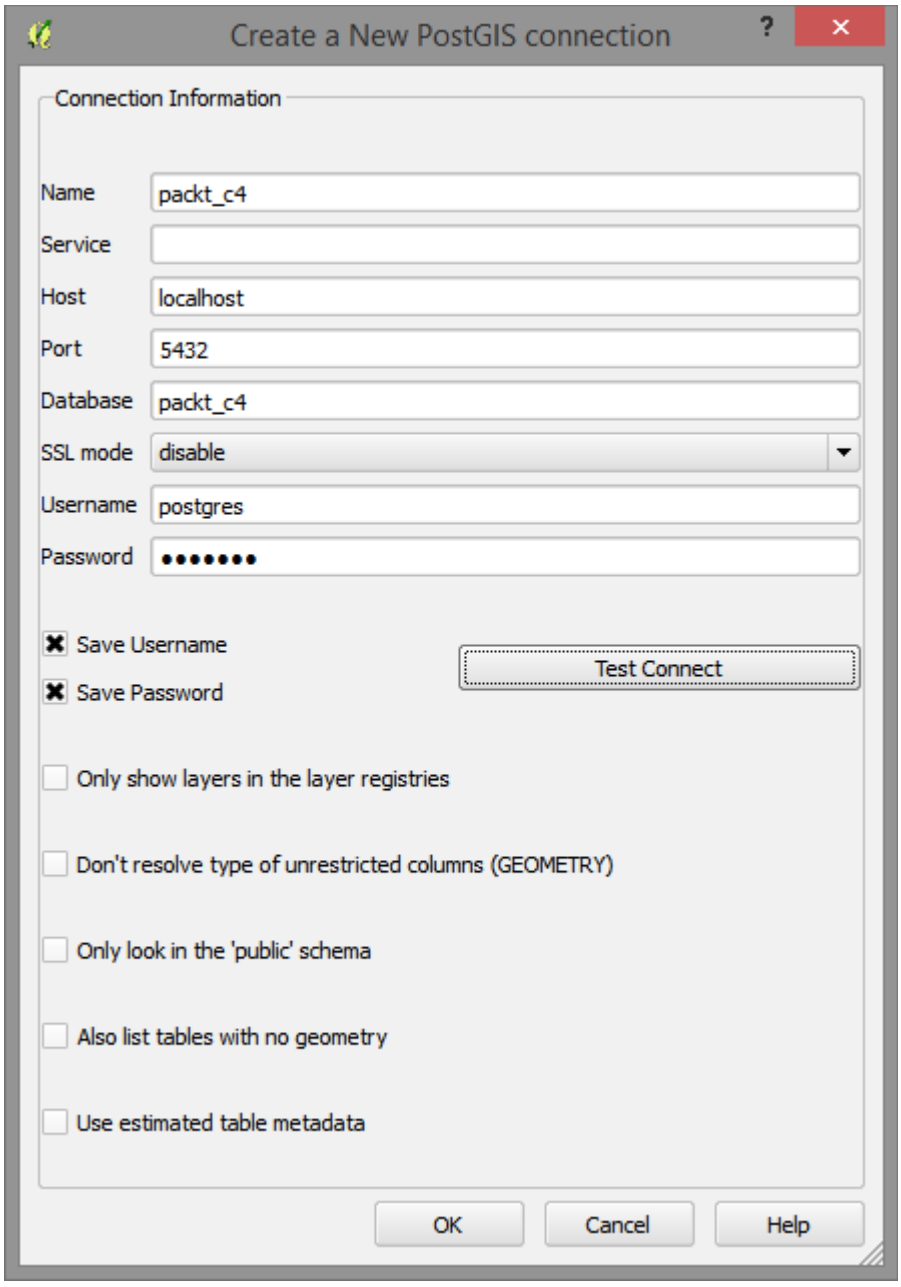
Chapter 4: Finding the Best Way to Get There

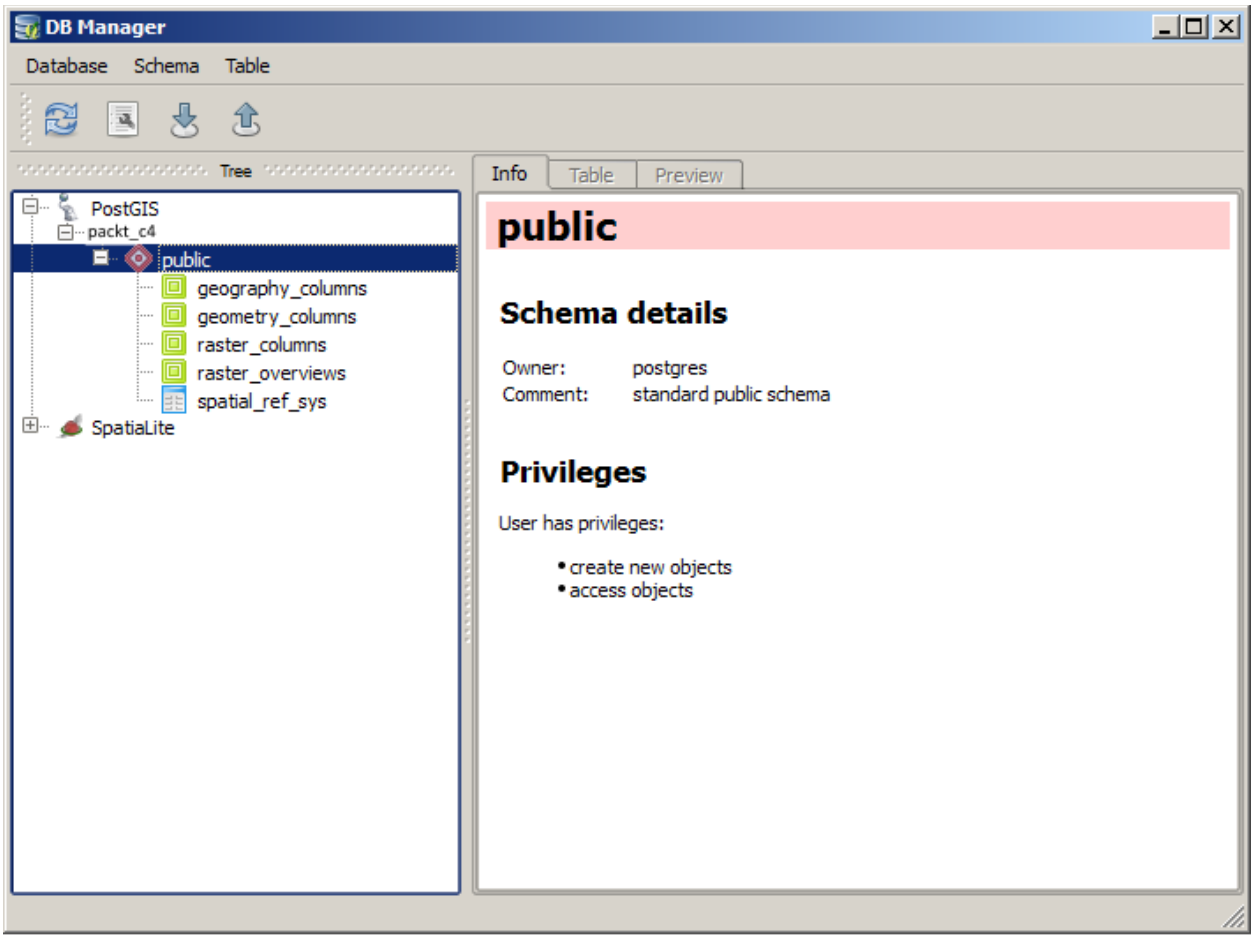


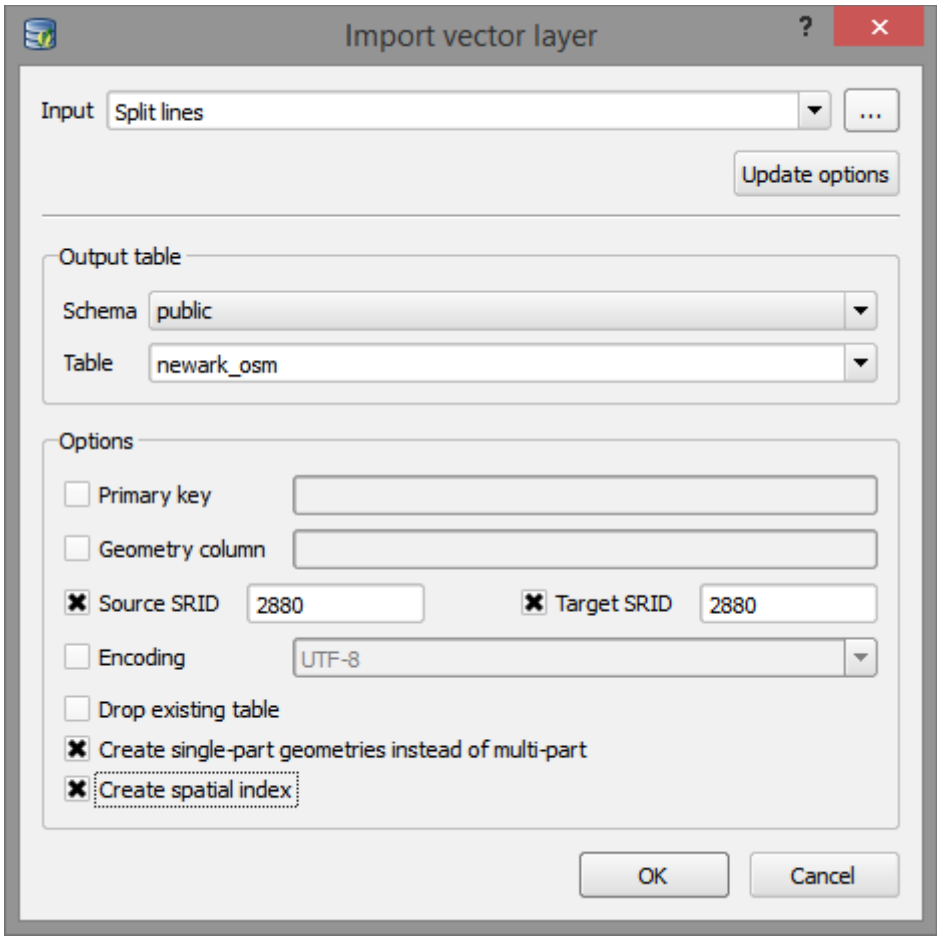

Download OpenStreetMap data
Extent
From map canvas
From layer
newark_boundaries
Manual
39.715
-75.7893
-75.723
39.6432
Output file
C:/packt/c4/data/output/newark_osm.osm
...
6.3 MB
OK
Close

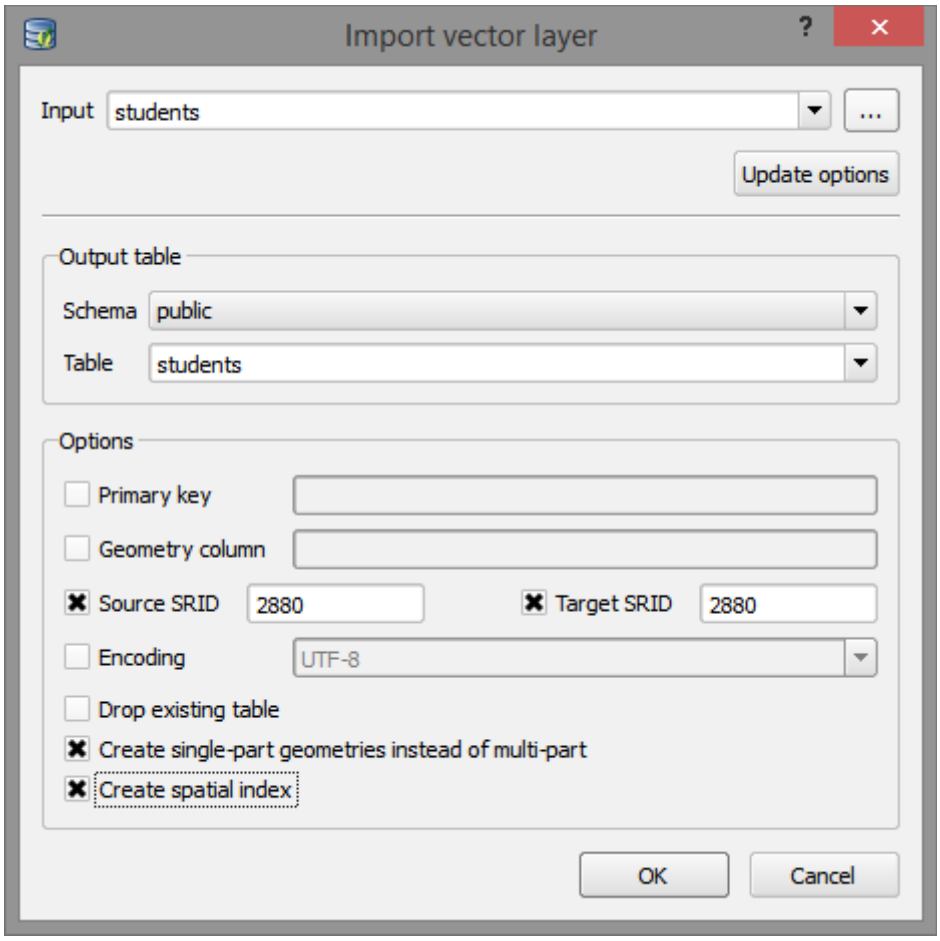


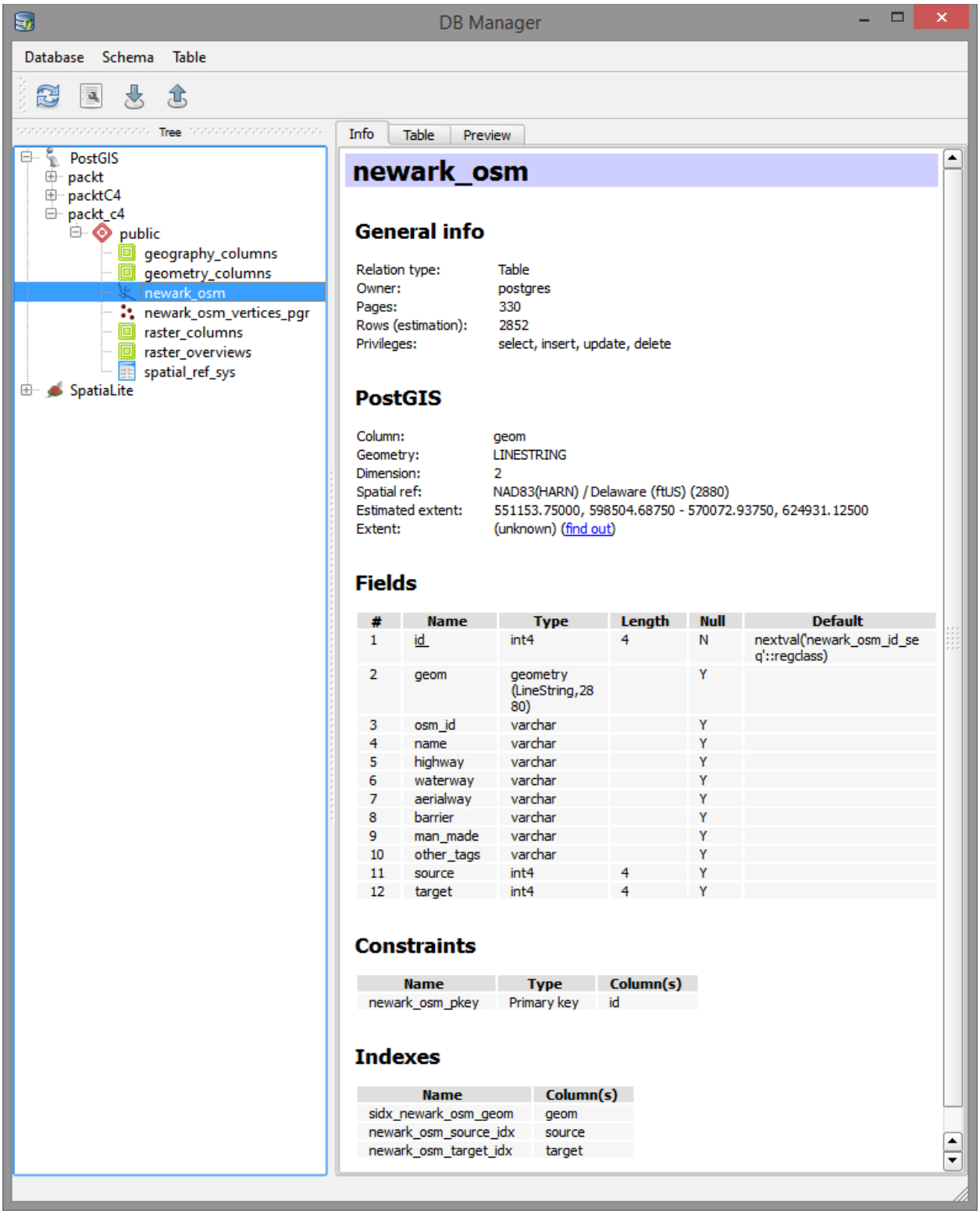

Split lines with lines
Parameters
Log
Help
Input layer
C:\packt\c4\data\output\newark_osm.shp
Split layer
C:\packt\c4\data\output\newark_osm.shp
Split lines
[Save to temporary file]
Open output file after running algorithm
0%
Run
Close

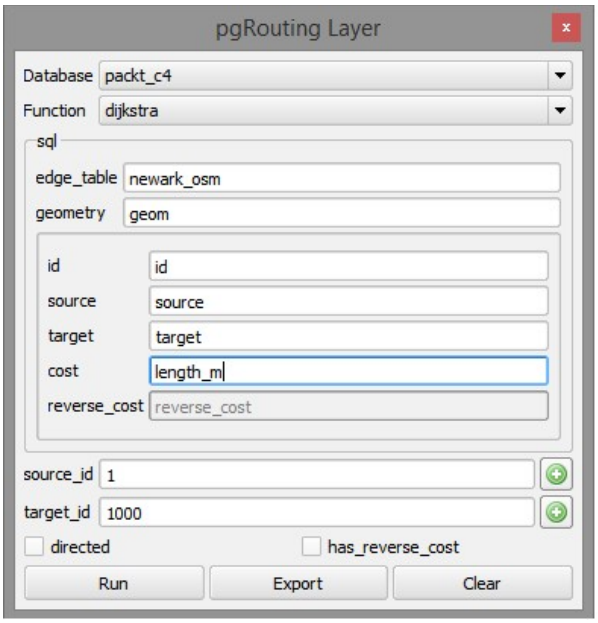

Create a New PostGIS connection
Connection Information
Name
packt_c4
Service
Host
localhost
Port
5432
Database
packt_c4
SSL mode
disable
Username
postgres
Password
Save Username
Save Password
Test Connect
Only show layers in the layer registries
Don't resolve type of unrestricted columns (GEOMETRY)
Only look in the 'public' schema
Also list tables with no geometry
Use estimated table metadata
OK
Cancel
Help

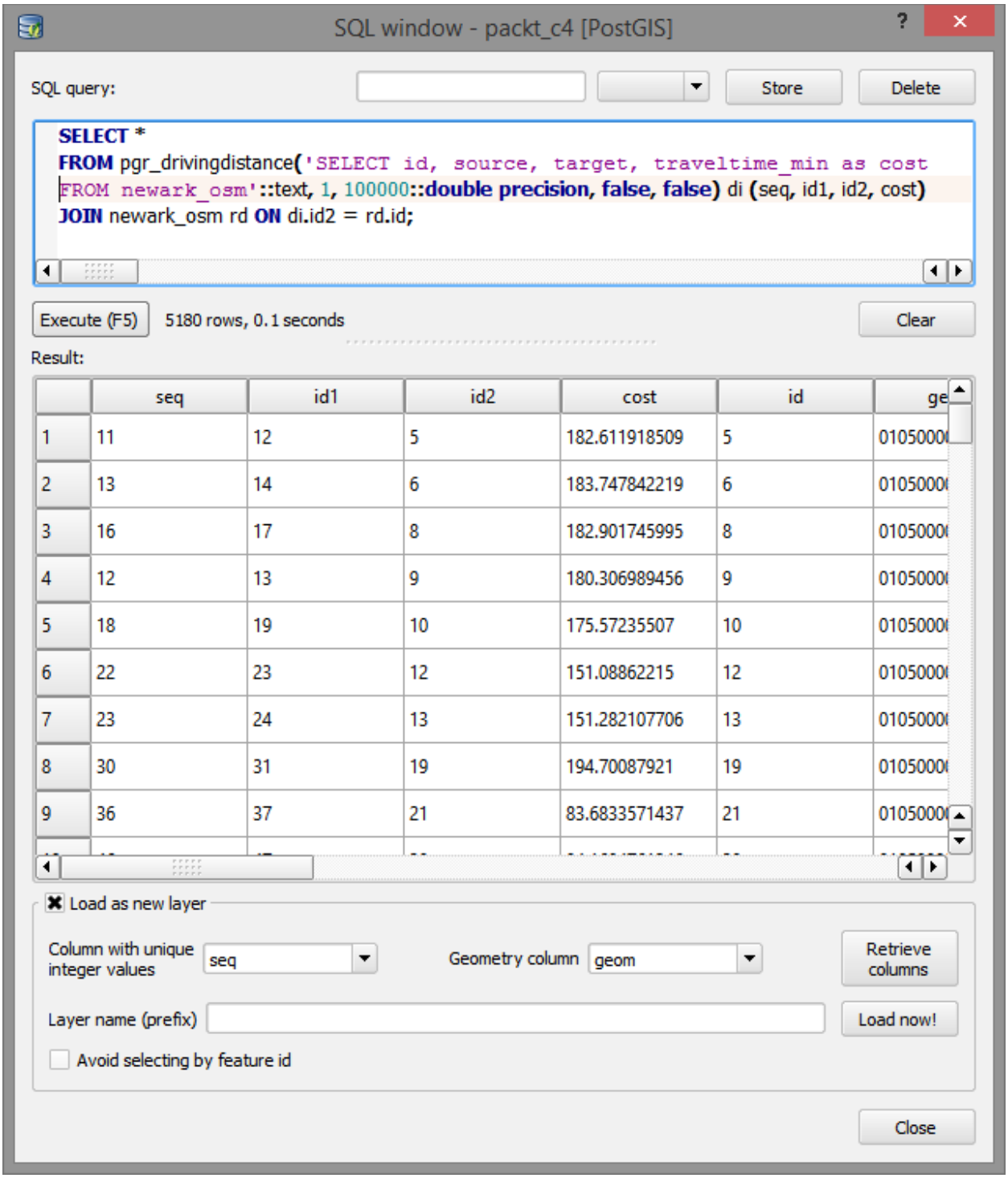

DB Manager
Database
Schema
Table
Tree
PostGIS
packt_c4
public
geography_columns
geometry_columns
raster_columns
raster_overviews
spatial_ref_sys
SpatiaLite
Info
Table
Preview
public
Schema details
Owner: postgres
Comment: standard public schema
Privileges
User has privileges:
create new objects
access objects

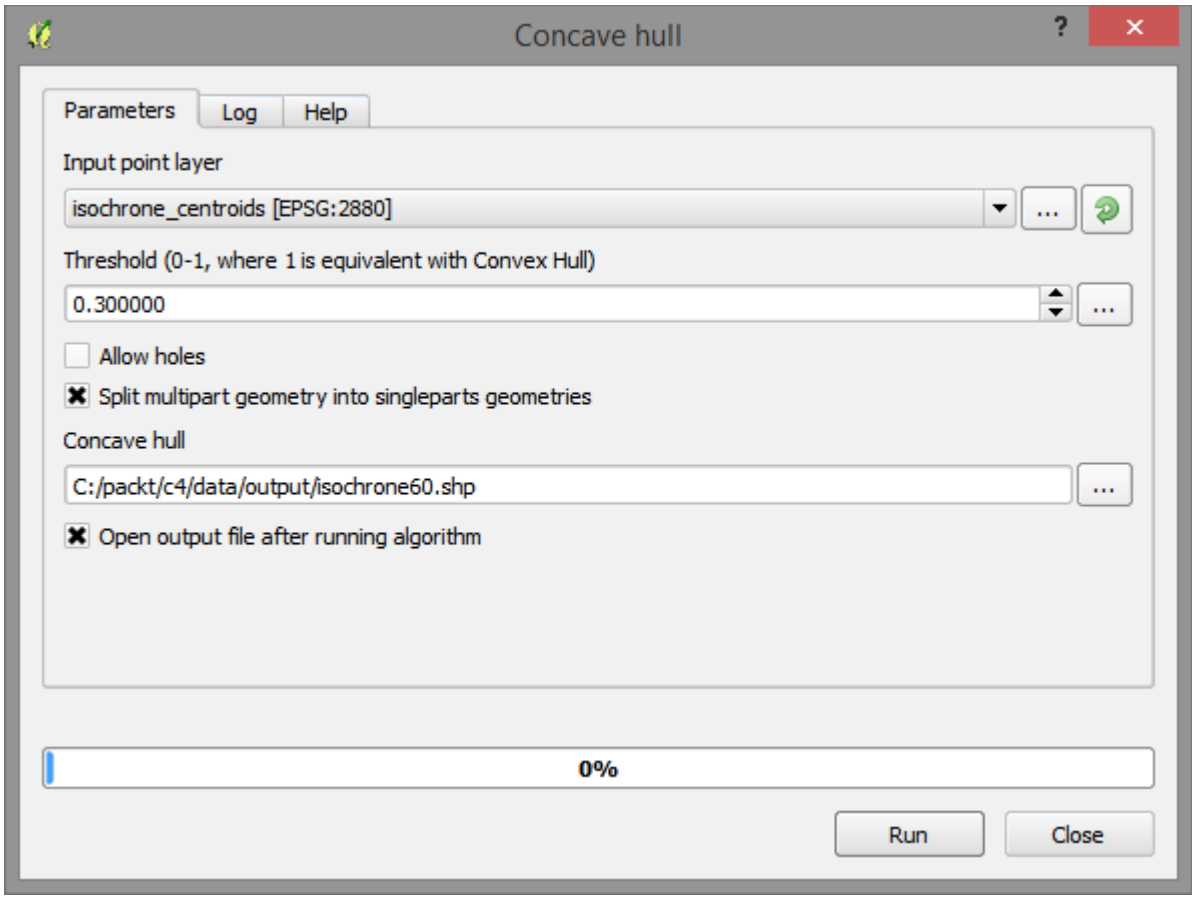

Import vector layer
Input
Split lines
...
Update options
Output table
Schema
public
Table
newark_osm
Options
Primary key
Geometry column
Source SRID
2880
Target SRID
2880
Encoding
UTF-8
Drop existing table
Create single-part geometries instead of multi-part
Create spatial index
OK
Cancel

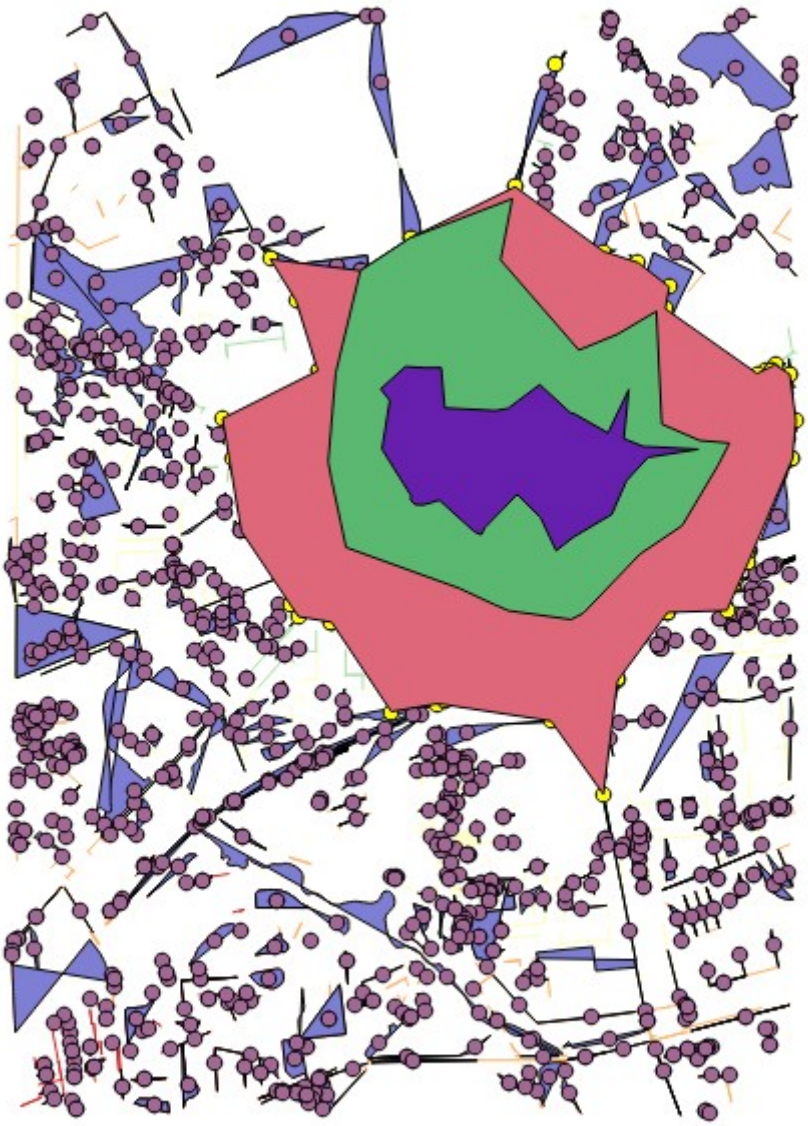

Import vector layer
Input
students
...
Update options
Output table
Schema
public
Table
students
Options
Primary key
Geometry column
Source SRID
2880
Target SRID
2880
Encoding
UTF-8
Drop existing table
Create single-part geometries instead of multi-part
Create spatial index
OK
Cancel

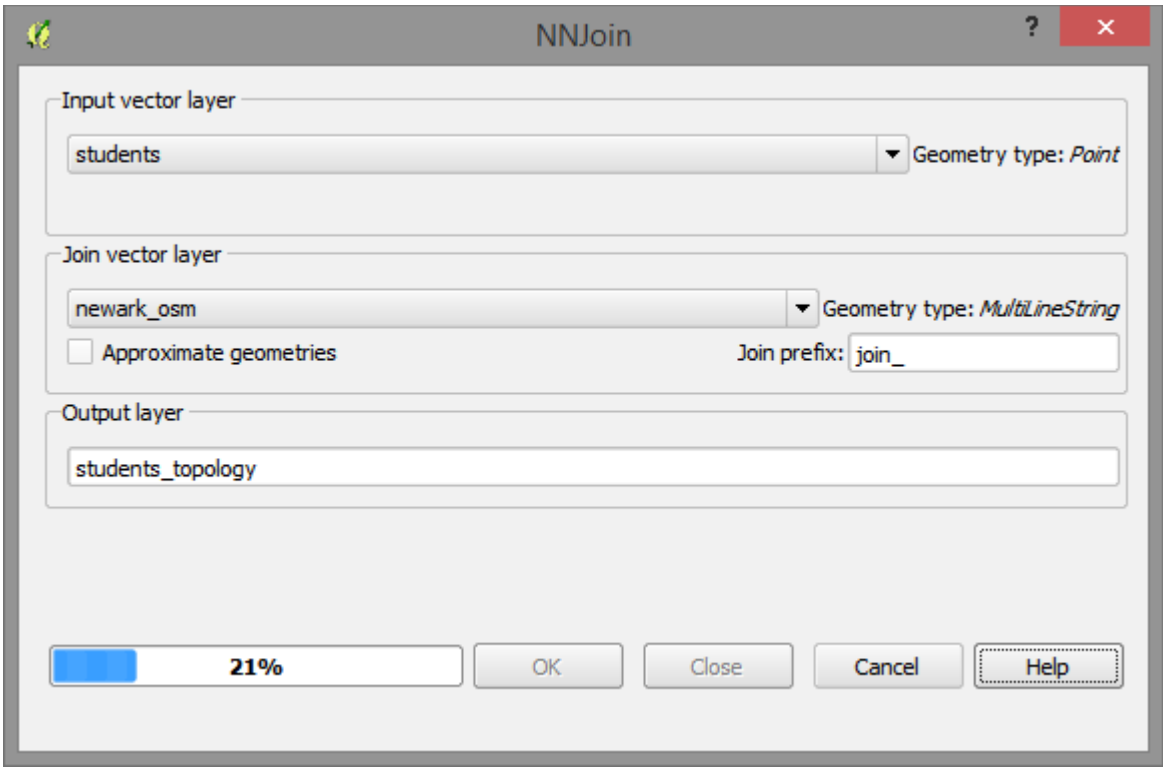

DB Manager
Database
Schema
Table
Tree
PostGIS
packt
packtC4
packt_c4
public
geography_columns
geometry_columns
newark_osm
newark_osm_vertices_pgr
raster_columns
raster_overviews
spatial_ref_sys
SpatiaLite
Info
Table
Preview
newark_osm
General info
Relation type: Table
Owner: postgres
Pages: 330
Rows (estimation): 2852
Privileges: select, insert, update, delete
PostGIS
Column: geom
Geometry: LINESTRING
Dimension: 2
Spatial ref: NAD83(HARN) / Delaware (ftUS) (2880)
Estimated extent: 551153.75000, 598504.68750 - 570072.93750, 624931.12500
Extent: (unknown) (find out)
Fields
Name Type Length Null Default
1 id int4 4 N nextval('newark_osm_id_seq'::regclass)
2 geom geometry (LineString,2880) Y
3 osm_id varchar Y
4 name varchar Y
5 highway varchar Y
6 waterway varchar Y
7 aerialway varchar Y
8 barrier varchar Y
9 man_made varchar Y
10 other_tags varchar Y
11 source int4 4 Y
12 target int4 4 Y
Constraints
Name Type Column(s)
newark_osm_pkey Primary key id
Indexes
Name Column(s)
sidx_newark_osm_geom geom
newark_osm_source_idx source
newark_osm_target_idx target

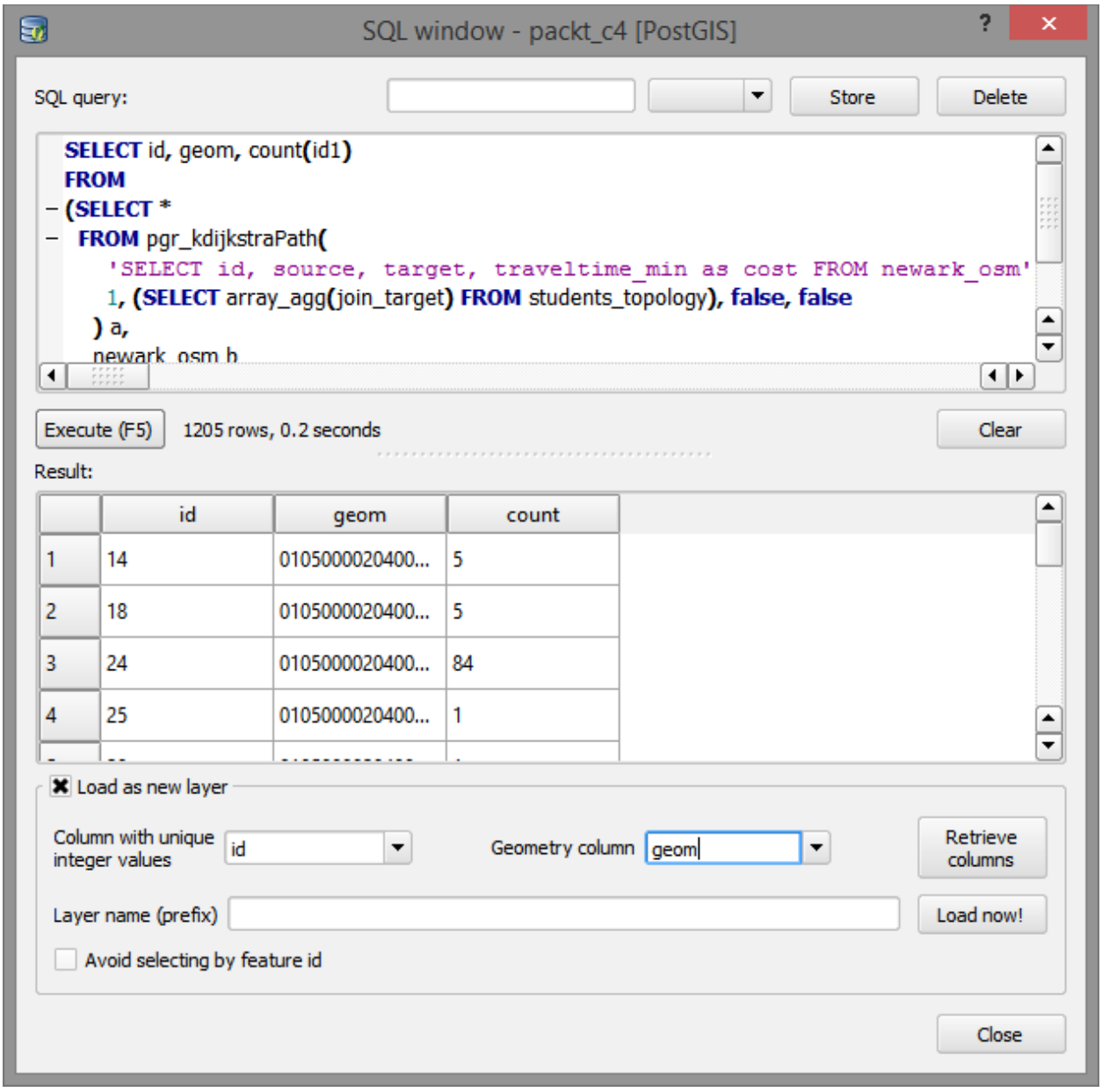

pgRouting Layer
Database
packt_c4
Function
dijkstra
sql
edge_table
newark_osm
geometry
geom
id
id
source
source
target
target
cost
length_m
reverse_cost
reverse_cost
source_id
1
target_id
1000
directed
has_reverse_cost
Run
Export
Clear

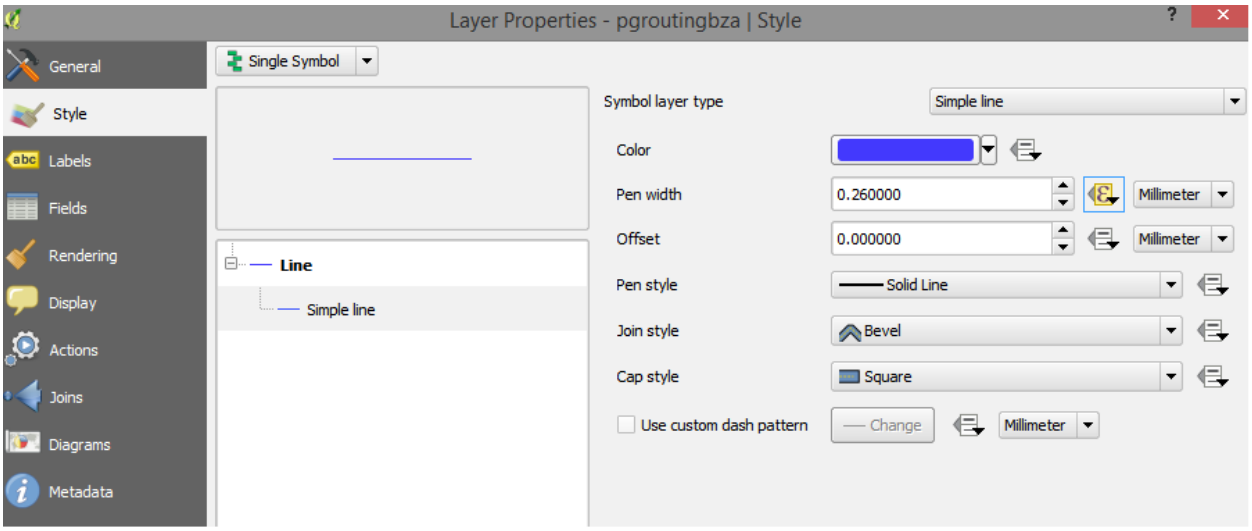

SQL window - packt_c4 [PostGIS]
SQL query:
Store
Delete
SELECT *
FROM pgr_drivingdistance('SELECT id, source, target, traveltime_min as cost
FROM newark_osm'::text, 1, 100000::double precision, false, false) di (seq, id1, id2, cost)
JOIN newark_osm rd ON di.id2 = rd.id;
Execute (F5)
5180 rows, 0.1 seconds
Clear
Result:
seq id1 id2 cost id ge
1 11 12 5 182.611918509 5 0105000
2 13 14 6 183.747842219 6 0105000
3 16 17 8 182.901745995 8 0105000
4 12 13 9 180.306989456 9 0105000
5 18 19 10 175.57235507 10 0105000
6 22 23 12 151.08862215 12 0105000
7 23 24 13 151.282107706 13 0105000
8 30 31 19 194.70087921 19 0105000
9 36 37 21 83.6833571437 21 0105000
Load as new layer
Column with unique integer values
seq
Geometry column
geom
Retrieve columns
Layer name (prefix)
Load now!
Avoid selecting by feature id
Close

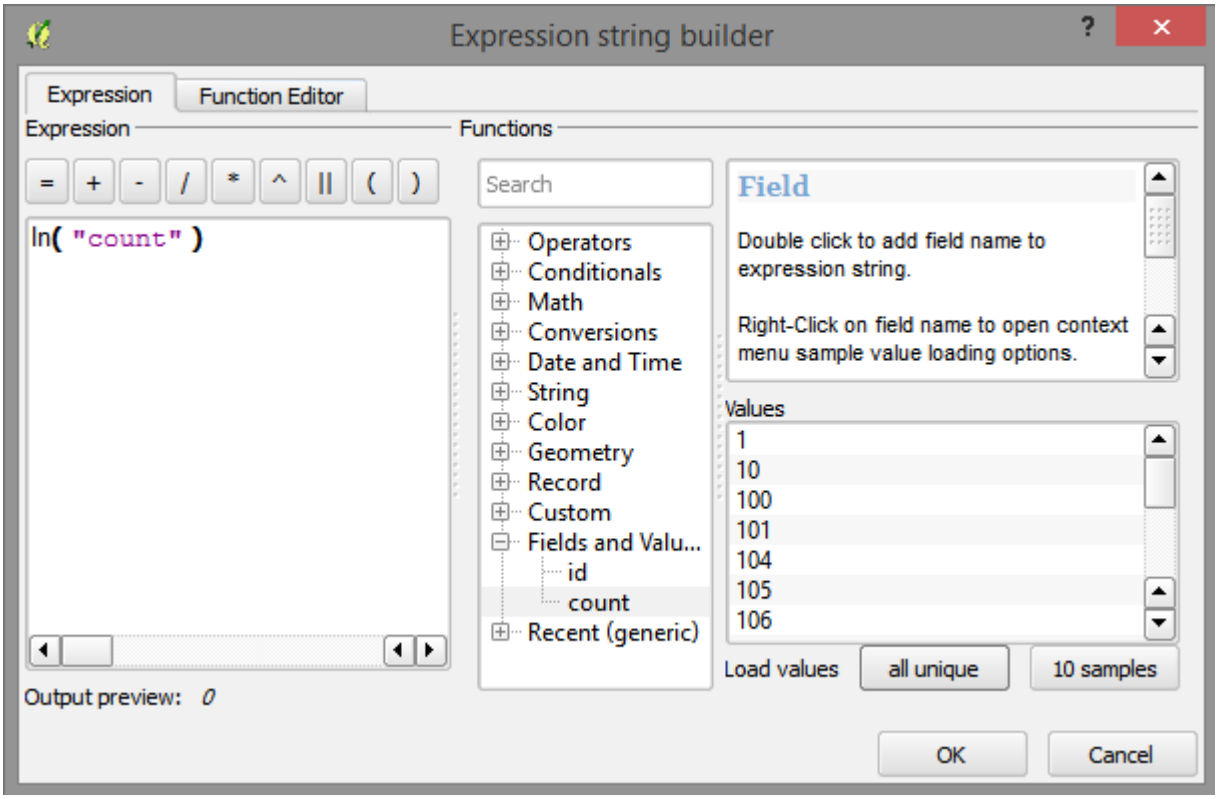

Concave hull
Parameters
Log
Help
Input point layer
isochrone_centroids [EPSG:2880]
Threshold (0-1, where 1 is equivalent with Convex Hull)
0.300000
Allow holes
Split multipart geometry into singleparts geometries
Concave hull
C:/packt/c4/data/output/isochrone60.shp
Open output file after running algorithm
0%
Run
Close

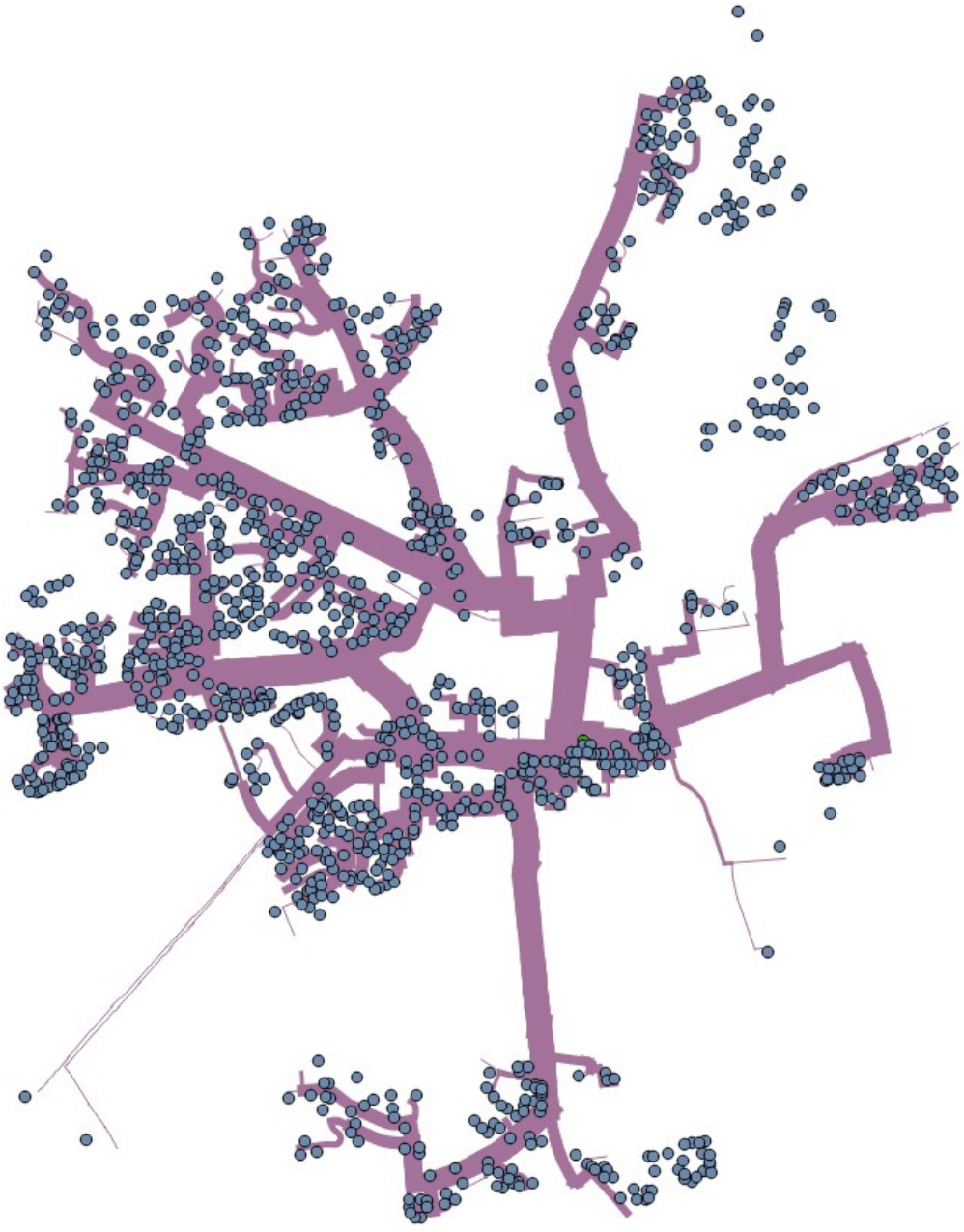


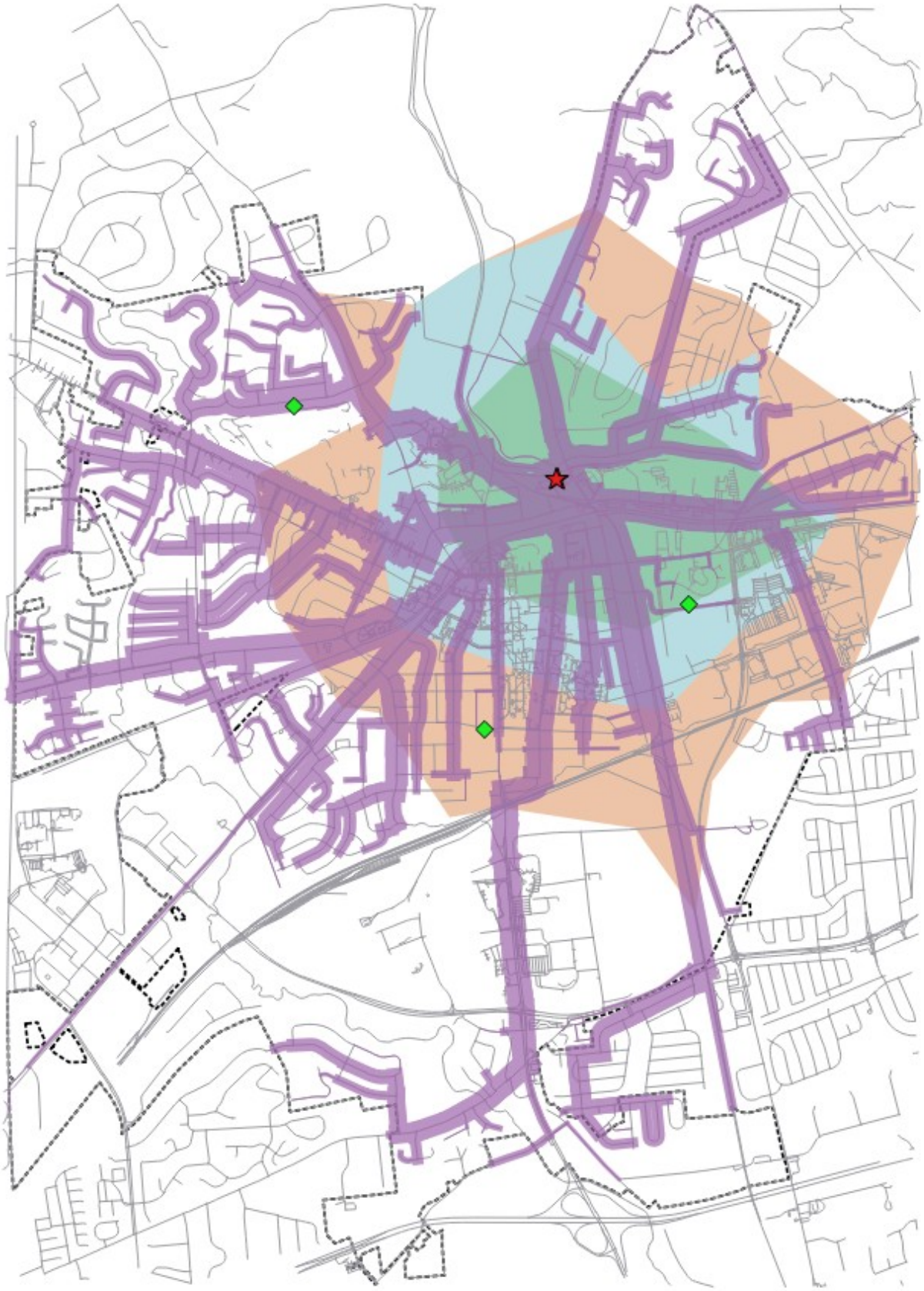

NNJoin
Input vector layer
students
Geometry type: Point
Join vector layer
newark_osm
Geometry type: MultiLineString
Approximate geometries
Join prefix:
join_
Output layer
students_topology
21%
OK
Close
Cancel
Help

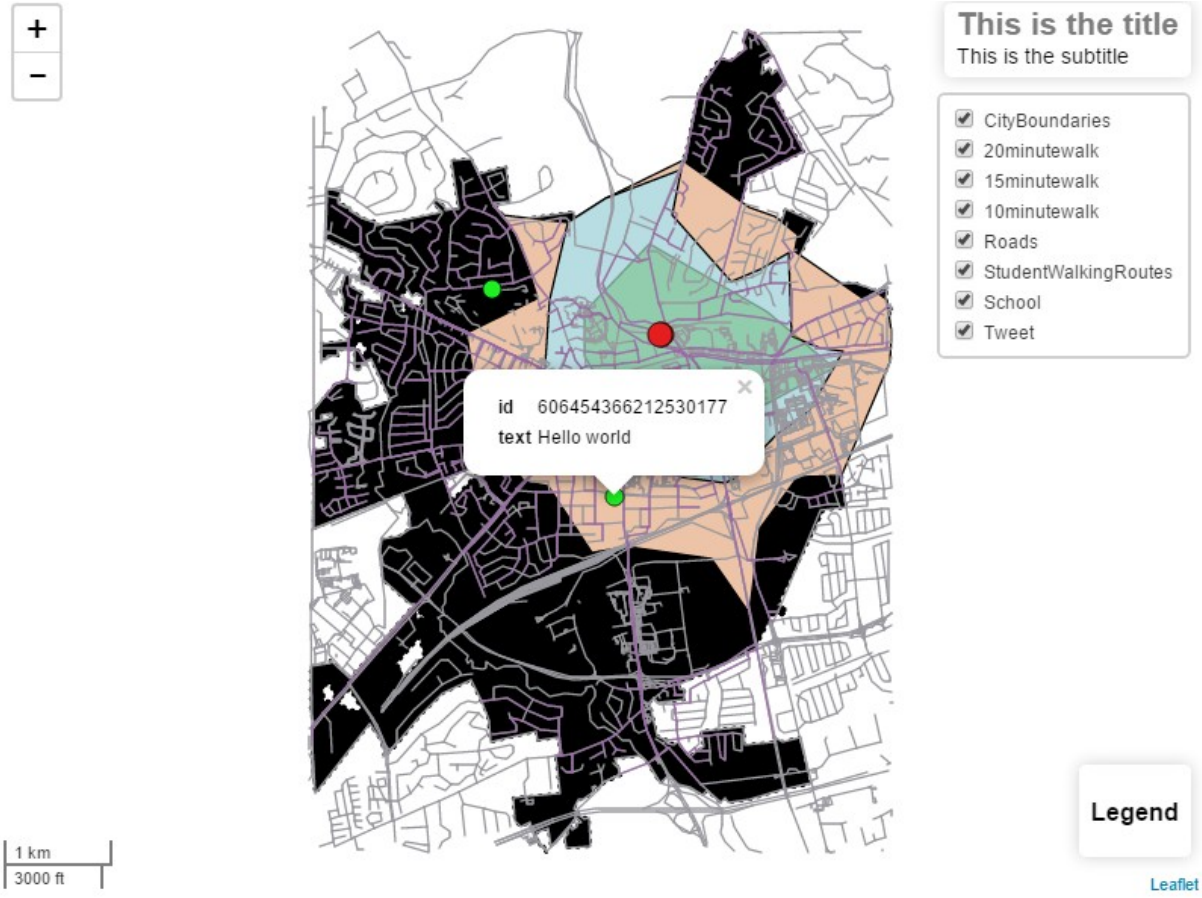

SQL window - packt_c4 [PostGIS]
SQL query:
Store
Delete
SELECT id, geom, count(id1)
FROM
(SELECT *
FROM pgr_kdijkstraPath(
'SELECT id, source, target, traveltime_min as cost FROM newark_osm'
1, (SELECT array_agg(join_target) FROM students_topology), false, false
) a,
newark_osm b
Execute (F5)
1205 rows, 0.2 seconds
Clear
Result:
id
geom
count
1
14
0105000020400...
5
2
18
0105000020400...
5
3
24
0105000020400...
84
4
25
0105000020400...
1
Load as new layer
Column with unique integer values
id
Geometry column
geom
Retrieve columns
Layer name (prefix)
Load now!
Avoid selecting by feature id
Close


Layer Properties - pgroutingbza | Style
General
Style
Labels
Fields
Rendering
Display
Actions
Joins
Diagrams
Metadata
Single Symbol
Line
Simple line
Symbol layer type
Simple line
Color
Pen width
0.260000
Millimeter
Offset
0.000000
Millimeter
Pen style
Solid Line
Join style
Bevel
Cap style
Square
Use custom dash pattern
Change
Millimeter

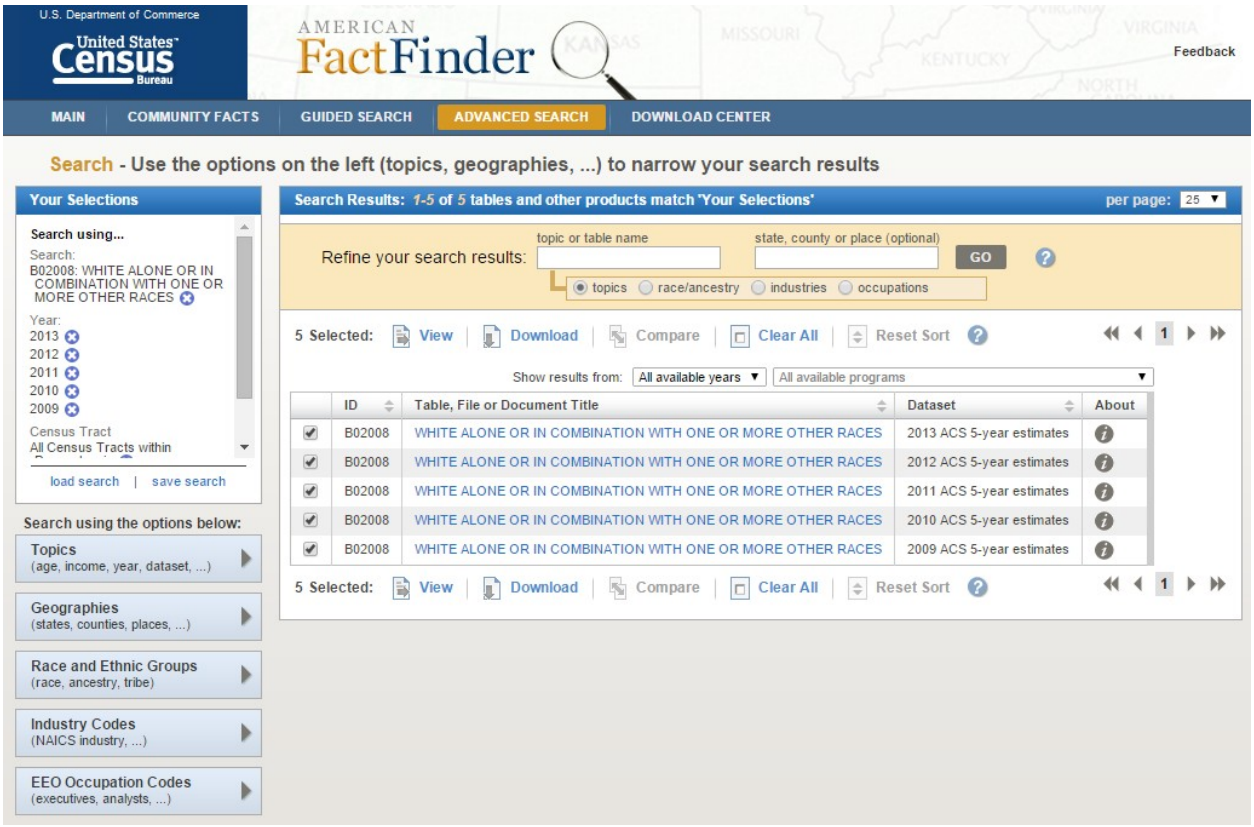

Expression string builder
Expression
Function Editor
Expression
Functions
= + - / * ^ || ( )
ln("count")
Search
Operators
Conditionals
Math
Conversions
Date and Time
String
Color
Geometry
Record
Custom
Fields and Valu...
id
count
Recent (generic)
Field
Double click to add field name to expression string.
Right-Click on field name to open context menu sample value loading options.
Values
1
10
100
101
104
105
106
Load values
all unique
10 samples
Output preview: 0
OK
Cancel

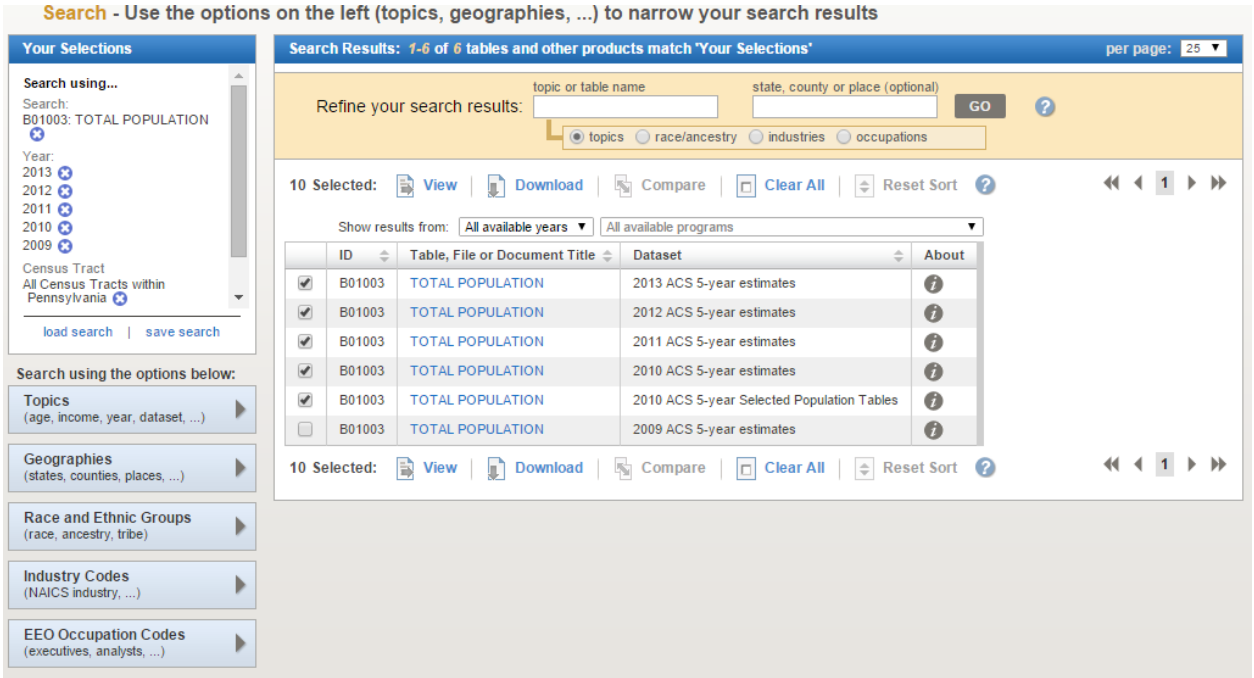


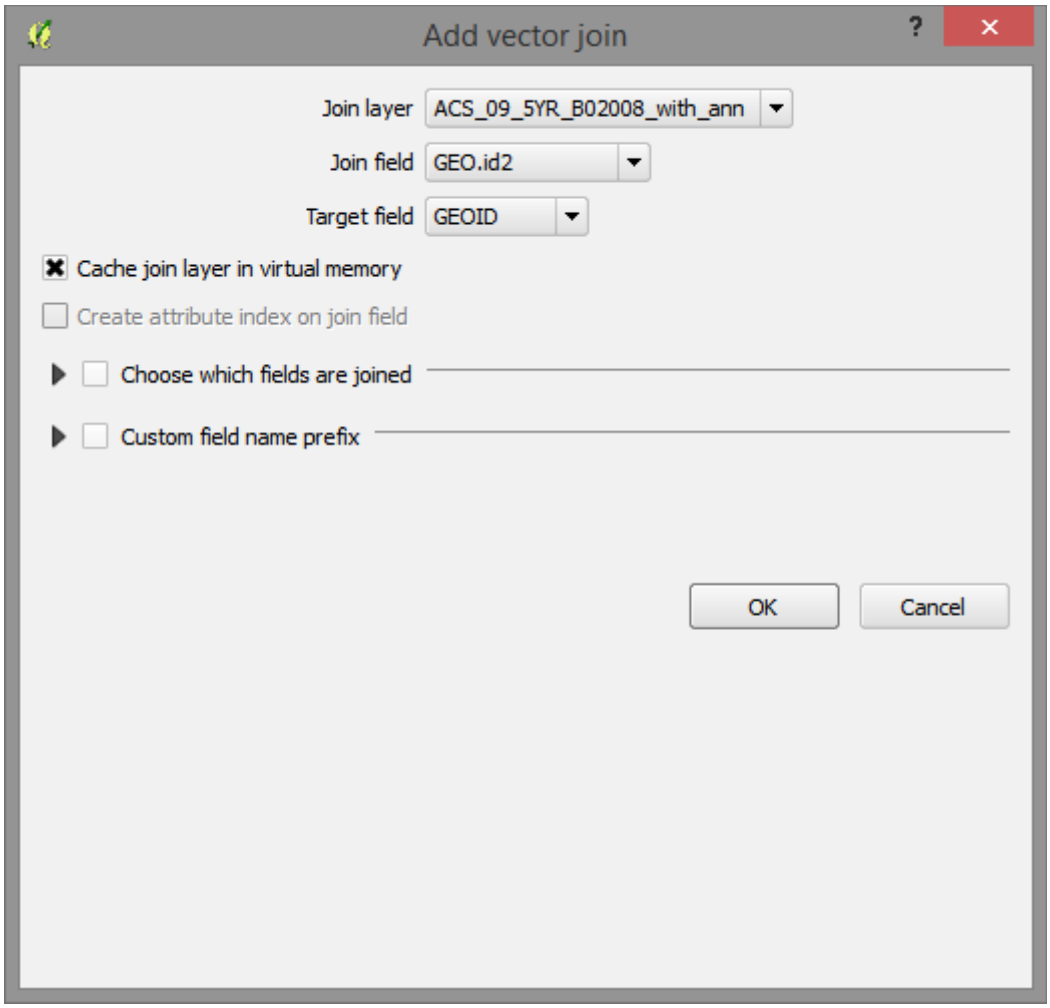


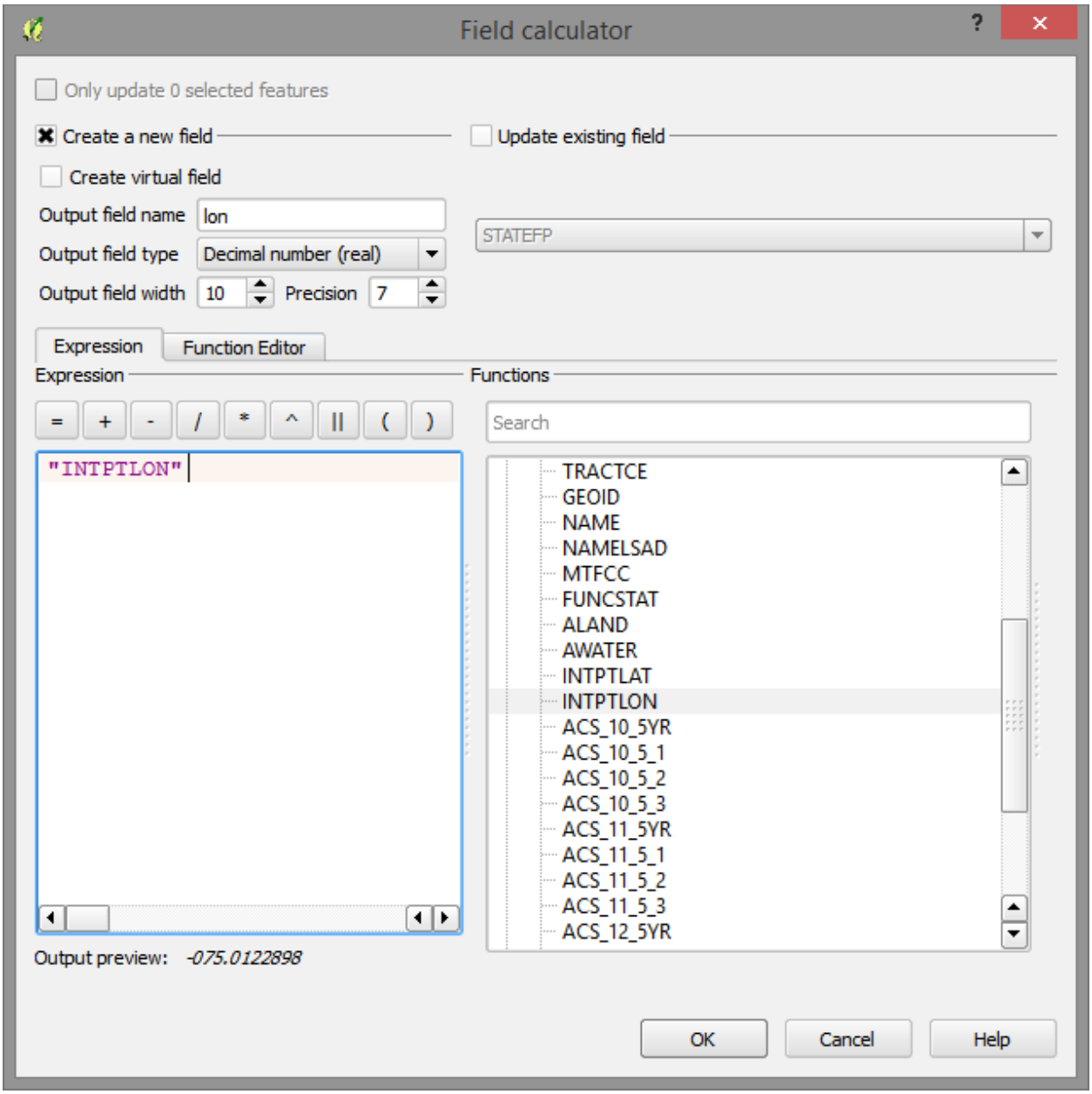


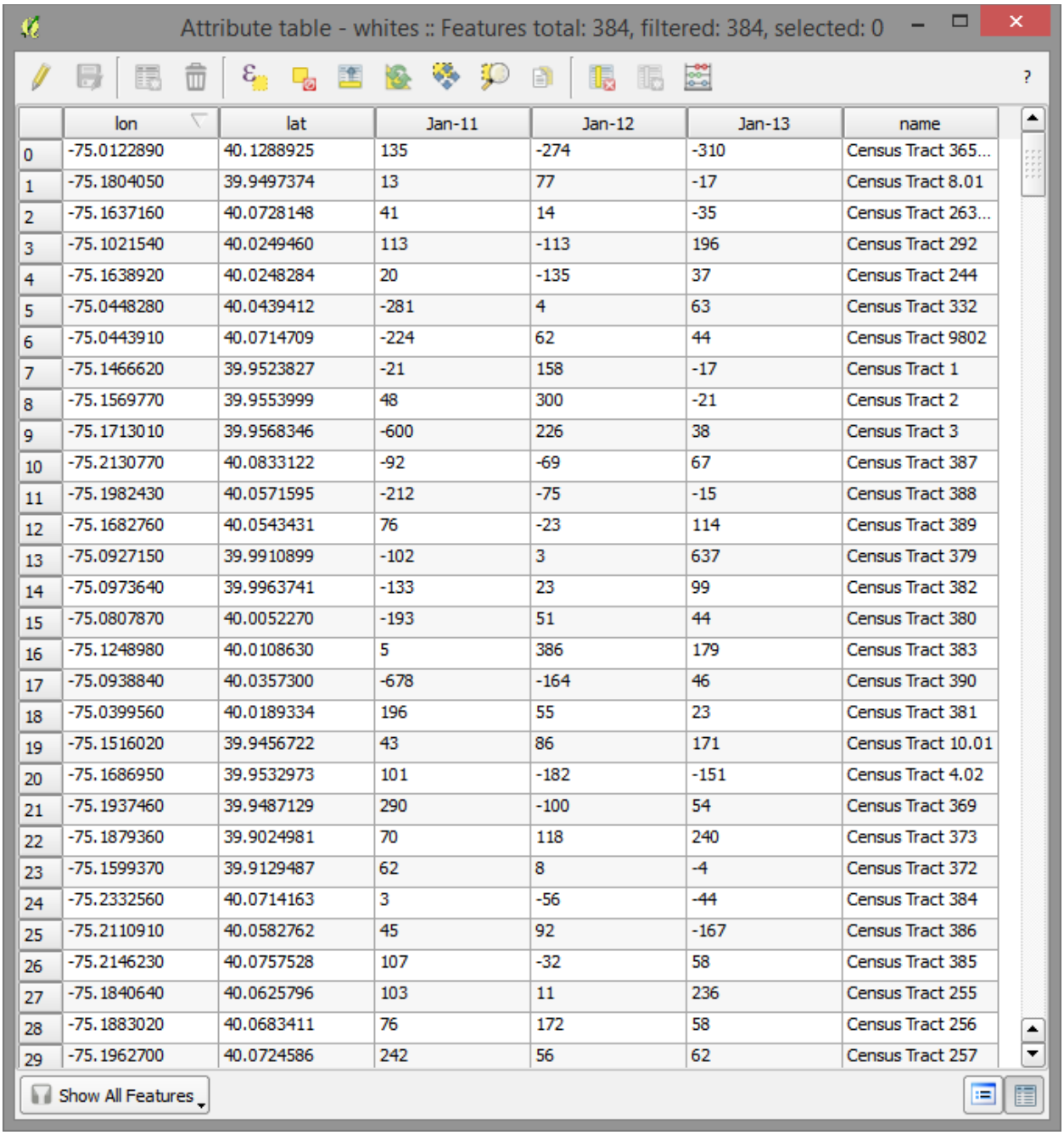
Chapter 5: Demonstrating Change


U.S. Department of Commerce
United States Census Bureau
AMERICAN FactFinder
Feedback
MAIN
COMMUNITY FACTS
GUIDED SEARCH
ADVANCED SEARCH
DOWNLOAD CENTER
Search - Use the options on the left (topics, geographies, ...) to narrow your search results
Your Selections
Search using...
Search:
B02008: WHITE ALONE OR IN COMBINATION WITH ONE OR MORE OTHER RACES
Year:
2013
2012
2011
2010
2009
Census Tract
All Census Tracts within
load search | save search
Search using the options below:
Topics
(age, income, year, dataset, ...)
Geographies
(states, counties, places, ...)
Race and Ethnic Groups
(race, ancestry, tribe)
Industry Codes
(NAICS industry, ...)
EEO Occupation Codes
(executives, analysts, ...)
Search Results: 1-5 of 5 tables and other products match 'Your Selections'
per page: 25
Refine your search results:
topic or table name
state, county or place (optional)
GO
topics race/ancestry industries occupations
5 Selected: View | Download | Compare | Clear All | Reset Sort
Show results from: All available years All available programs
ID
Table, File or Document Title
Dataset
About
B02008 WHITE ALONE OR IN COMBINATION WITH ONE OR MORE OTHER RACES 2013 ACS 5-year estimates
B02008 WHITE ALONE OR IN COMBINATION WITH ONE OR MORE OTHER RACES 2012 ACS 5-year estimates
B02008 WHITE ALONE OR IN COMBINATION WITH ONE OR MORE OTHER RACES 2011 ACS 5-year estimates
B02008 WHITE ALONE OR IN COMBINATION WITH ONE OR MORE OTHER RACES 2010 ACS 5-year estimates
B02008 WHITE ALONE OR IN COMBINATION WITH ONE OR MORE OTHER RACES 2009 ACS 5-year estimates
5 Selected: View | Download | Compare | Clear All | Reset Sort

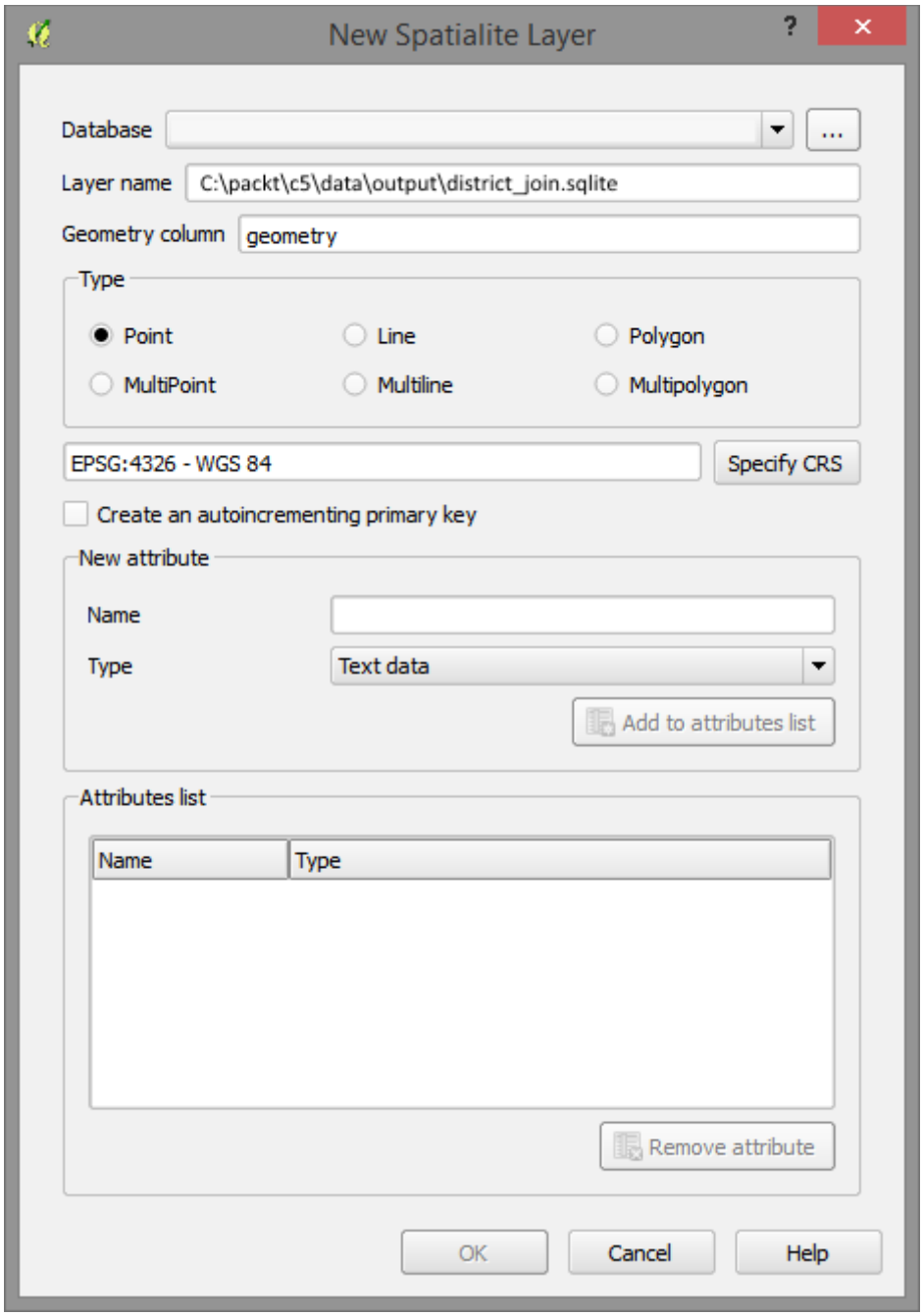

Search - Use the options on the left (topics, geographies, ...) to narrow your search results
Your Selections
Search using...
Search:
B01003: TOTAL POPULATION
Year:
2013
2012
2011
2010
2009
Census Tract
All Census Tracts within Pennsylvania
load search | save search
Search using the options below:
Topics
(age, income, year, dataset, ...)
Geographies
(states, counties, places, ...)
Race and Ethnic Groups
(race, ancestry, tribe)
Industry Codes
(NAICS industry, ...)
EEO Occupation Codes
(executives, analysts, ...)
Search Results: 1-6 of 6 tables and other products match 'Your Selections'
per page: 25
Refine your search results:
topic or table name
state, county or place (optional)
GO
topics race/ancestry industries occupations
10 Selected: View | Download | Compare | Clear All | Reset Sort
Show results from: All available years All available programs
ID
Table, File or Document Title
Dataset
About
B01003 TOTAL POPULATION 2013 ACS 5-year estimates
B01003 TOTAL POPULATION 2012 ACS 5-year estimates
B01003 TOTAL POPULATION 2011 ACS 5-year estimates
B01003 TOTAL POPULATION 2010 ACS 5-year estimates
B01003 TOTAL POPULATION 2010 ACS 5-year Selected Population Tables
B01003 TOTAL POPULATION 2009 ACS 5-year estimates
10 Selected: View | Download | Compare | Clear All | Reset Sort

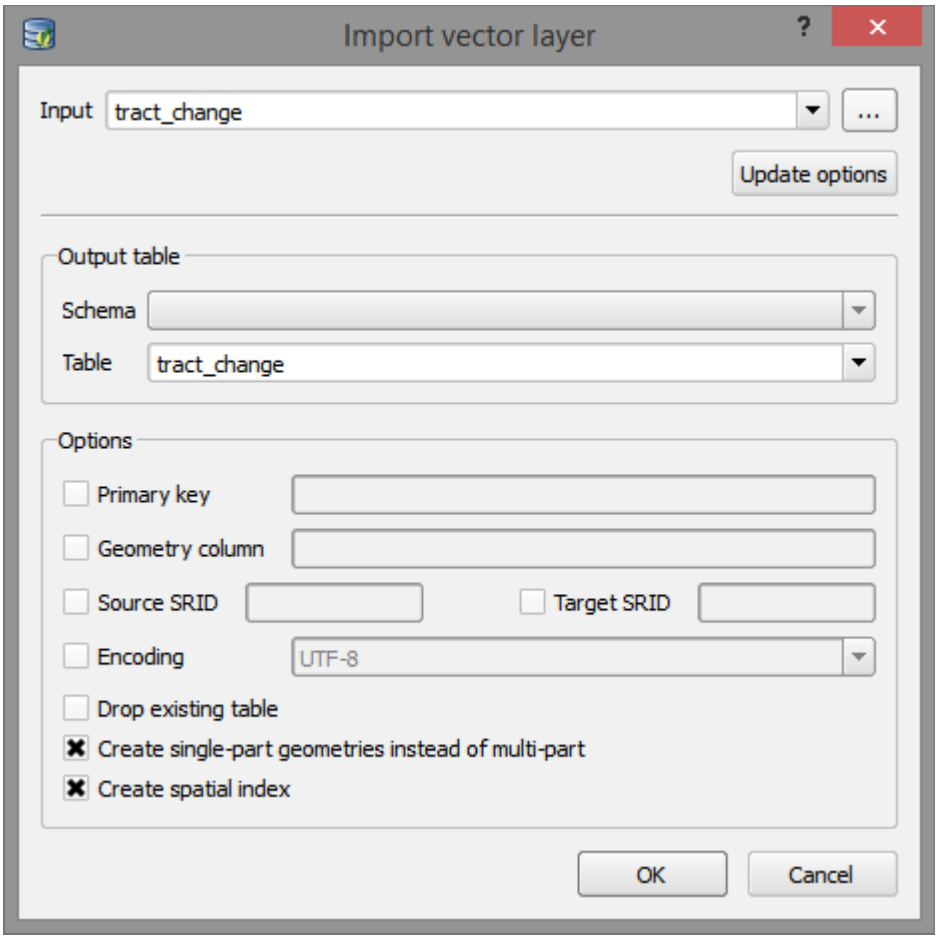

Add vector join
Join layer
ACS_09_5YR_B02008_with_ann
Join field
GEO.id2
Target field
GEOID
Cache join layer in virtual memory
Create attribute index on join field
Choose which fields are joined
Custom field name prefix
OK
Cancel

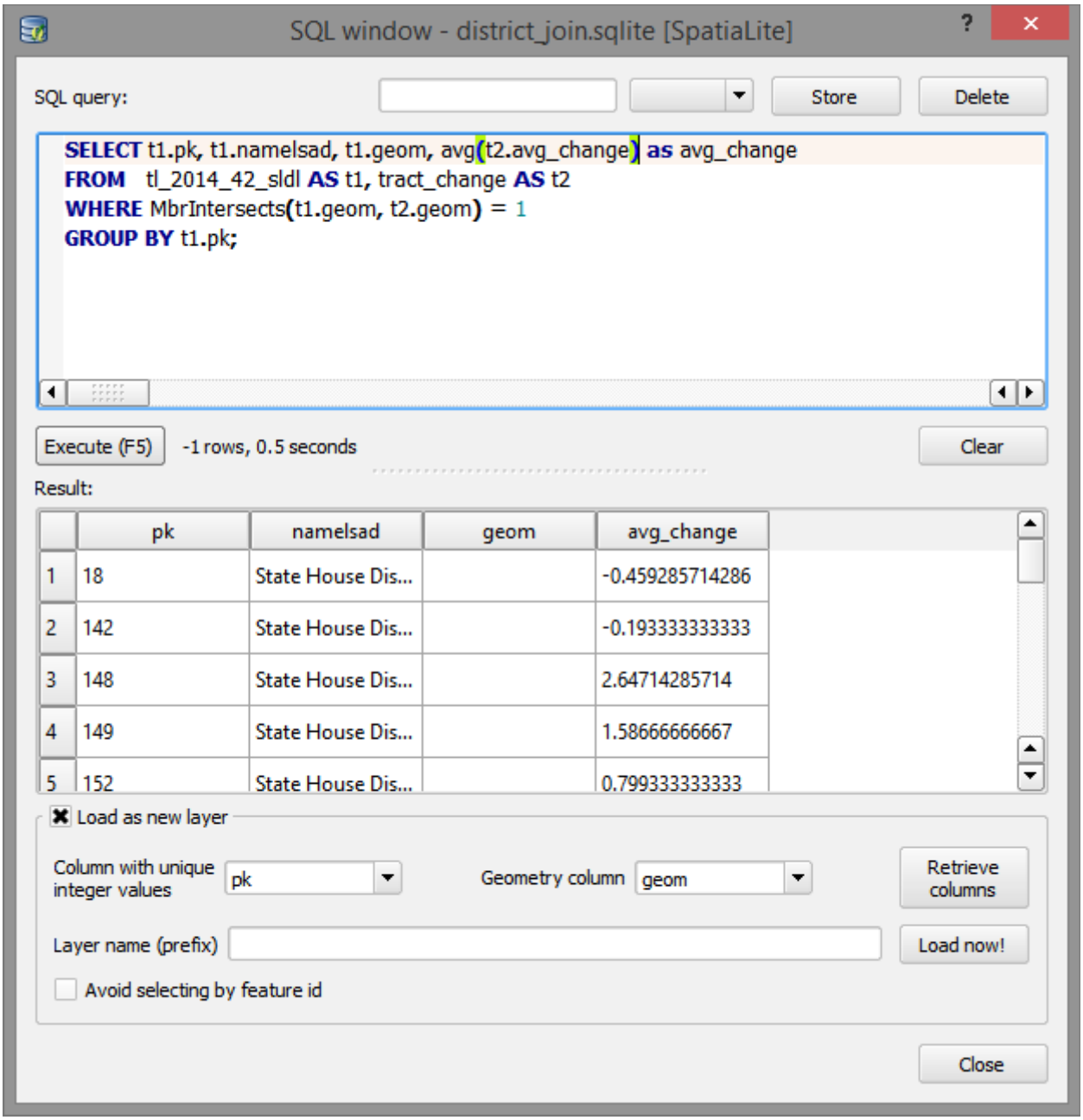

Field calculator
Only update 0 selected features
Create a new field
Update existing field
Create virtual field
Output field name
lon
Output field type
Decimal number (real)
Output field width
10
Precision
7
STATEFP
Expression
Function Editor
Expression
Functions
= + - / * ^ || ( )
Search
"INTPTLON"
TRACTCE
GEOID
NAME
NAMELSAD
MTFCC
FUNCSTAT
ALAND
AWATER
INTPTLAT
INTPTLON
ACS_10_5YR
ACS_10_5_1
ACS_10_5_2
ACS_10_5_3
ACS_11_5YR
ACS_11_5_1
ACS_11_5_2
ACS_11_5_3
ACS_12_5YR
Output preview:
-075.0122898
OK
Cancel
Help

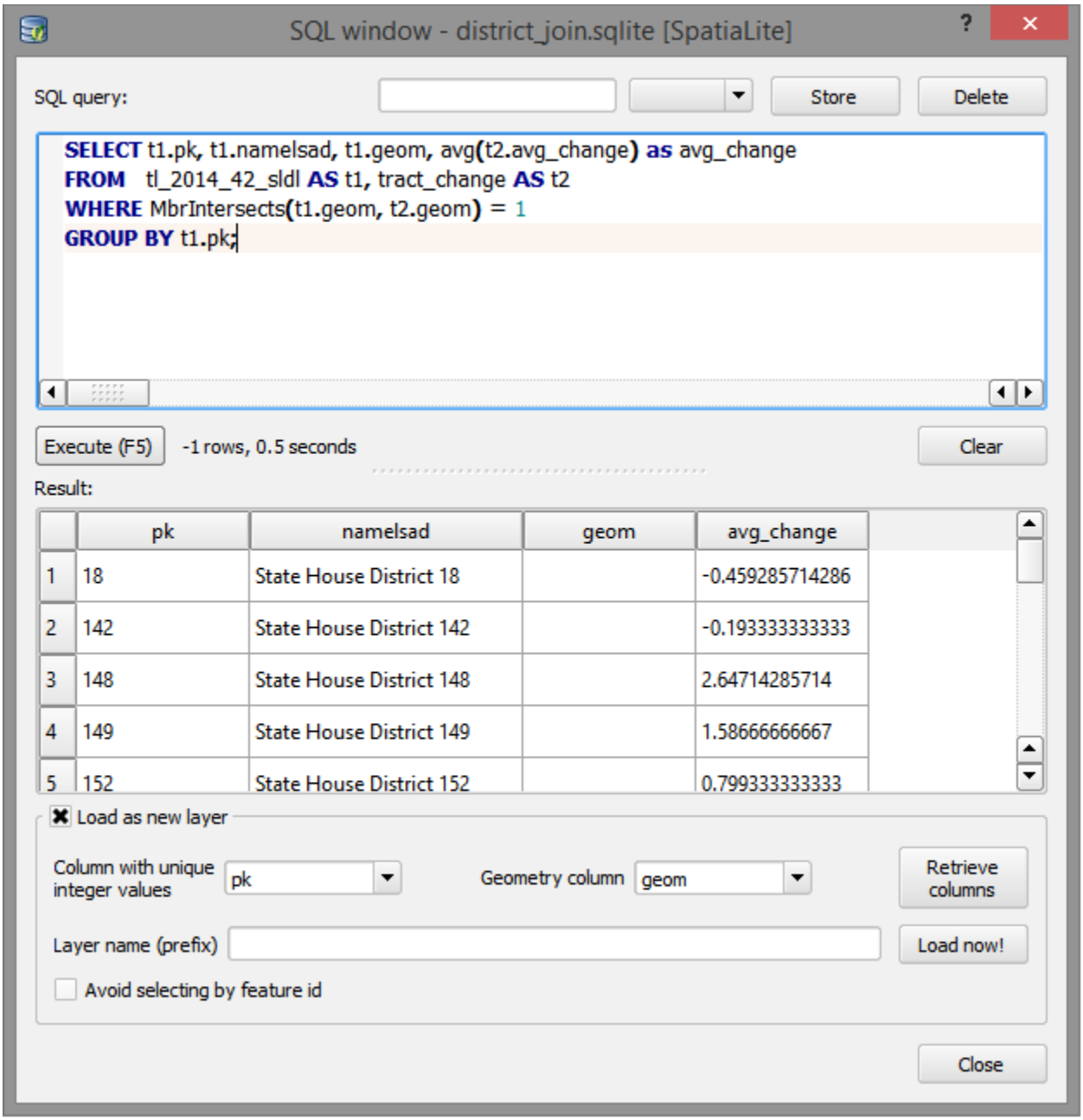


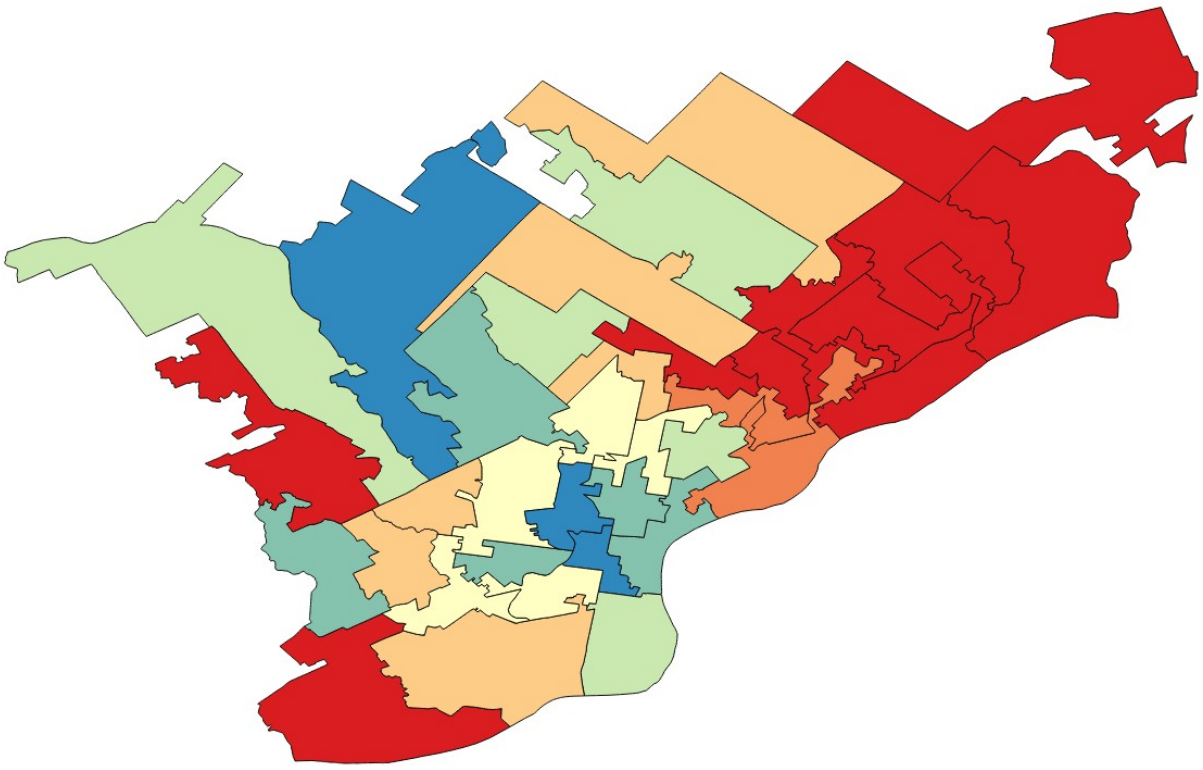
	lon	lat	Jan-11	Jan-12	Jan-13	name
0	-75.0122890	40.1288925	135	-274	-310	Census Tract 365...
1	-75.1804050	39.9497374	13	77	-17	Census Tract 8.01
2	-75.1637160	40.0728148	41	14	-35	Census Tract 263...
3	-75.1021540	40.0249460	113	-113	196	Census Tract 292
4	-75.1638920	40.0248284	20	-135	37	Census Tract 244
5	-75.0448280	40.0439412	-281	4	63	Census Tract 332
6	-75.0443910	40.0714709	-224	62	44	Census Tract 9802
7	-75.1466620	39.9523827	-21	158	-17	Census Tract 1
8	-75.1569770	39.9553999	48	300	-21	Census Tract 2
9	-75.1713010	39.9568346	-600	226	38	Census Tract 3
10	-75.2130770	40.0833122	-92	-69	67	Census Tract 387
11	-75.1982430	40.0571595	-212	-75	-15	Census Tract 388
12	-75.1682760	40.0543431	76	-23	114	Census Tract 389
13	-75.0927150	39.9910899	-102	3	637	Census Tract 379
14	-75.0973640	39.9963741	-133	23	99	Census Tract 382
15	-75.0807870	40.0052270	-193	51	44	Census Tract 380
16	-75.1248980	40.0108630	5	386	179	Census Tract 383
17	-75.0938840	40.0357300	-678	-164	46	Census Tract 390
18	-75.0399560	40.0189334	196	55	23	Census Tract 381
19	-75.1516020	39.9456722	43	86	171	Census Tract 10.01
20	-75.1686950	39.9532973	101	-182	-151	Census Tract 4.02
21	-75.1937460	39.9487129	290	-100	54	Census Tract 369
22	-75.1879360	39.9024981	70	118	240	Census Tract 373
23	-75.1599370	39.9129487	62	8	-4	Census Tract 372
24	-75.2332560	40.0714163	3	-56	-44	Census Tract 384
25	-75.2110910	40.0582762	45	92	-167	Census Tract 386
26	-75.2146230	40.0757528	107	-32	58	Census Tract 385
27	-75.1840640	40.0625796	103	11	236	Census Tract 255
28	-75.1883020	40.0683411	76	172	58	Census Tract 256
29	-75.1962700	40.0724586	242	56	62	Census Tract 257


New Spatialite Layer
Database
Layer name
C:\packt\c5\data\output\district_join.sqlite
Geometry column
geometry
Type
Point
Line
Polygon
MultiPoint
Multiline
Multipolygon
EPSG:4326 - WGS 84
Specify CRS
Create an autoincrementing primary key
New attribute
Name
Type
Text data
Add to attributes list
Attributes list
Name
Type
Remove attribute
OK
Cancel
Help

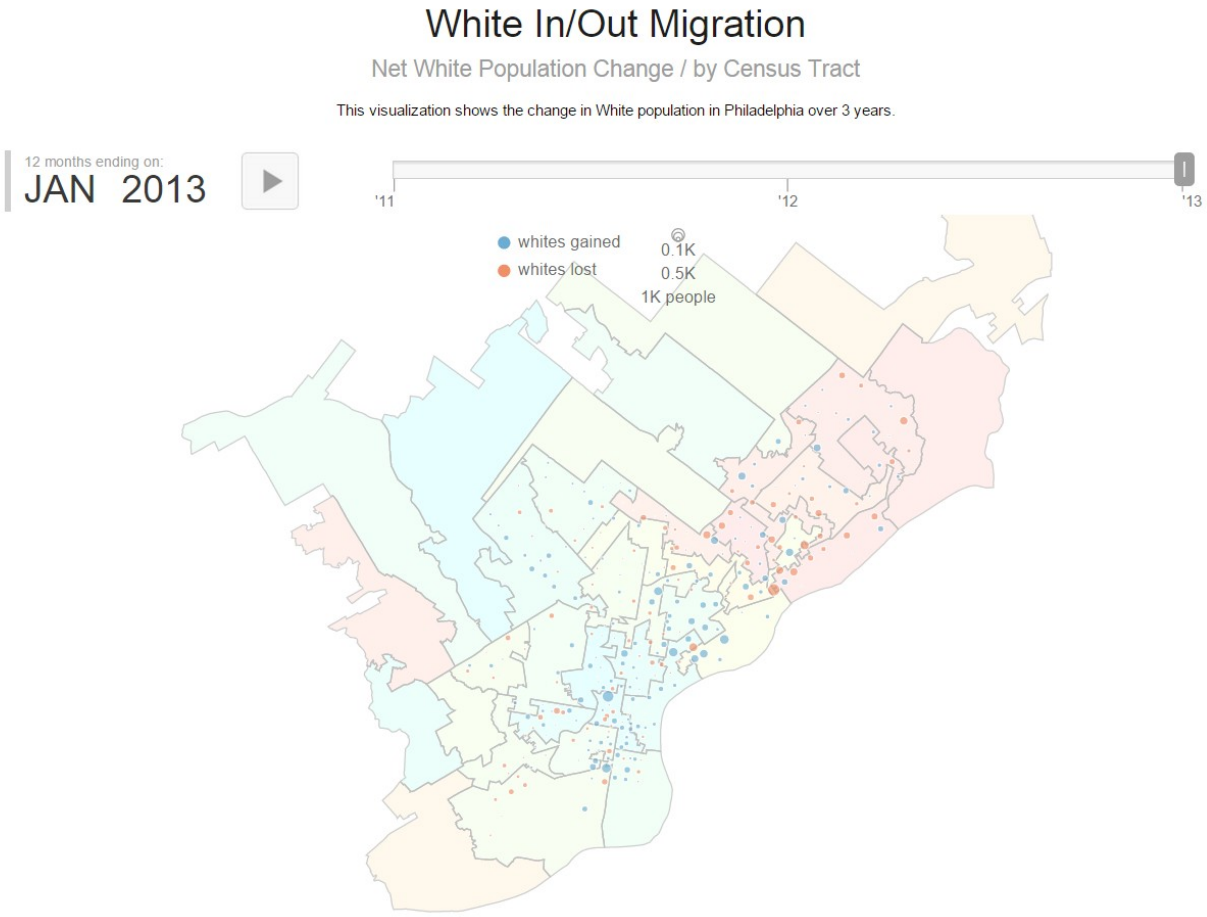

Import vector layer
Input
tract_change
...
Update options
Output table
Schema
Table
tract_change
Options
Primary key
Geometry column
Source SRID
Target SRID
Encoding
UTF-8
Drop existing table
Create single-part geometries instead of multi-part
Create spatial index
OK
Cancel


SQL window - district_join.sqlite [SpatiaLite]
SQL query:
Store
Delete
SELECT t1.pk, t1.namelsad, t1.geom, avg(t2.avg_change) as avg_change
FROM tl_2014_42_sldl AS t1, tract_change AS t2
WHERE MbrIntersects(t1.geom, t2.geom) = 1
GROUP BY t1.pk;
Execute (F5)
-1 rows, 0.5 seconds
Clear
Result:
pk
namelsad
geom
avg_change
1 18 State House Dis... -0.459285714286
2 142 State House Dis... -0.193333333333
3 148 State House Dis... 2.64714285714
4 149 State House Dis... 1.58666666667
5 152 State House Dis... 0.799333333333
Load as new layer
Column with unique integer values
pk
Geometry column
geom
Retrieve columns
Layer name (prefix)
Load now!
Avoid selecting by feature id
Close

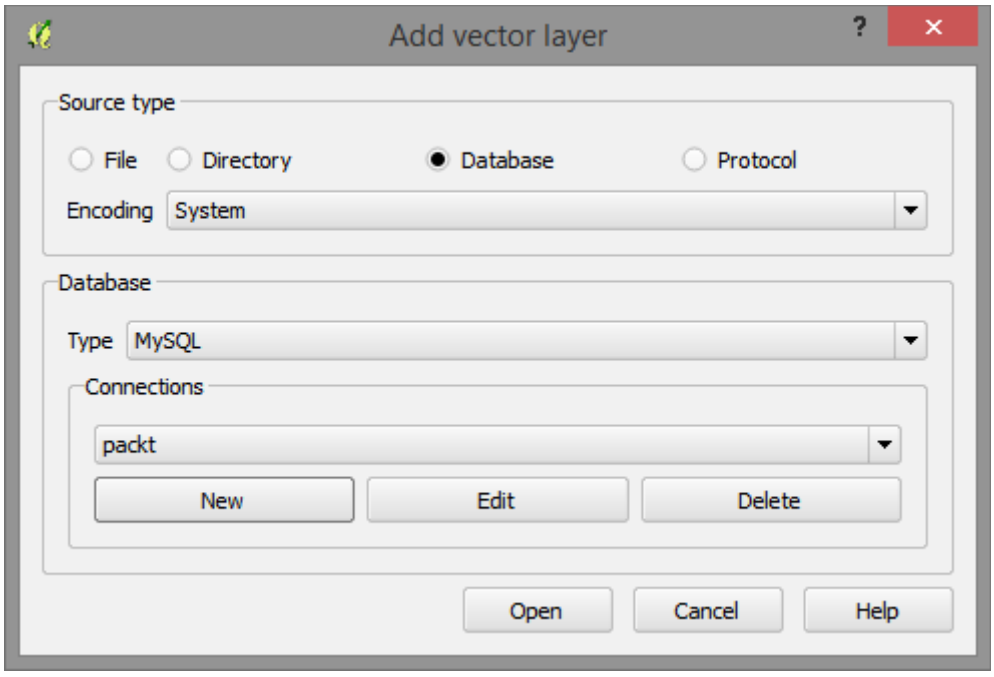

SQL window - district_join.sqlite [SpatiaLite]
SQL query:
Store
Delete
SELECT t1.pk, t1.namelsad, t1.geom, avg(t2.avg_change) as avg_change
FROM tl_2014_42_sldl AS t1, tract_change AS t2
WHERE MbrIntersects(t1.geom, t2.geom) = 1
GROUP BY t1.pk;
Execute (F5)
-1 rows, 0.5 seconds
Clear
Result:
pk
namelsad
geom
avg_change
1 18 State House District 18 -0.459285714286
2 142 State House District 142 -0.193333333333
3 148 State House District 148 2.64714285714
4 149 State House District 149 1.58666666667
5 152 State House District 152 0.799333333333
Load as new layer
Column with unique integer values
pk
Geometry column
geom
Retrieve columns
Layer name (prefix)
Load now!
Avoid selecting by feature id
Close

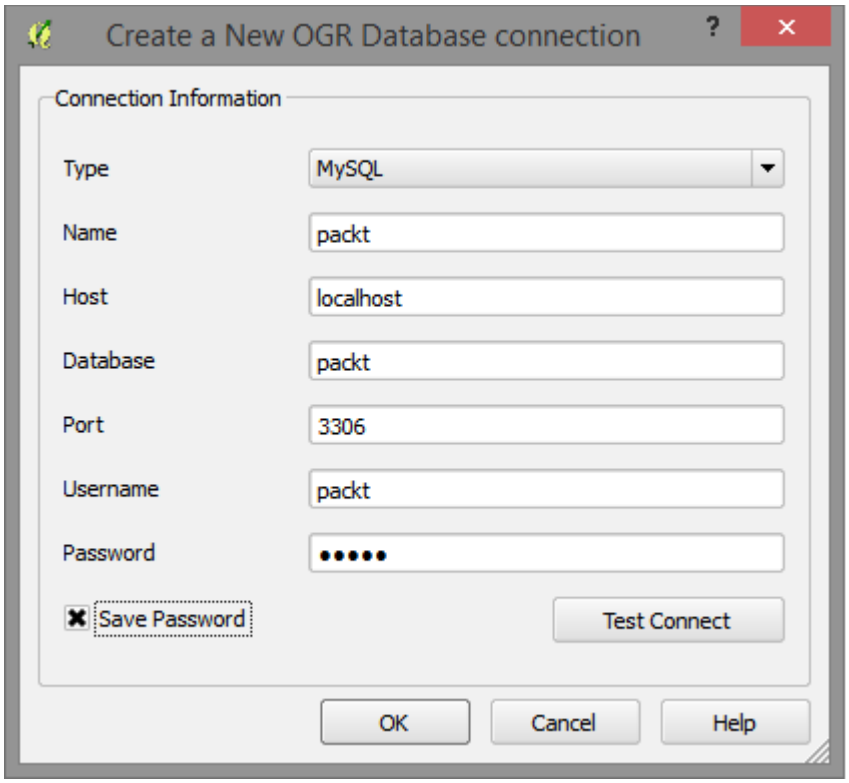


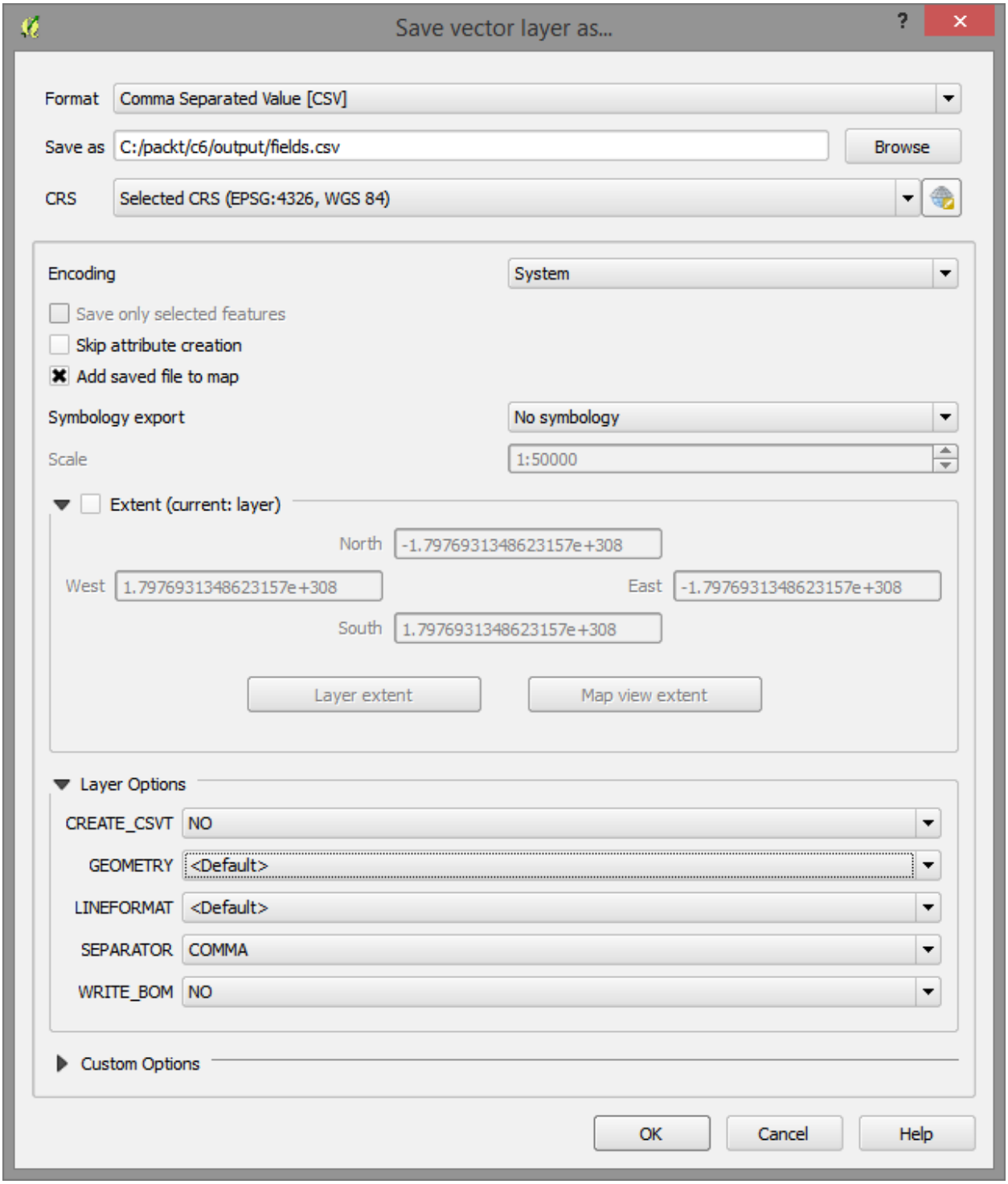

```
c:\packt\c5\data\temp>topojson -p -o house_district.json house_district.shp
bounds: -75.463053 39.848782 -74.869303 40.224734999999995 (spherical)
pre-quantization: 0.0660m (5.94e-7°) 0.0418m (3.76e-7°)
topology: 105 arcs, 16475 points
post-quantization: 6.60m (0.0000594°) 4.18m (0.0000376°)
prune: retained 105 / 105 arcs (100%)
```

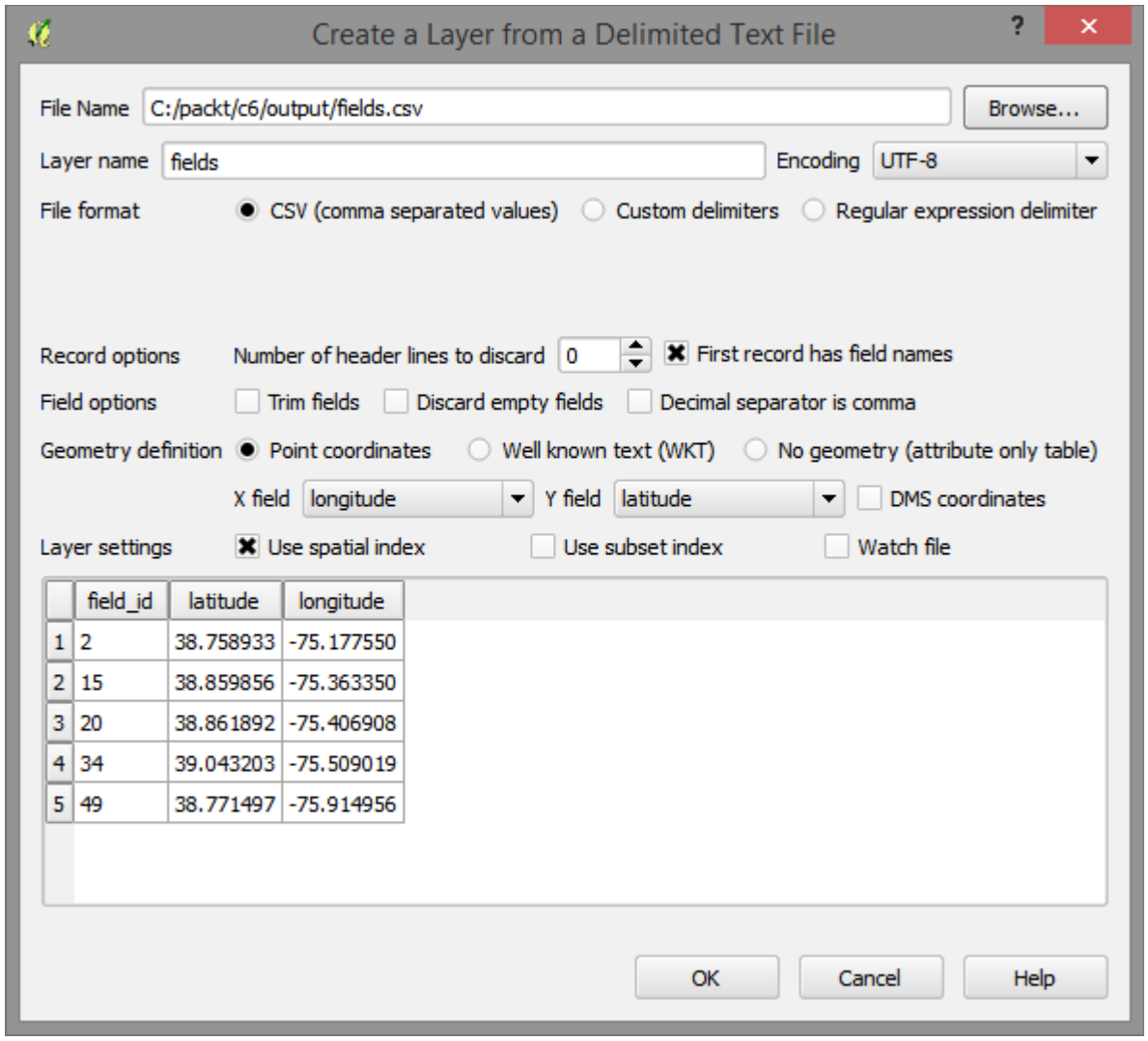


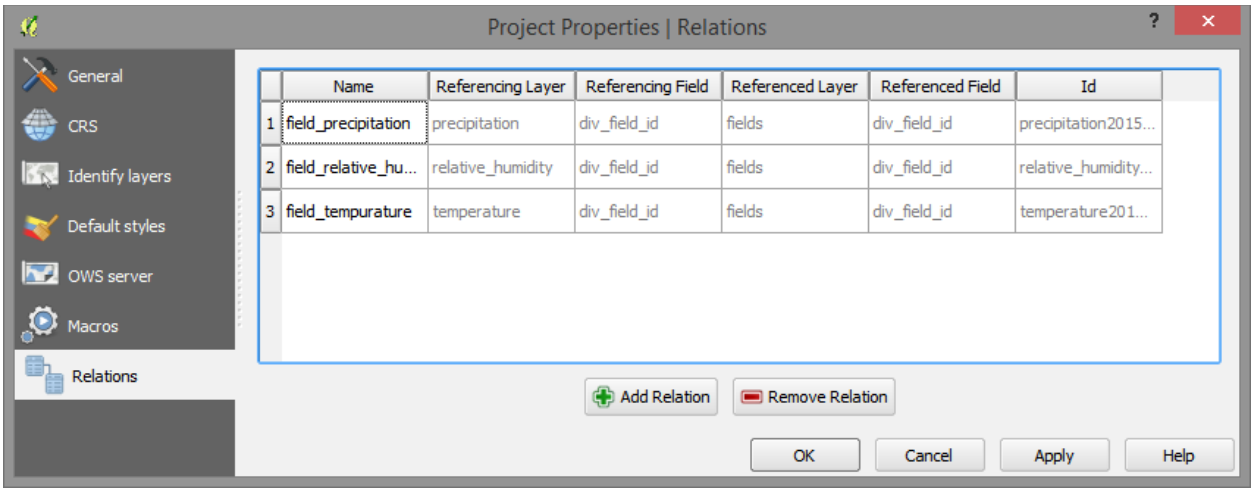
Chapter 6: Estimating Unknown Values

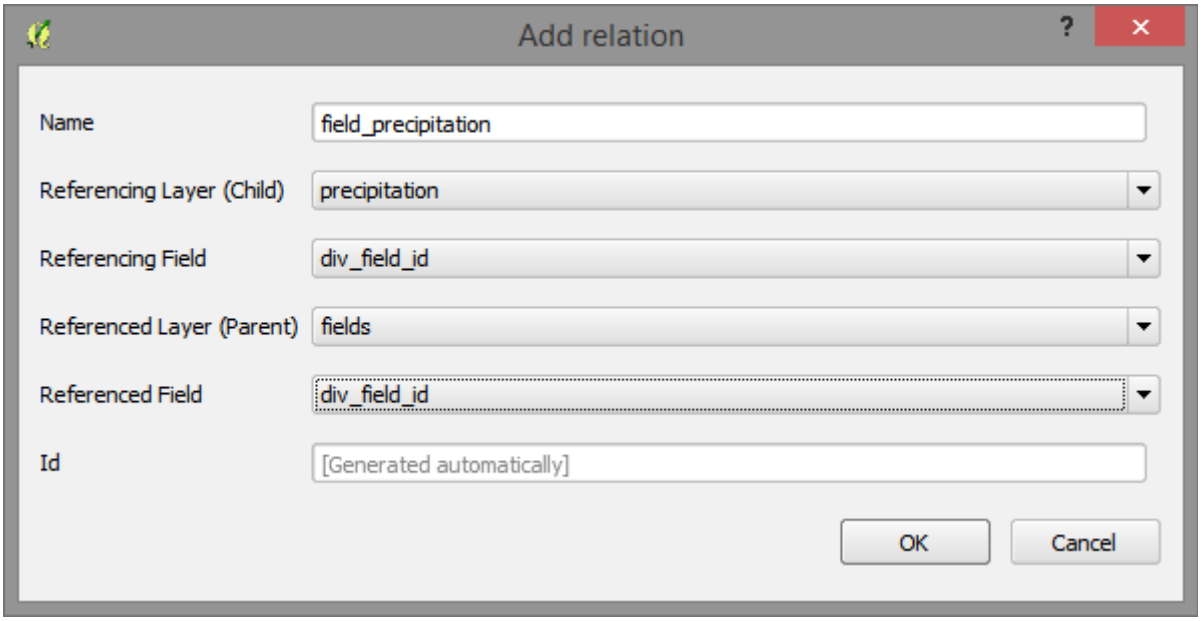

Add vector layer
Source type
File
Directory
Database
Protocol
Encoding
System
Database
Type
MySQL
Connections
packt
New
Edit
Delete
Open
Cancel
Help

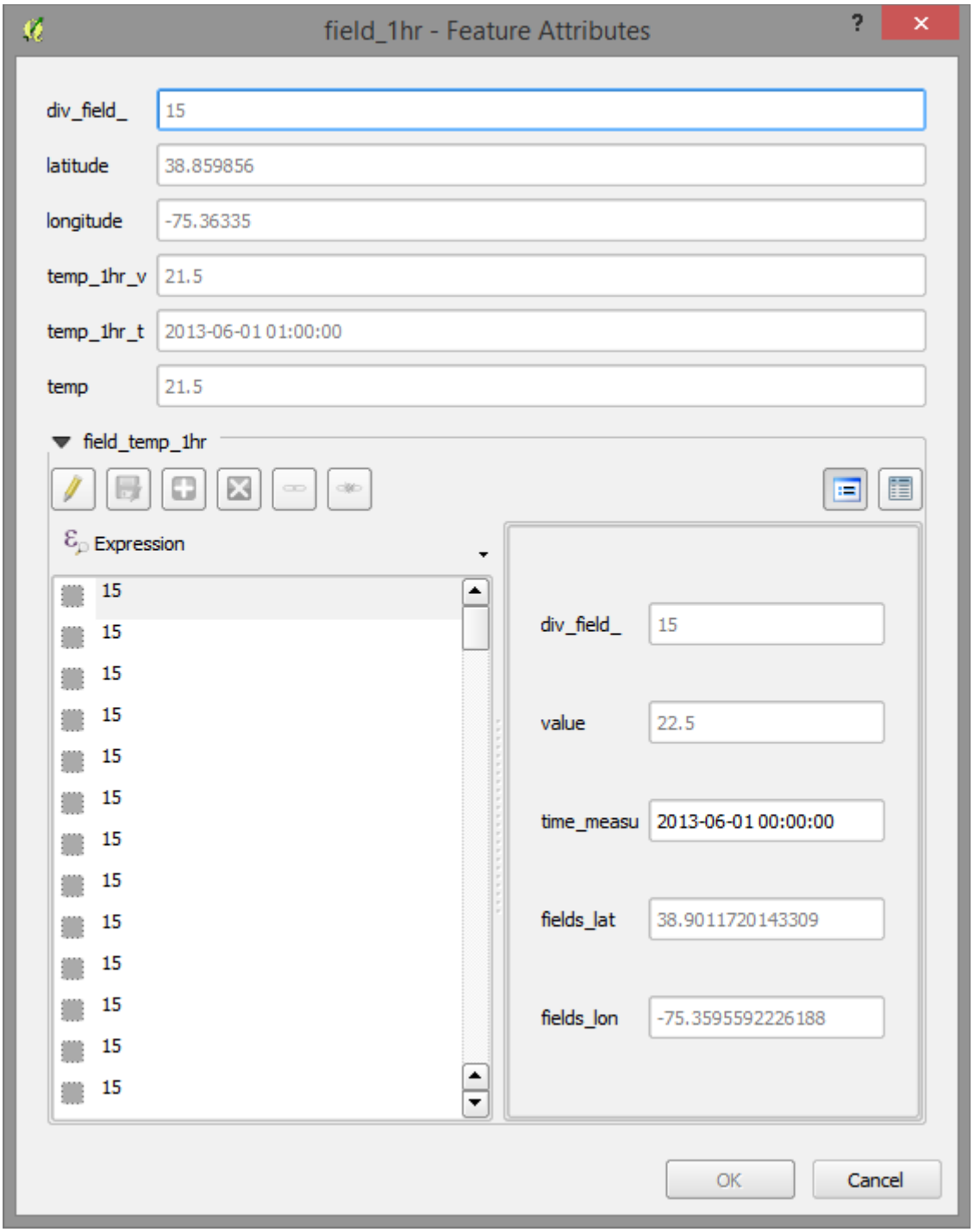

Create a New OGR Database connection
Connection Information
Type
MySQL
Name
packt
Host
localhost
Database
packt
Port
3306
Username
packt
Password
Save Password
Test Connect
OK
Cancel
Help

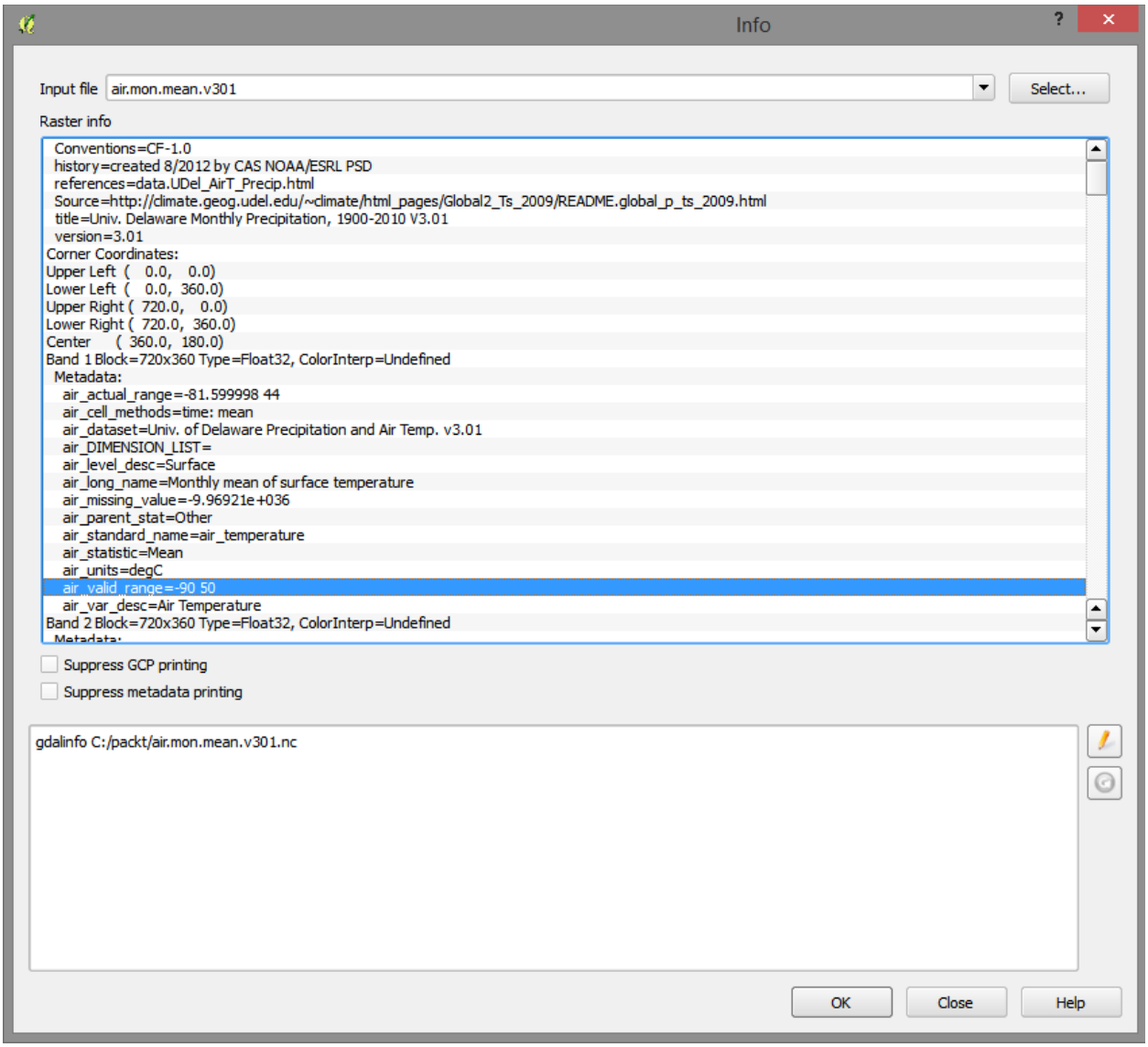

Save vector layer as...
Format
Comma Separated Value [CSV]
Save as
C:/packt/c6/output/fields.csv
Browse
CRS
Selected CRS (EPSG:4326, WGS 84)
Encoding
System
Save only selected features
Skip attribute creation
Add saved file to map
Symbology export
No symbology
Scale
1:50000
Extent (current: layer)
North
-1.7976931348623157e+308
West
1.7976931348623157e+308
East
-1.7976931348623157e+308
South
1.7976931348623157e+308
Layer extent
Map view extent
Layer Options
CREATE_CSVT
NO
GEOMETRY
<Default>
LINEFORMAT
<Default>
SEPARATOR
COMMA
WRITE_BOM
NO
Custom Options
OK
Cancel
Help

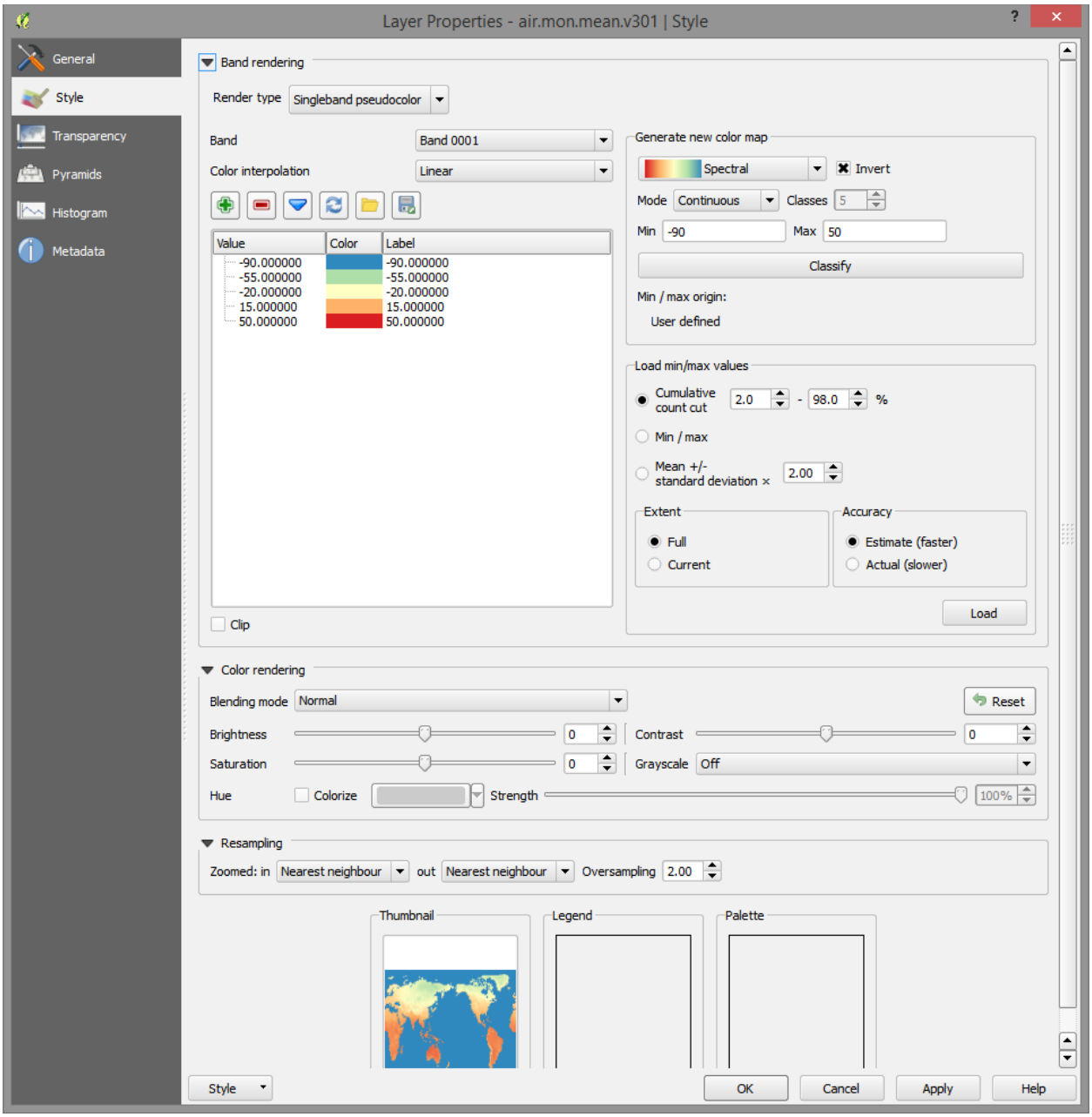

Create a Layer from a Delimited Text File
File Name
C:/packt/c6/output/fields.csv
Browse...
Layer name
fields
Encoding
UTF-8
File format
CSV (comma separated values)
Custom delimiters
Regular expression delimiter
Record options
Number of header lines to discard
0
First record has field names
Field options
Trim fields
Discard empty fields
Decimal separator is comma
Geometry definition
Point coordinates
Well known text (WKT)
No geometry (attribute only table)
X field
longitude
Y field
latitude
DMS coordinates
Layer settings
Use spatial index
Use subset index
Watch file
field_id latitude longitude
1 2 38.758933 -75.177550
2 15 38.859856 -75.363350
3 20 38.861892 -75.406908
4 34 39.043203 -75.509019
5 49 38.771497 -75.914956
OK
Cancel
Help

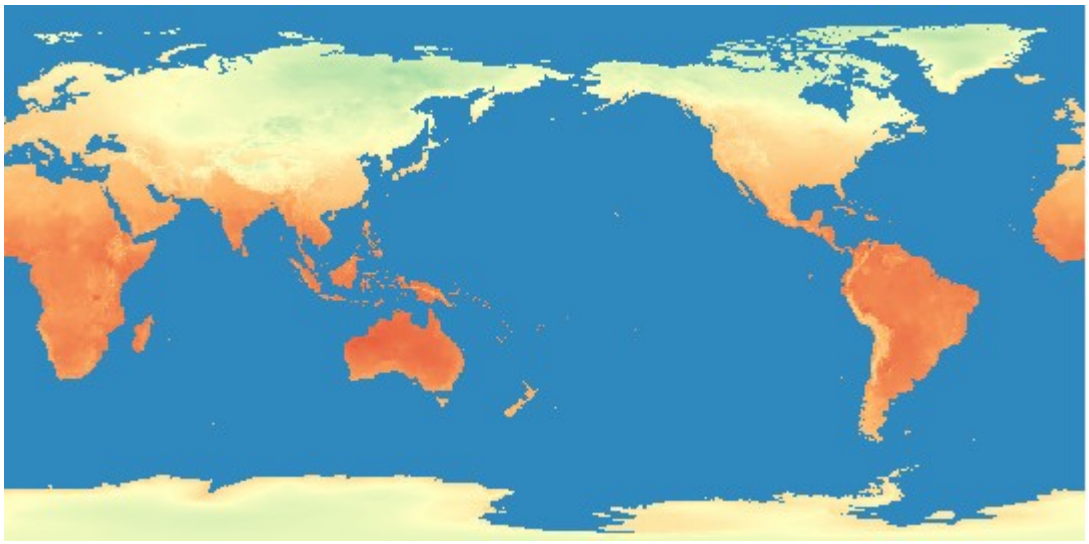

Project Properties | Relations
General
CRS
Identify layers
Default styles
OWS server
Macros
Relations
Name
Referencing Layer
Referencing Field
Referenced Layer
Referenced Field
Id
1 field_precipitation precipitation div_field_id fields div_field_id precipitation2015...
2 field_relative_hu... relative_humidity div_field_id fields div_field_id relative_humidity...
3 field_tempurature temperature div_field_id fields div_field_id temperature201...
Add Relation
Remove Relation
OK
Cancel
Apply
Help

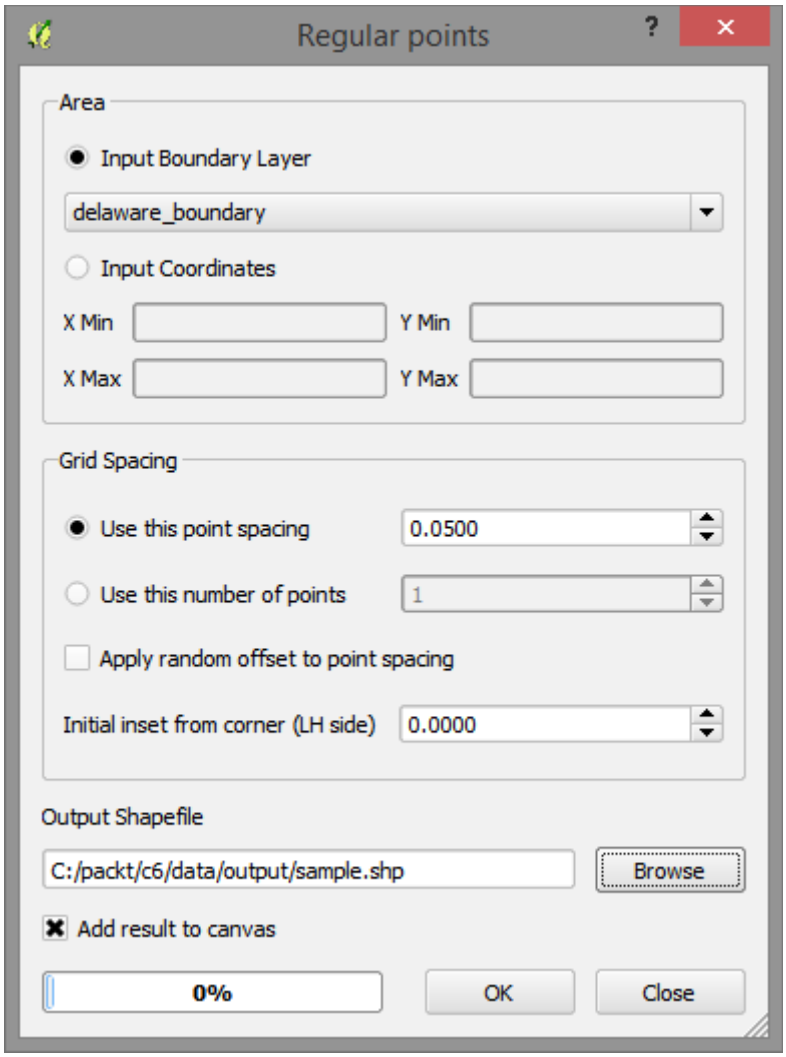

Add relation
Name
field_precipitation
Referencing Layer (Child)
precipitation
Referencing Field
div_field_id
Referenced Layer (Parent)
fields
Referenced Field
div_field_id
Id
[Generated automatically]
OK
Cancel

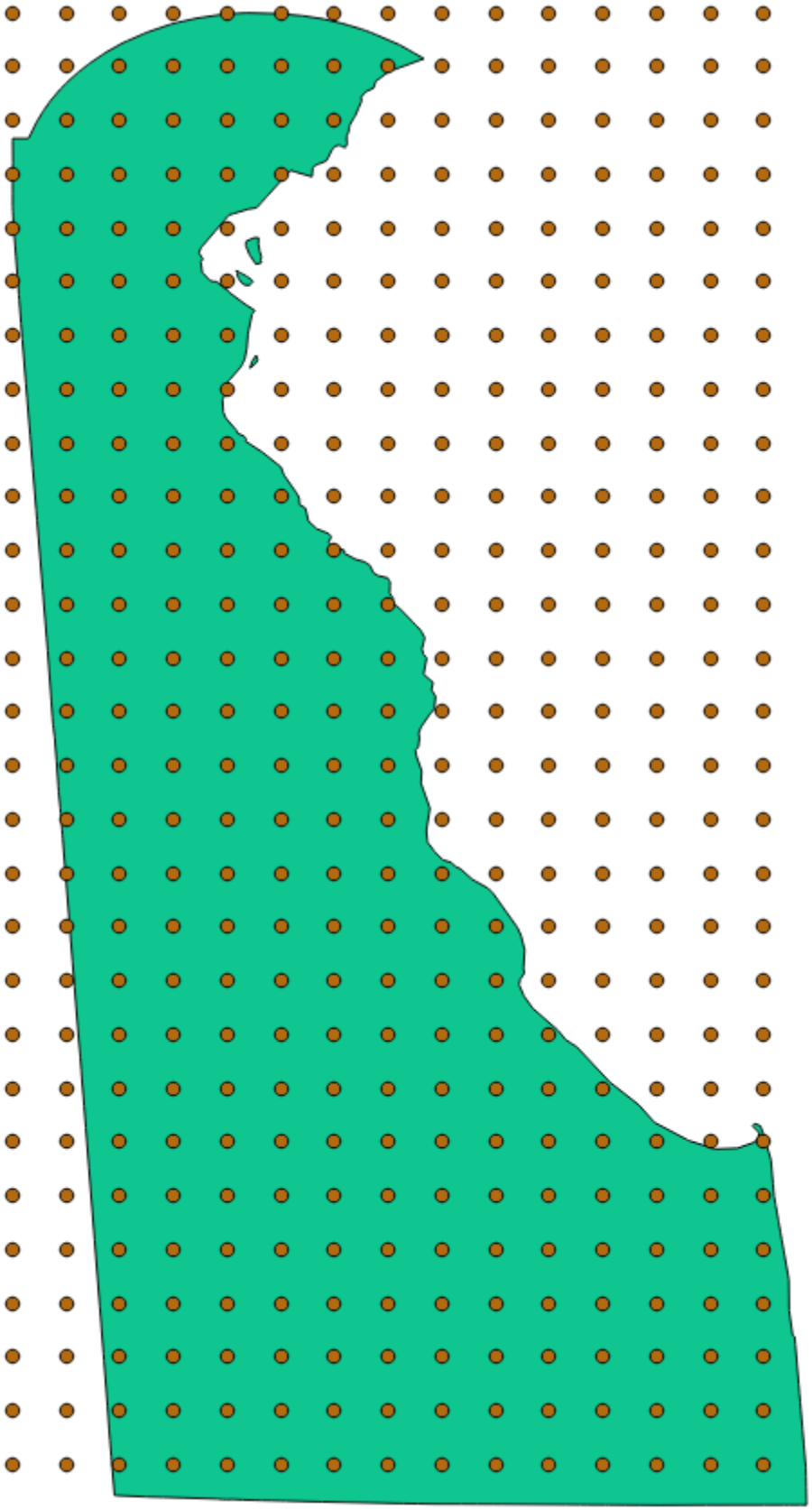

field_1hr - Feature Attributes
div_field_
15
latitude
38.859856
longitude
-75.36335
temp_1hr_v
21.5
temp_1hr_t
2013-06-01 01:00:00
temp
21.5
field_temp_1hr
Expression
15
15
15
15
15
15
15
15
15
15
15
15
15
15
div_field_
15
value
22.5
time_measu
2013-06-01 00:00:00
fields_lat
38.9011720143309
fields_lon
-75.3595592226188
OK
Cancel

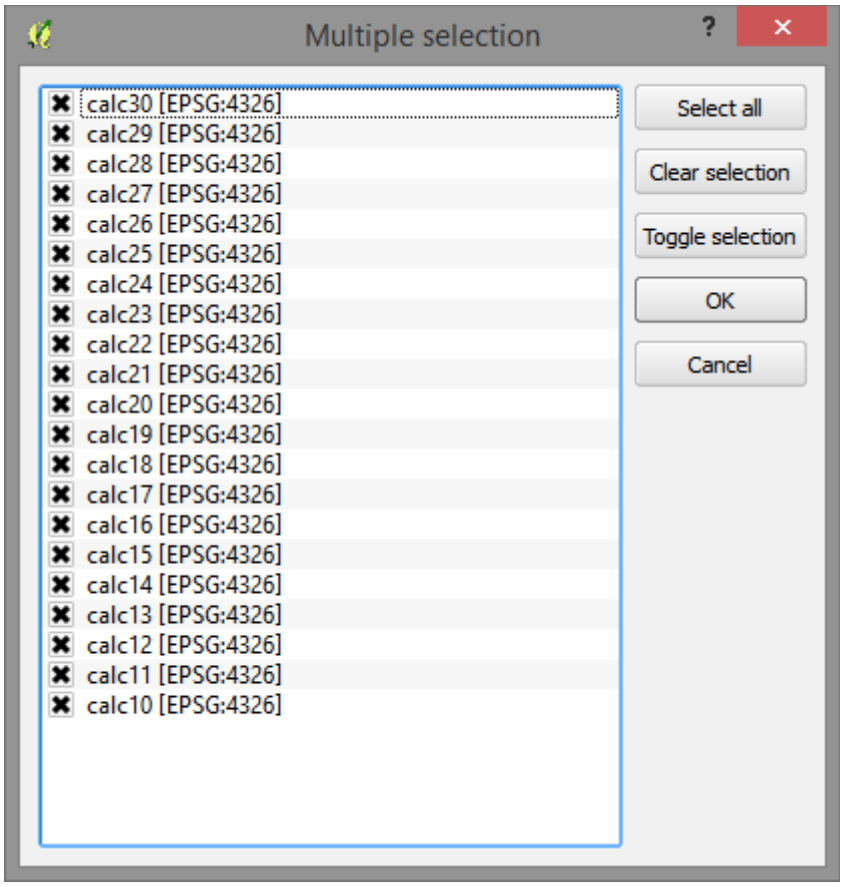

Info
Input file
air.mon.mean.v301
Select...
Raster info
Conventions=CF-1.0
history=created 8/2012 by CAS NOAA/ESRL PSD
references=data.UDel_AirT_Precip.html
Source=http://climate.geog.udel.edu/~climate/html_pages/Global2_Ts_2009/README.global_p_ts_2009.html
title=Univ. Delaware Monthly Precipitation, 1900-2010 V3.01
version=3.01
Corner Coordinates:
Upper Left (0.0, 0.0)
Lower Left (0.0, 360.0)
Upper Right (720.0, 0.0)
Lower Right (720.0, 360.0)
Center (360.0, 180.0)
Band 1 Block=720x360 Type=Float32, ColorInterp=Undefined
Metadata:
air_actual_range=-81.599998 44
air_cell_methods=time: mean
air_dataset=Univ. of Delaware Precipitation and Air Temp. v3.01
air_DIMENSION_LIST=
air_level_desc=Surface
air_long_name=Monthly mean of surface temperature
air_missing_value=-9.96921e+036
air_parent_stat=Other
air_standard_name=air_temperature
air_statistic=Mean
air_units=degC
air_valid_range=-90 50
air_var_desc=Air Temperature
Band 2 Block=720x360 Type=Float32, ColorInterp=Undefined
Suppress GCP printing
Suppress metadata printing
gdalinfo C:/packt/air.mon.mean.v301.nc
OK
Close
Help

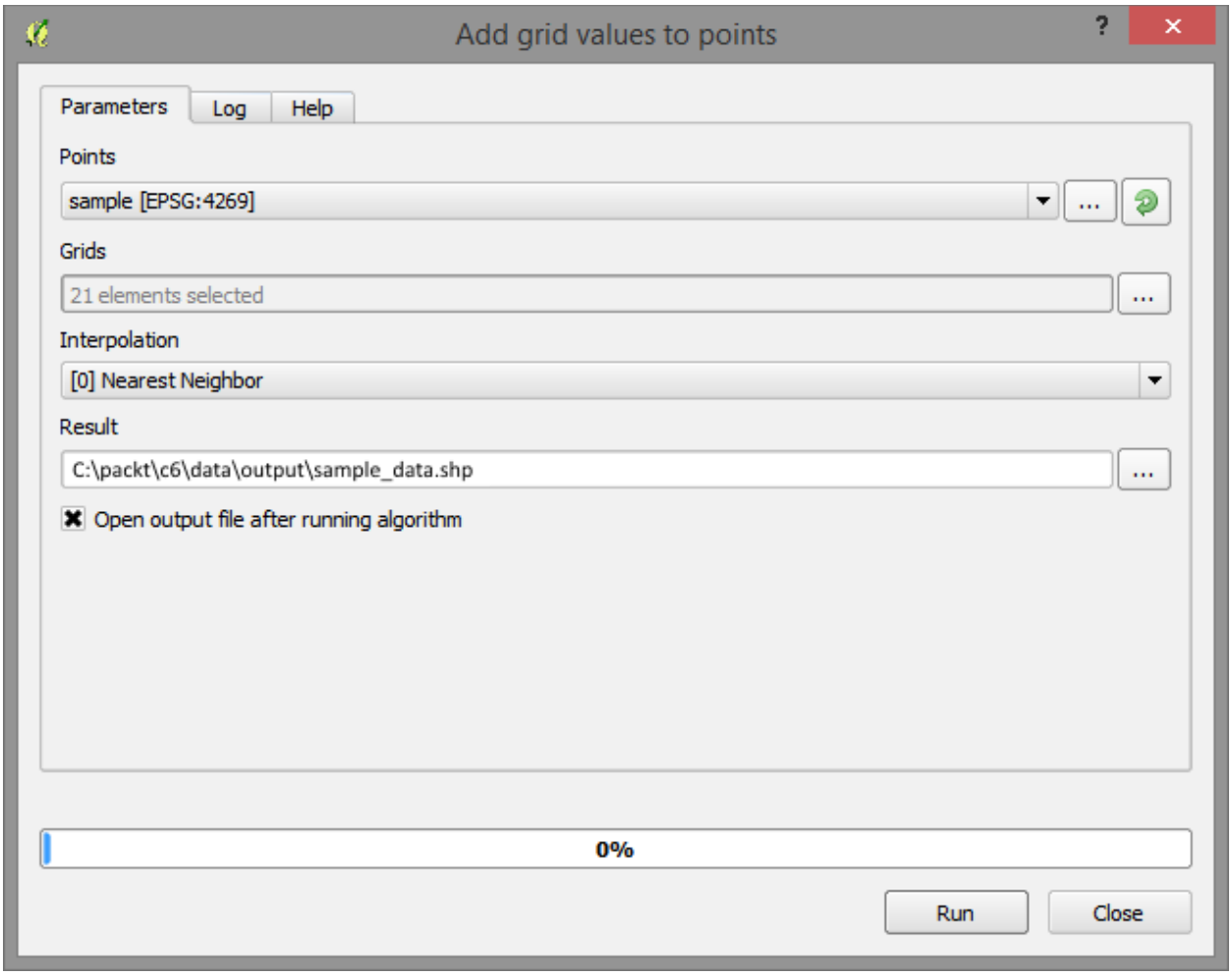

Layer Properties - air.mon.mean.v301 | Style
General
Style
Transparency
Pyramids
Histogram
Metadata
Band rendering
Render type
Singleband pseudocolor
Band
Band 0001
Color interpolation
Linear
Value
Color
Label
-90.000000
-55.000000
-20.000000
15.000000
50.000000
Clip
Generate new color map
Spectral
Invert
Mode
Continuous
Classes
5
Min
-90
Max
50
Classify
Min / max origin:
User defined
Load min/max values
Cumulative count cut
2.0
98.0
%
Min / max
Mean +/- standard deviation ×
2.00
Extent
Full
Current
Accuracy
Estimate (faster)
Actual (slower)
Load
Color rendering
Blending mode
Normal
Reset
Brightness
Contrast
Saturation
Grayscale
Off
Hue
Colorize
Strength
100%
Resampling
Zoomed: in
Nearest neighbour
out
Nearest neighbour
Oversampling
2.00
Thumbnail
Legend
Palette
Style
OK
Cancel
Apply
Help

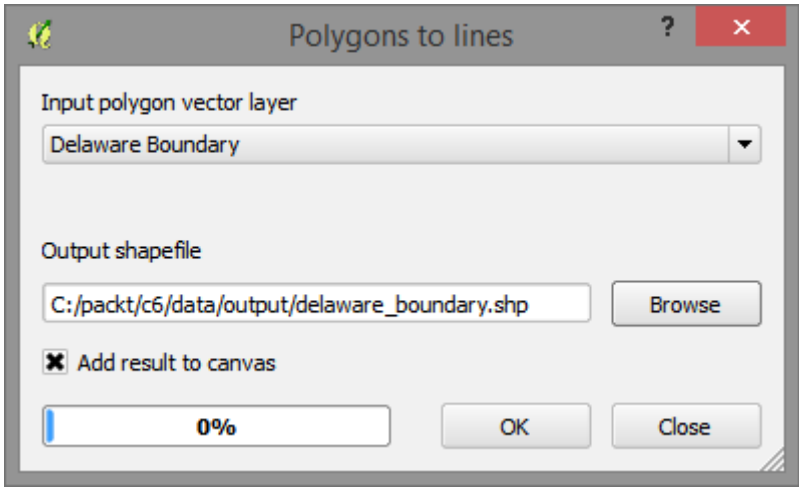


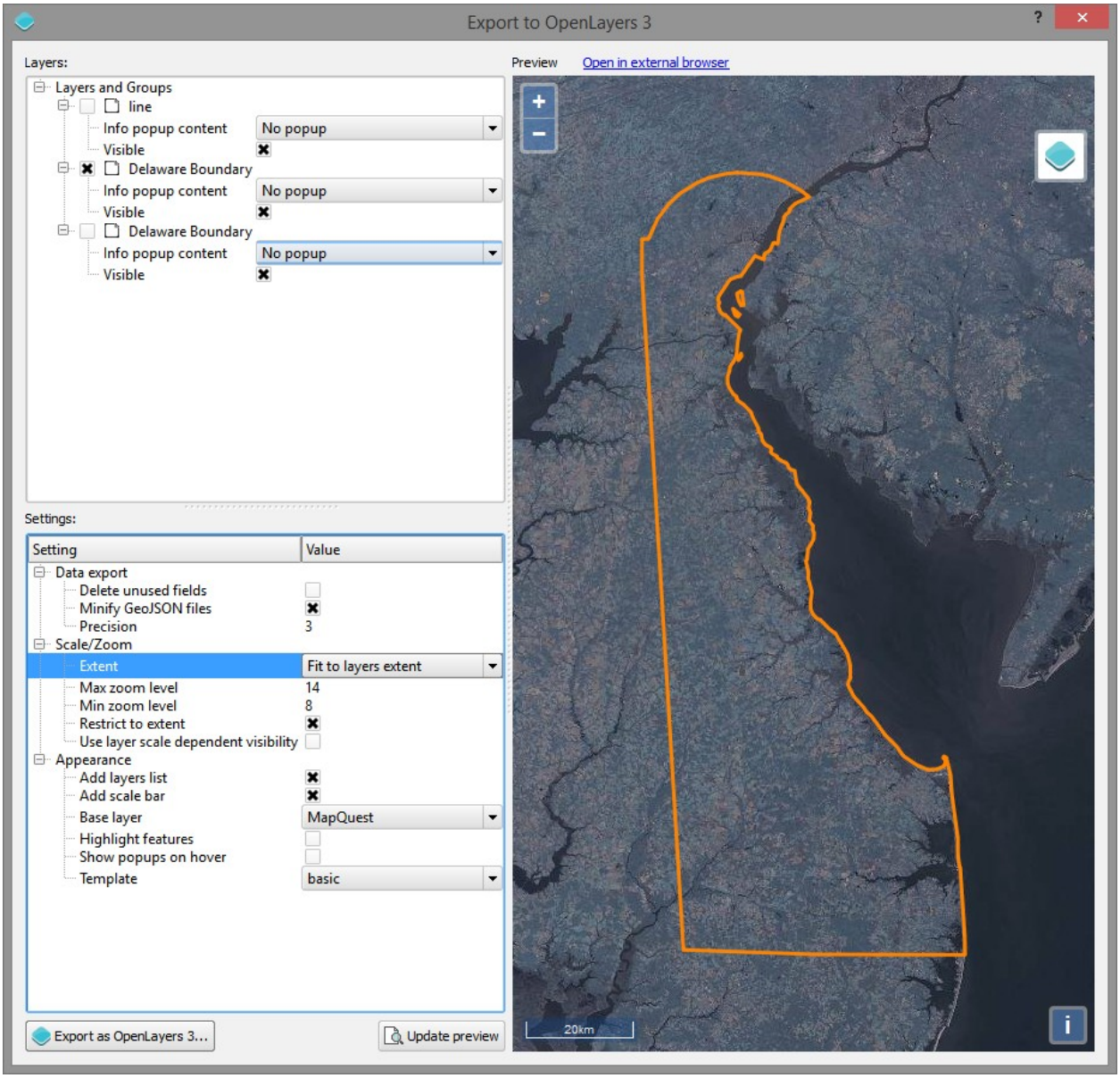

Regular points
Area
Input Boundary Layer
delaware_boundary
Input Coordinates
X Min
Y Min
X Max
Y Max
Grid Spacing
Use this point spacing
0.0500
Use this number of points
1
Apply random offset to point spacing
Initial inset from corner (LH side)
0.0000
Output Shapefile
C:/packt/c6/data/output/sample.shp
Browse
Add result to canvas
0%
OK
Close

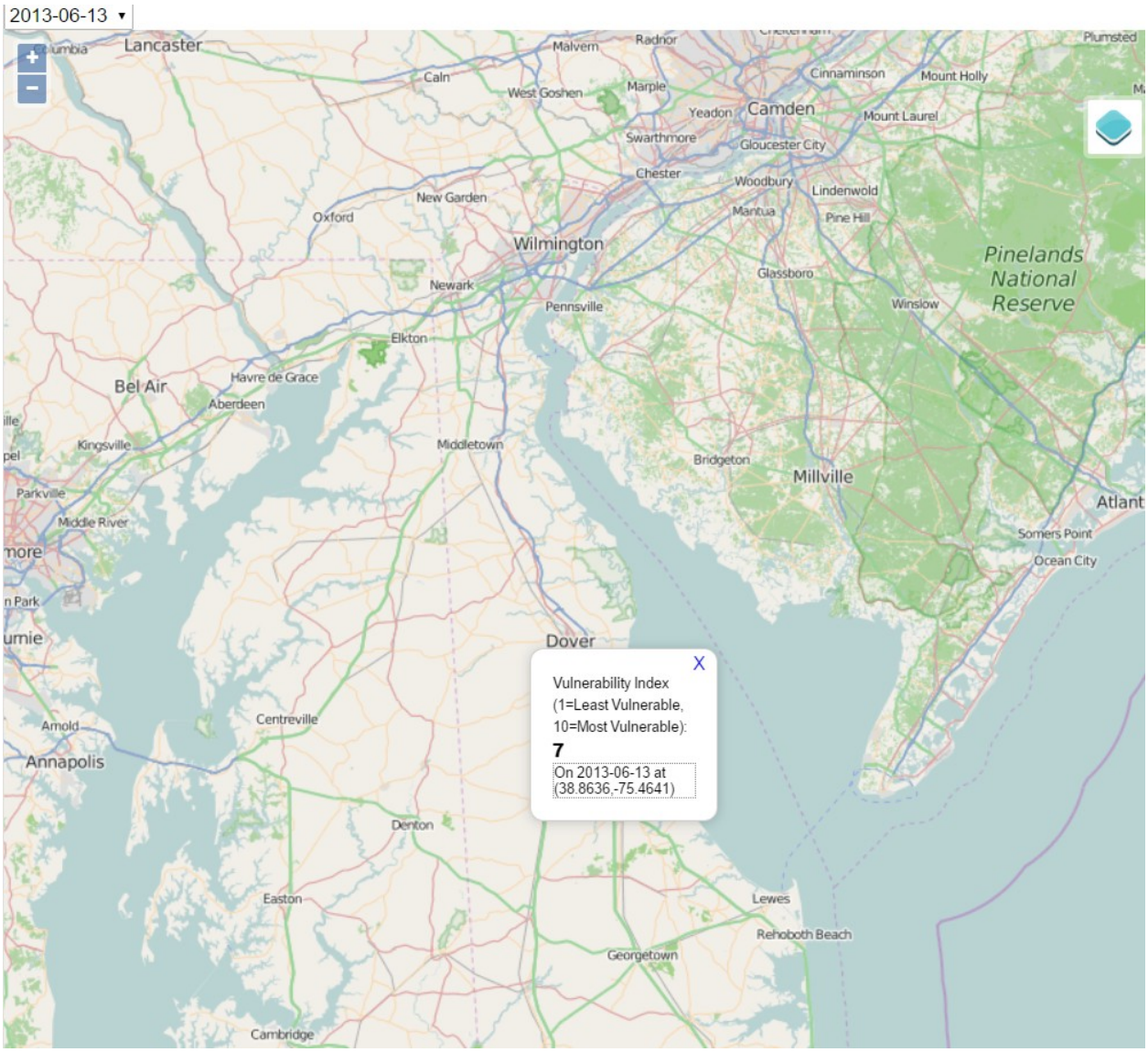



Multiple selection
calc30 [EPSG:4326]
calc29 [EPSG:4326]
calc28 [EPSG:4326]
calc27 [EPSG:4326]
calc26 [EPSG:4326]
calc25 [EPSG:4326]
calc24 [EPSG:4326]
calc23 [EPSG:4326]
calc22 [EPSG:4326]
calc21 [EPSG:4326]
calc20 [EPSG:4326]
calc19 [EPSG:4326]
calc18 [EPSG:4326]
calc17 [EPSG:4326]
calc16 [EPSG:4326]
calc15 [EPSG:4326]
calc14 [EPSG:4326]
calc13 [EPSG:4326]
calc12 [EPSG:4326]
calc11 [EPSG:4326]
calc10 [EPSG:4326]
Select all
Clear selection
Toggle selection
OK
Cancel

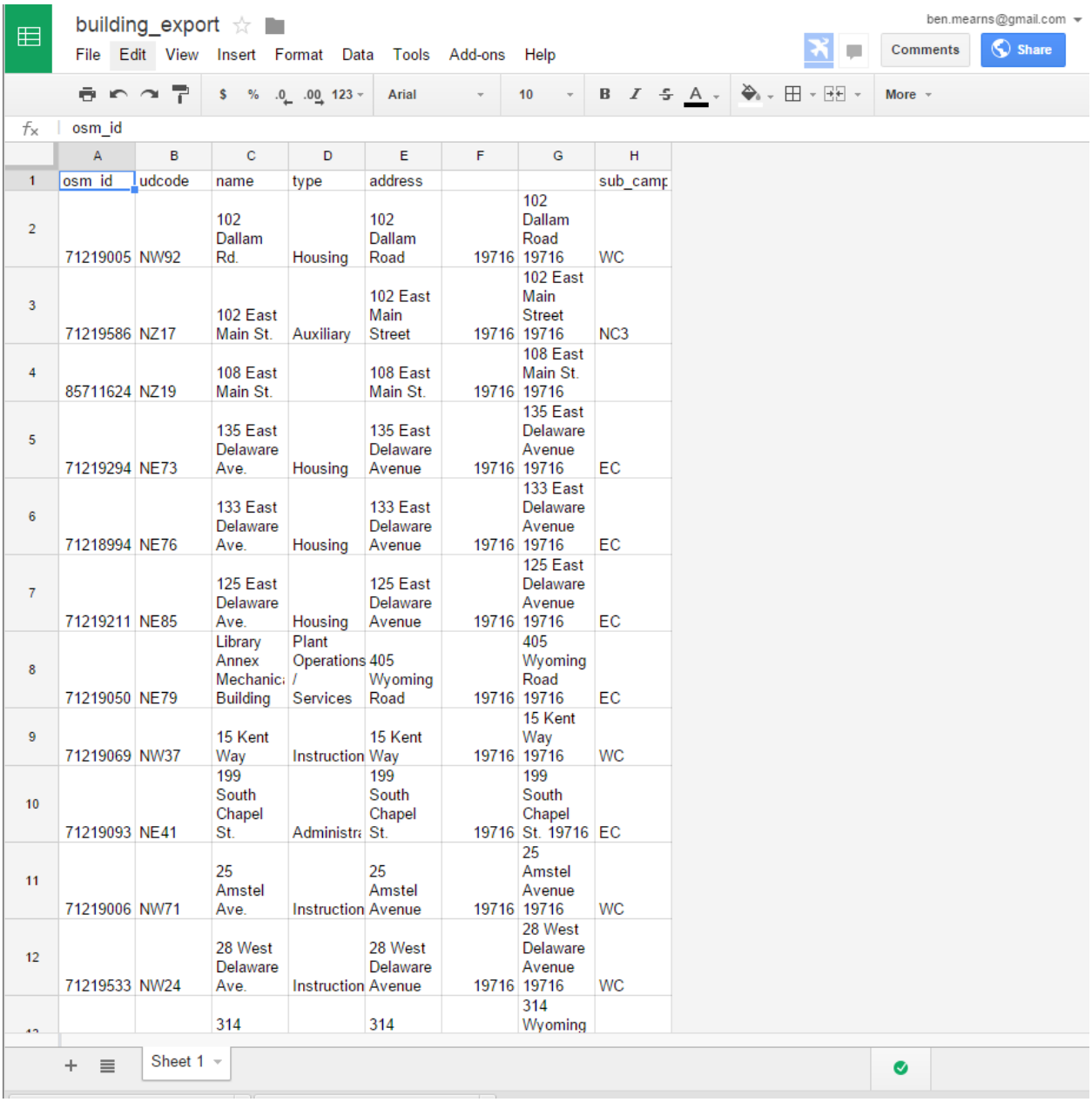

Add grid values to points
Parameters
Log
Help
Points
sample [EPSG:4269]
Grids
21 elements selected
Interpolation
[0] Nearest Neighbor
Result
C:\packt\c6\data\output\sample_data.shp
Open output file after running algorithm
0%
Run
Close


Polygons to lines
Input polygon vector layer
Delaware Boundary
Output shapefile
C:/packt/c6/data/output/delaware_boundary.shp
Browse
Add result to canvas
0%
OK
Close

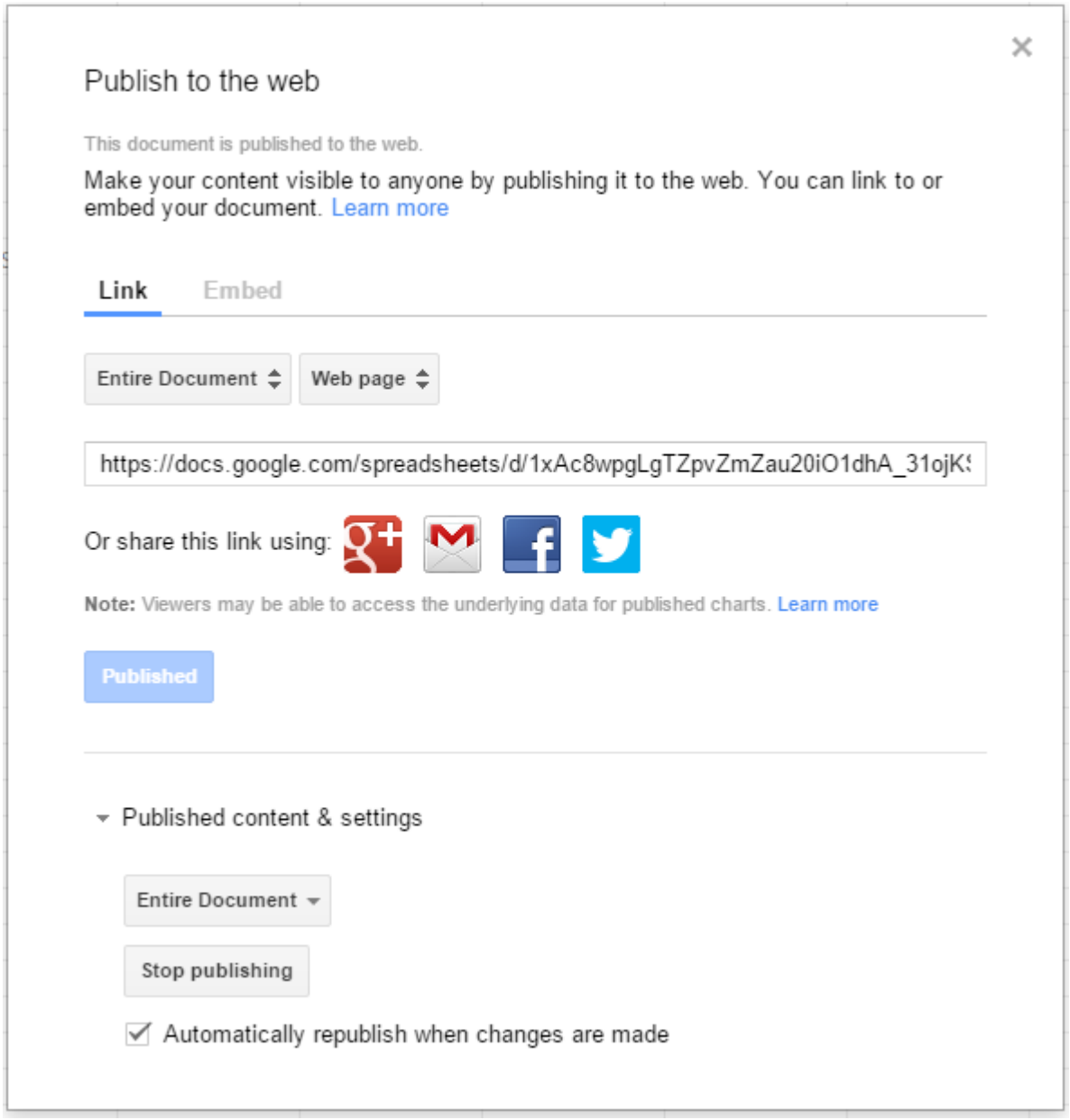

Export to OpenLayers 3
Layers:
Layers and Groups
line
Info popup content
No popup
Visible
Delaware Boundary
Info popup content
No popup
Visible
Delaware Boundary
Info popup content
No popup
Visible
Settings:
Setting
Value
Data export
Delete unused fields
Minify GeoJSON files
Precision
3
Scale/Zoom
Extent
Fit to layers extent
Max zoom level
14
Min zoom level
8
Restrict to extent
Use layer scale dependent visibility
Appearance
Add layers list
Add scale bar
Base layer
MapQuest
Highlight features
Show popups on hover
Template
basic
Export as OpenLayers 3...
Update preview
Preview
Open in external browser
20km



Chapter 7: Mapping for Enterprises and Communities



	A	B	C	D	E	F	G	H
1	osm_id	udcode	name	type	address			sub_camp
2	71219005	NW92	102 Dallam Rd.	Housing	102 Dallam Road	19716	102 Dallam Road 19716	WC
3	71219586	NZ17	102 East Main St.	Auxiliary	102 East Main Street	19716	102 East Main Street 19716	NC3
4	85711624	NZ19	108 East Main St.		108 East Main St.	19716	108 East Main St. 19716	
5	71219294	NE73	135 East Delaware Ave.	Housing	135 East Delaware Avenue	19716	135 East Delaware Avenue 19716	EC
6	71218994	NE76	133 East Delaware Ave.	Housing	133 East Delaware Avenue	19716	133 East Delaware Avenue 19716	EC
7	71219211	NE85	125 East Delaware Ave.	Housing	125 East Delaware Avenue	19716	125 East Delaware Avenue 19716	EC
8	71219050	NE79	Library Annex Mechanic Building	Plant Operations / Services	405 Wyoming Road	19716	405 Wyoming Road 19716	EC
9	71219069	NW37	15 Kent Way	Instruction	15 Kent Way	19716	15 Kent Way 19716	WC
10	71219093	NE41	199 South Chapel St.	Administra	199 South Chapel St.	19716	199 South Chapel St. 19716	EC
11	71219006	NW71	25 Amstel Ave.	Instruction	25 Amstel Avenue	19716	25 Amstel Avenue 19716	WC
12	71219533	NW24	28 West Delaware Ave.	Instruction	28 West Delaware Avenue	19716	28 West Delaware Avenue 19716	WC
13			314		314		314 Wyoming	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Christiana East Tower

Residence Hall

77 East Main St.

Instruction

Kirkbride Lecture Hall

Instruction

Purnell Hall

Instruction

Munroe Hall

Instruction

Rodney Commons A/B

Student Activities

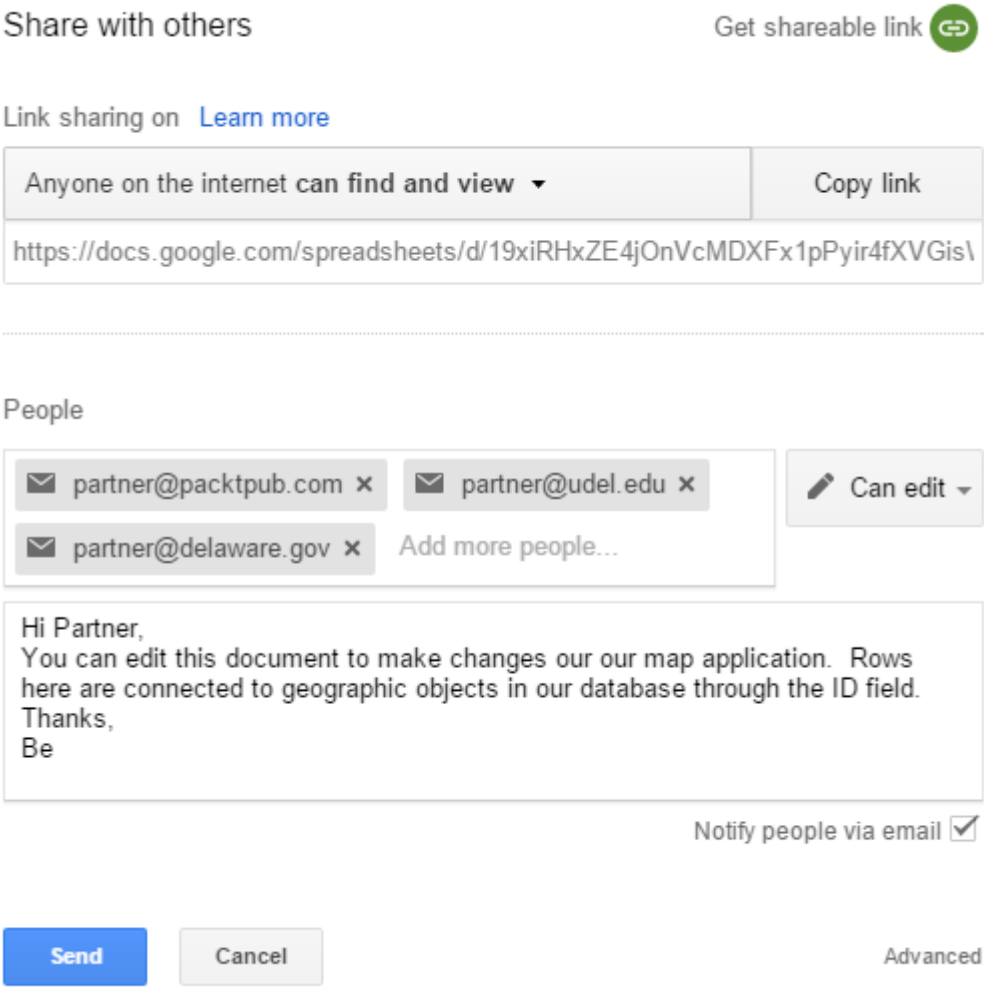
Rodney Hall C

Residence Hall

Rodney Dining Hall

Dining Hall

Fred Rust Ice Arena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Google Sheets: Create and edit spreadsheets online.

Google

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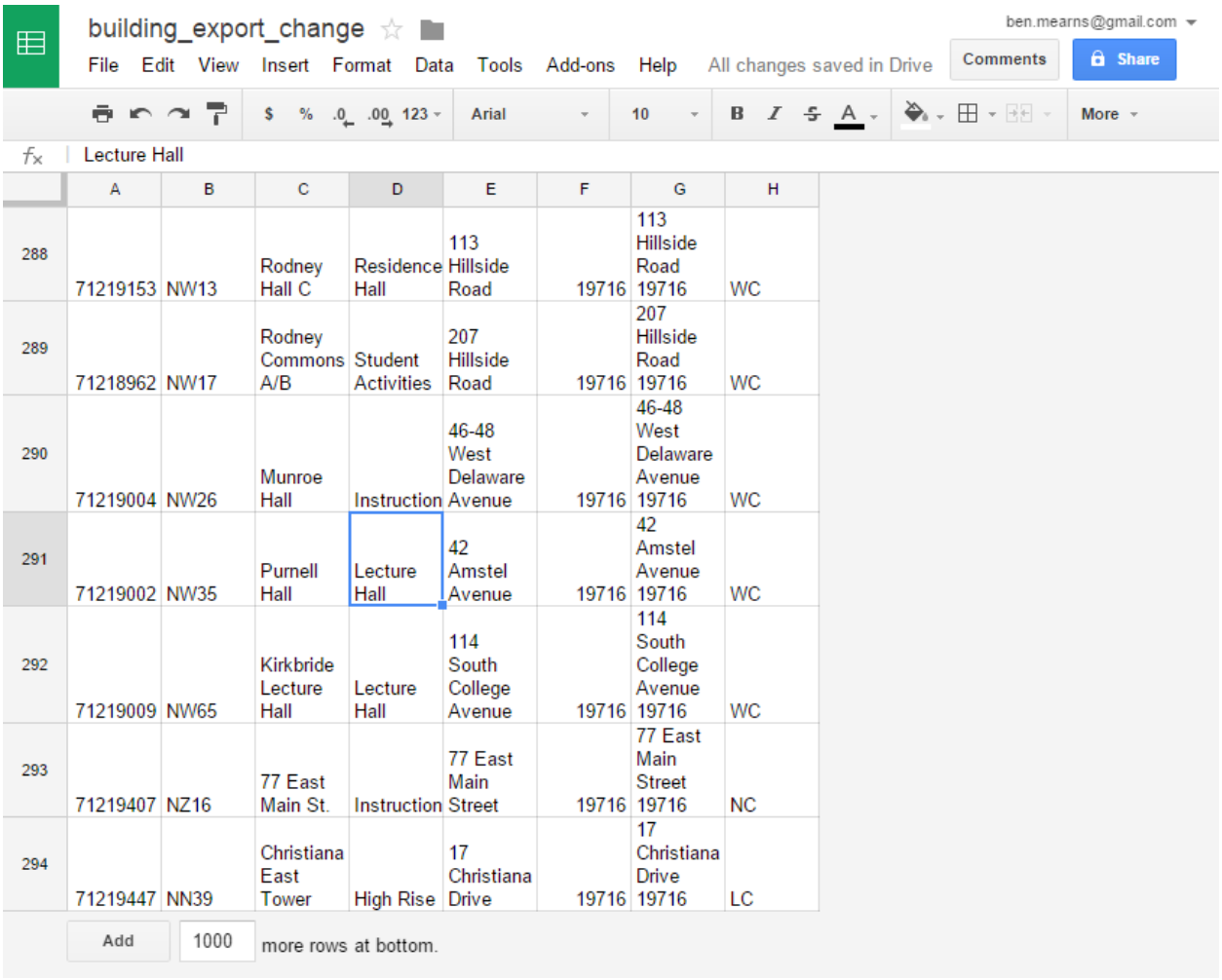
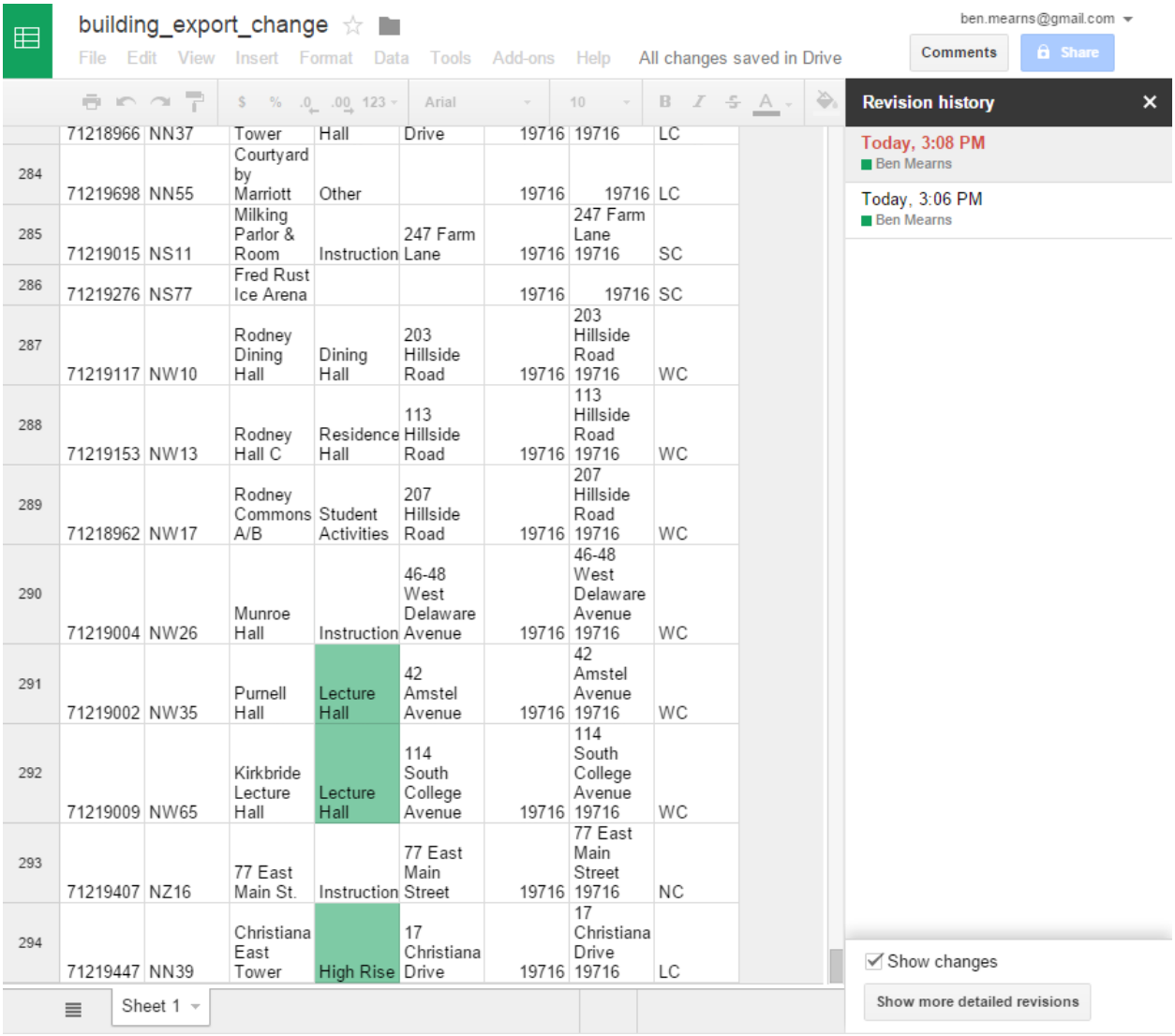


	A	B	C	D	E	F	G	H
288	71219153	NW13	Rodney Hall C	Residence Hall	113 Hillside Road	19716	113 Hillside Road 19716	WC
289	71218962	NW17	Rodney Commons A/B	Student Activities	207 Hillside Road	19716	207 Hillside Road 19716	WC
290	71219004	NW26	Munroe Hall	Instruction	46-48 West Delaware Avenue	19716	46-48 West Delaware Avenue 19716	WC
291	71219002	NW35	Purnell Hall	Lecture Hall	42 Amstel Avenue	19716	42 Amstel Avenue 19716	WC
292	71219009	NW65	Kirkbride Lecture Hall	Lecture Hall	114 South College Avenue	19716	114 South College Avenue 19716	WC
293	71219407	NZ16	77 East Main St.	Instruction	77 East Main Street	19716	77 East Main Street 19716	NC
294	71219447	NN39	Christiana East Tower	High Rise	17 Christiana Drive	19716	17 Christiana Drive 19716	LC

Add 1000 more rows at bottom.



	71218966	NN37	Tower	Hall	Drive	19716	19716	LC
284	71219698	NN55	Courtyard by Marriott	Other		19716	19716	LC
285	71219015	NS11	Milking Parlor & Room	Instruction	247 Farm Lane	19716	247 Farm Lane 19716	SC
286	71219276	NS77	Fred Rust Ice Arena			19716	19716	SC
287	71219117	NW10	Rodney Dining Hall	Dining Hall	203 Hillside Road	19716	203 Hillside Road 19716	WC
288	71219153	NW13	Rodney Hall C	Residence Hall	113 Hillside Road	19716	113 Hillside Road 19716	WC
289	71218962	NW17	Rodney Commons A/B	Student Activities	207 Hillside Road	19716	207 Hillside Road 19716	WC
290	71219004	NW26	Munroe Hall	Instruction	46-48 West Delaware Avenue	19716	46-48 West Delaware Avenue 19716	WC
291	71219002	NW35	Purnell Hall	Lecture Hall	42 Amstel Avenue	19716	42 Amstel Avenue 19716	WC
292	71219009	NW65	Kirkbride Lecture Hall	Lecture Hall	114 South College Avenue	19716	114 South College Avenue 19716	WC
293	71219407	NZ16	77 East Main St.	Instruction	77 East Main Street	19716	77 East Main Street 19716	NC
294	71219447	NN39	Christiana East Tower	High Rise	17 Christiana Drive	19716	17 Christiana Drive 19716	LC


Revision history
Today, 3:08 PM
Ben Mearns
Today, 3:06 PM
Ben Mearns
Restore this revision
Show changes
Show more detailed revisions

Christiana East Tower

High Rise

77 East Main St.

Instruction

Kirkbride Lecture Hall

Lecture Hall

Purnell Hall

Lecture Hall

Munroe Hall

Instruction

Rodney Commons A/B

Student Activities

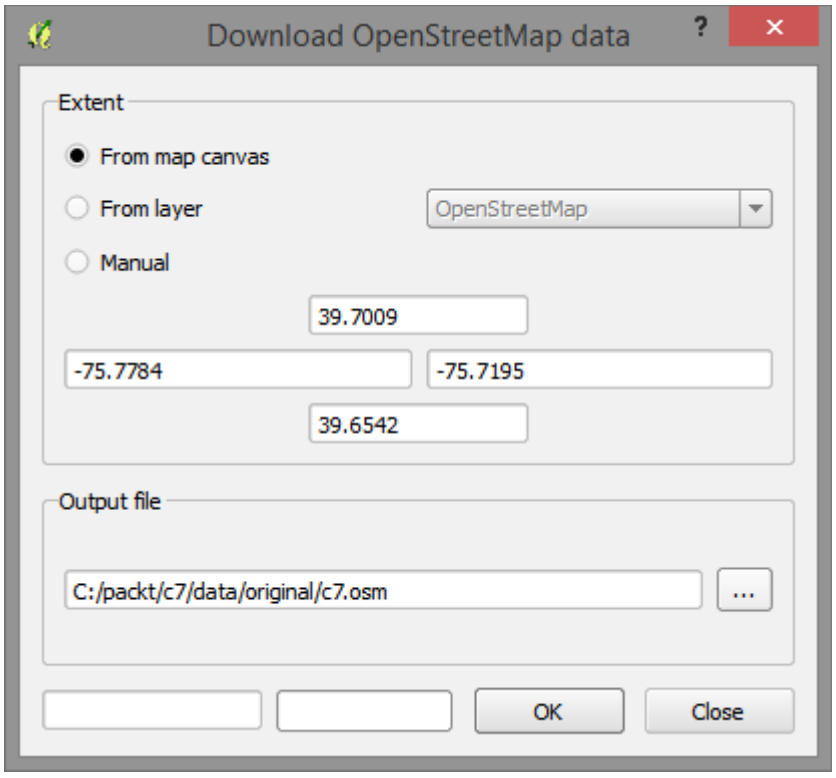
Rodney Hall C

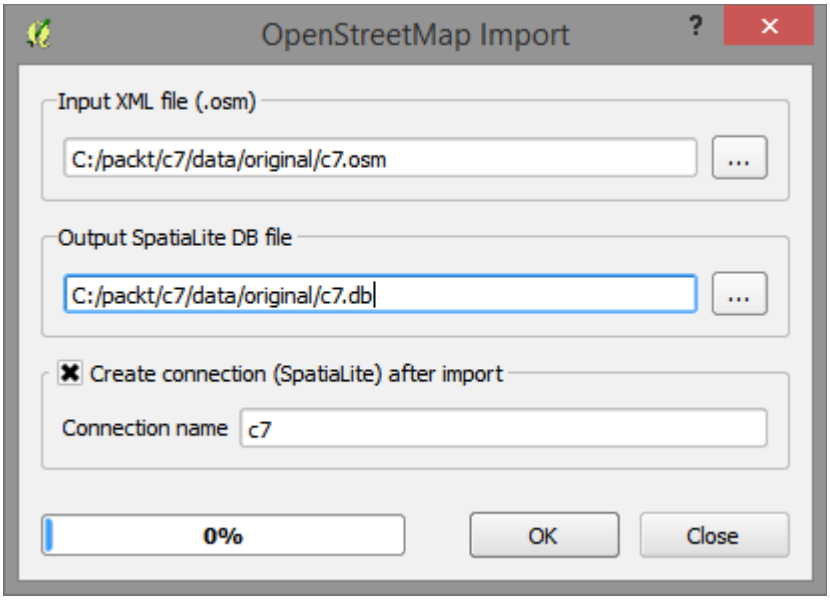
Residence Hall

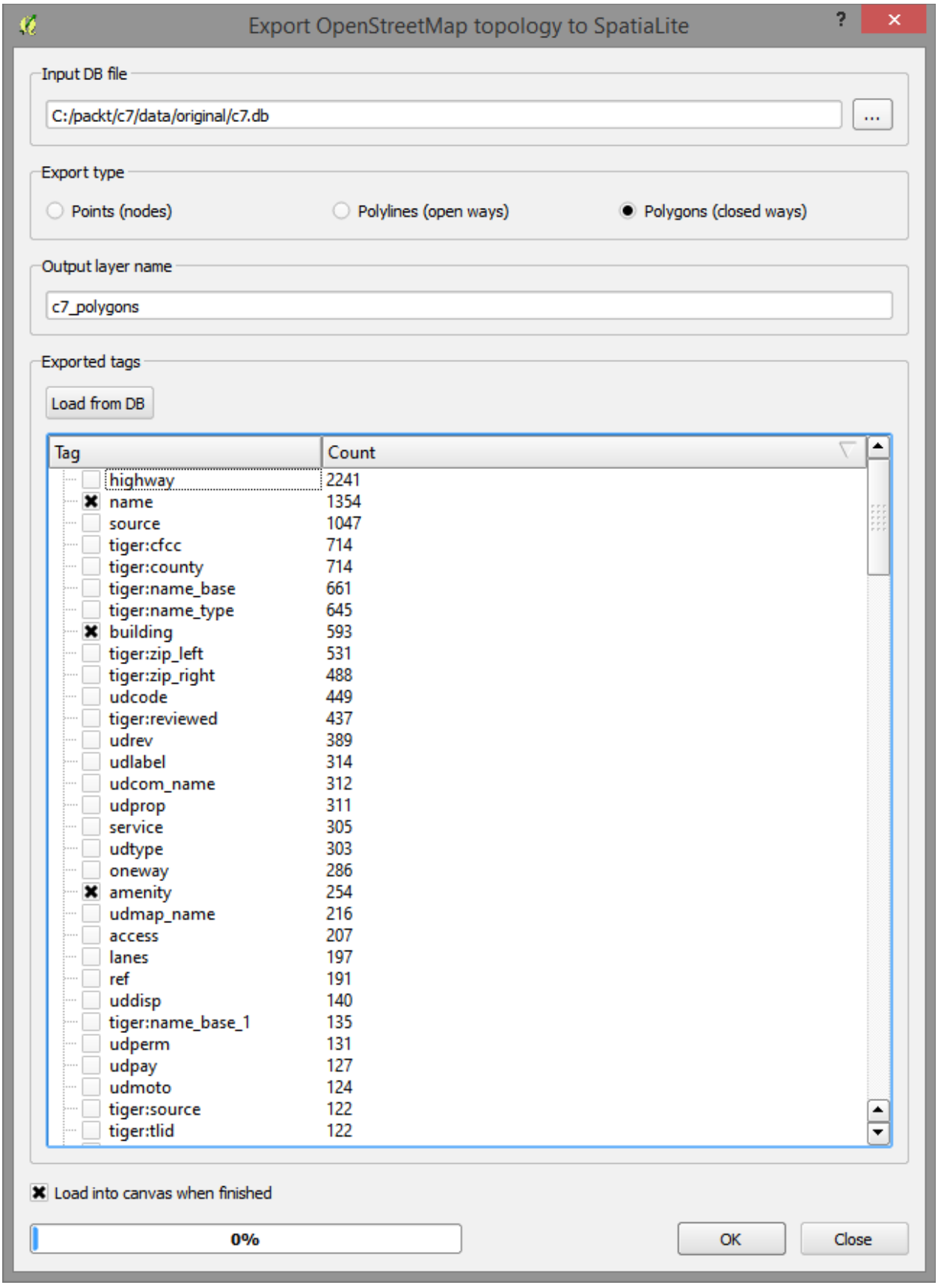
Rodney Dining Hall

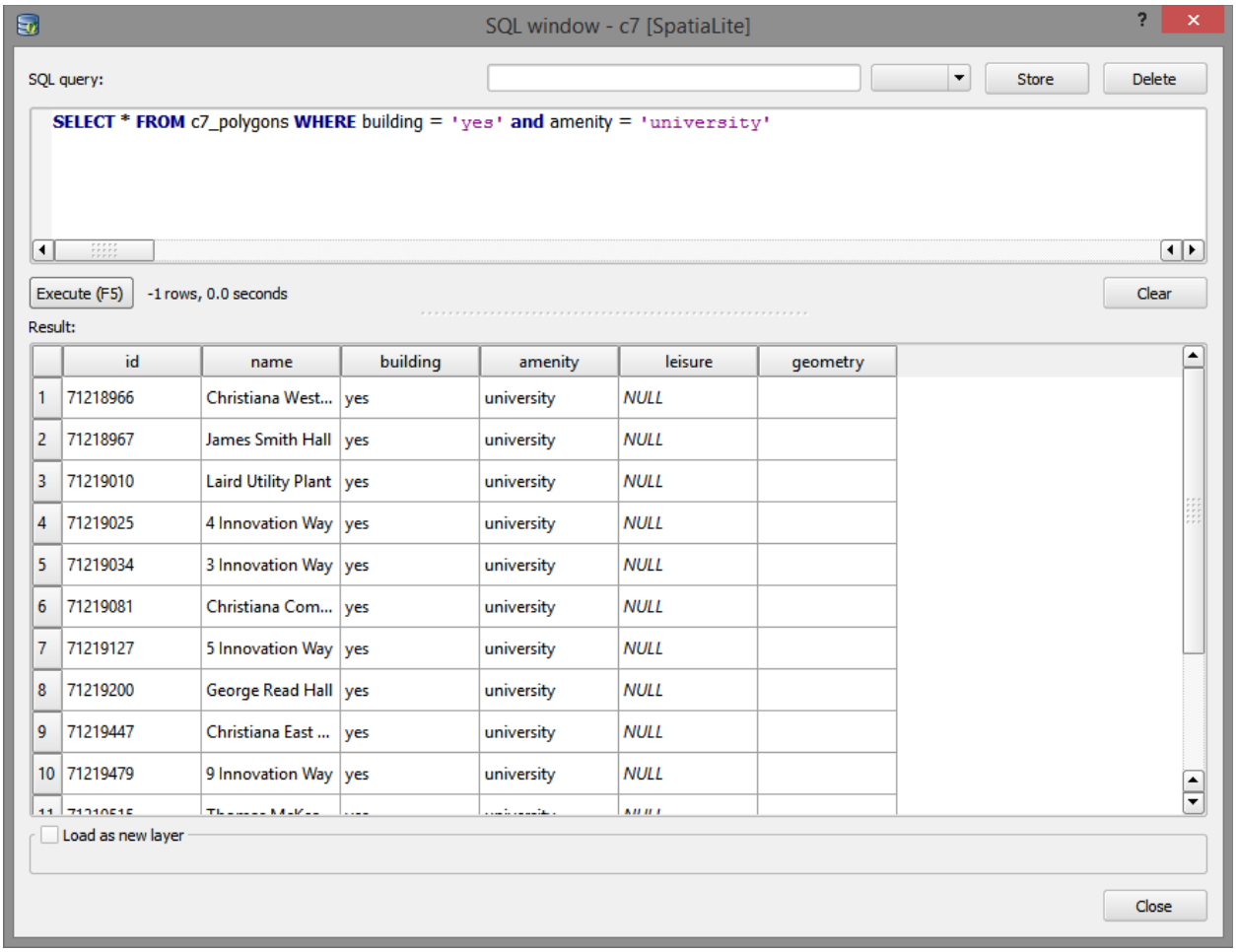
Dining Hall

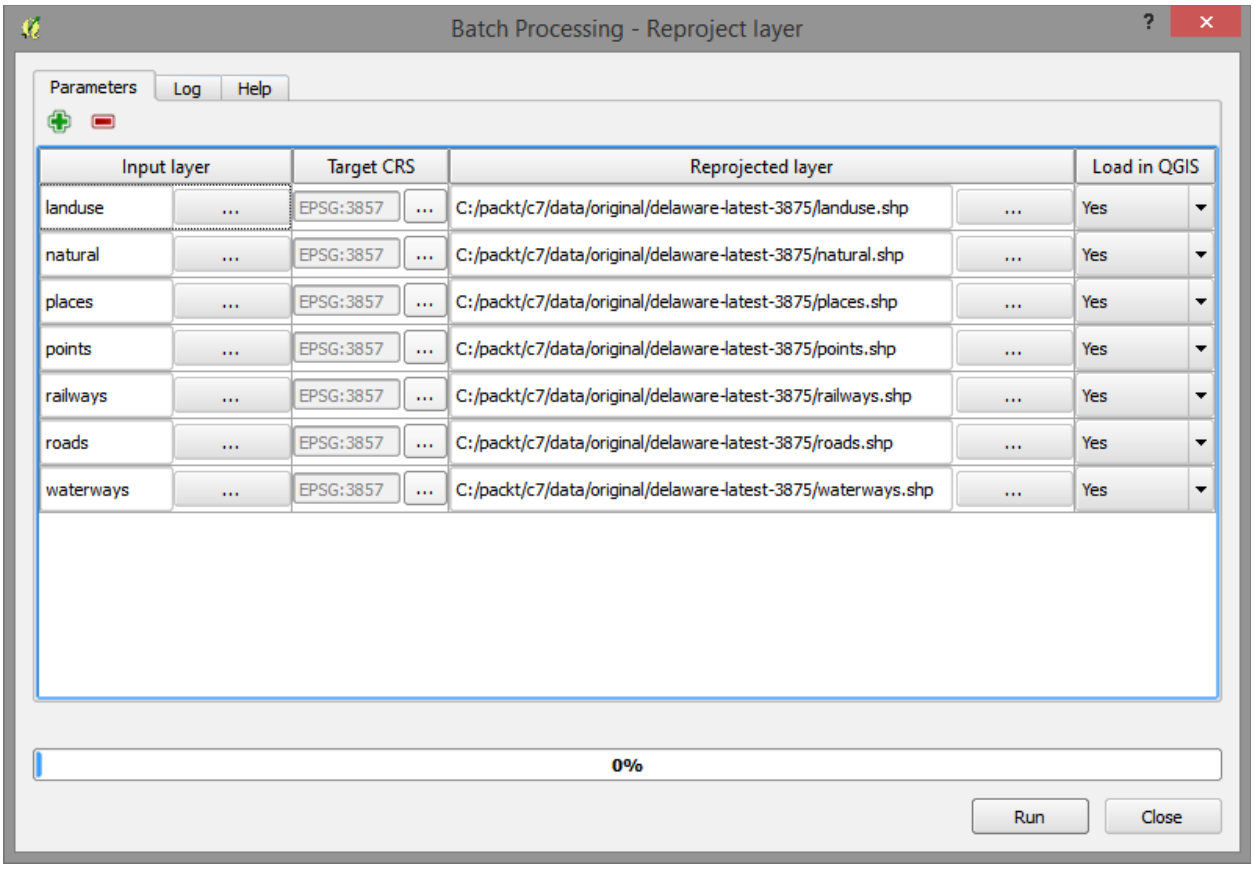
Fred Rust Ice Arena

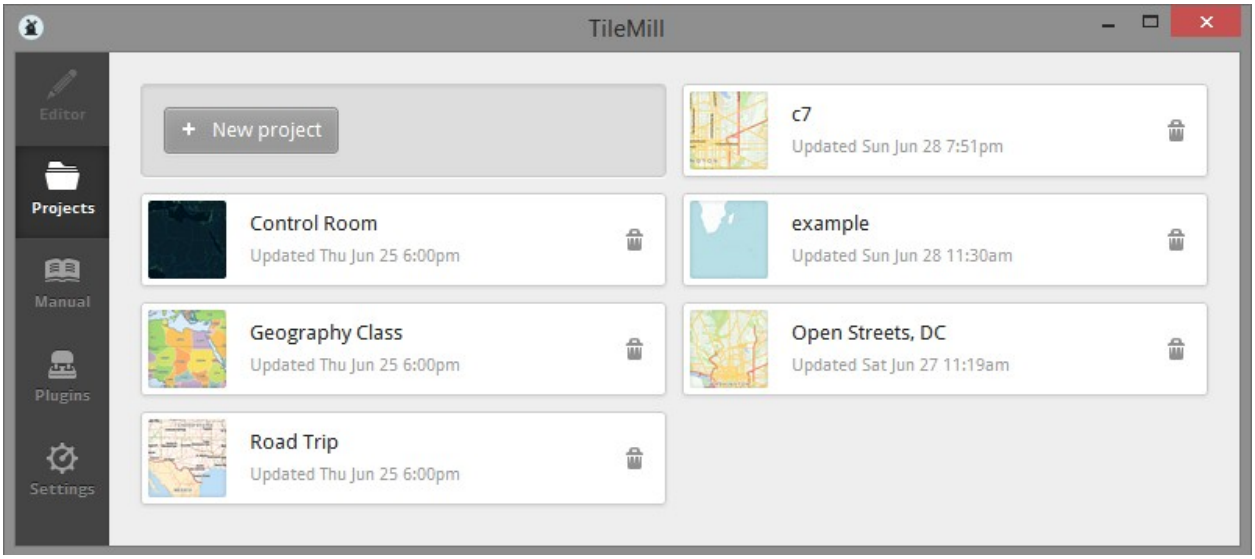

Download OpenStreetMap data
Extent
From map canvas
From layer
OpenStreetMap
Manual
39.7009
-75.7784
-75.7195
39.6542
Output file
C:/packt/c7/data/original/c7.osm
...
OK
Close

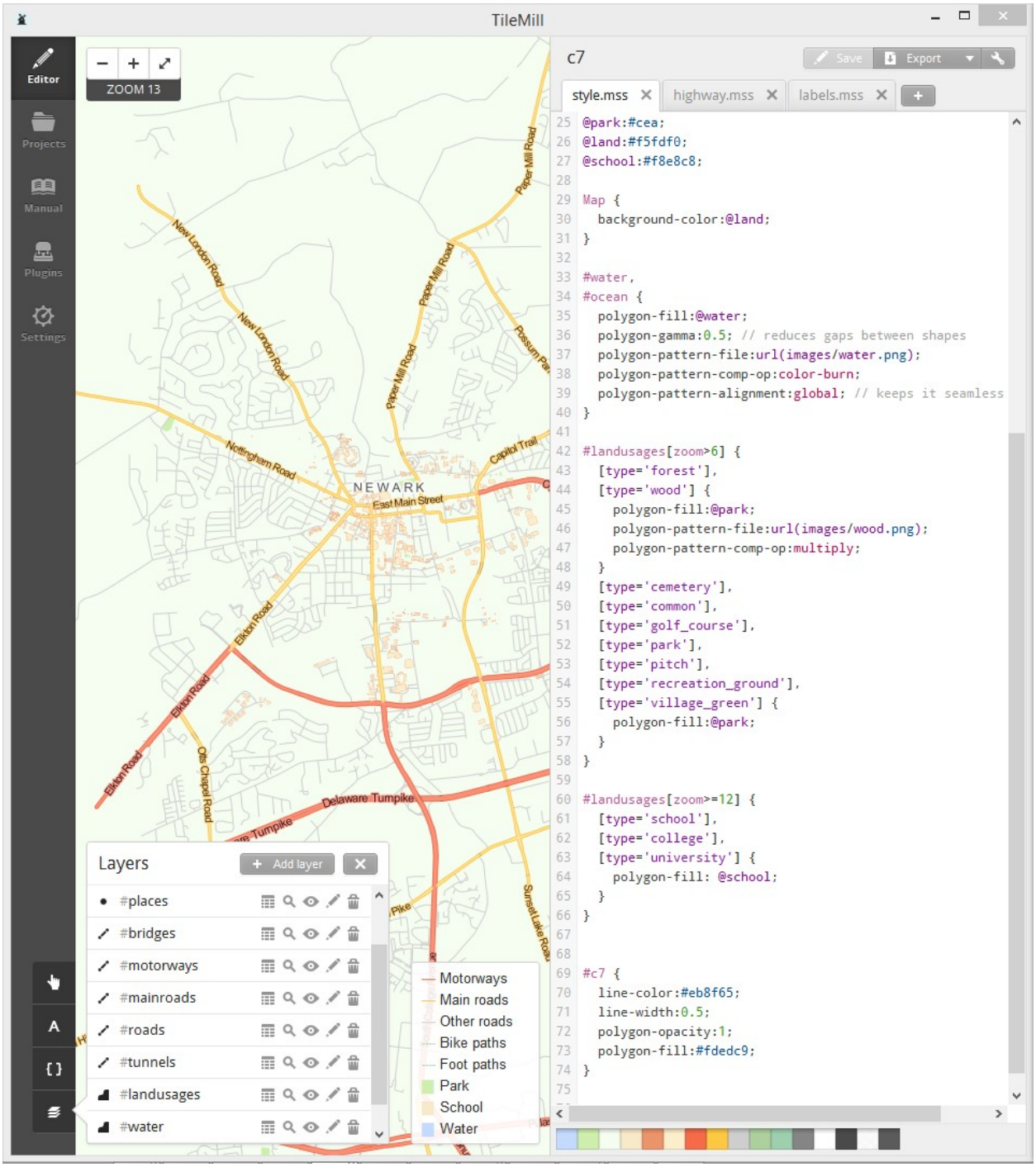

OpenStreetMap Import
Input XML file (.osm)
C:/packt/c7/data/original/c7.osm
...
Output SpatiaLite DB file
C:/packt/c7/data/original/c7.db
...
Create connection (SpatiaLite) after import
Connection name
c7
0%
OK
Close


Export OpenStreetMap topology to SpatiaLite
Input DB file
C:/packt/c7/data/original/c7.db
...
Export type
Points (nodes)
Polylines (open ways)
Polygons (closed ways)
Output layer name
c7_polygons
Exported tags
Load from DB
Tag
Count
highway 2241
name 1354
source 1047
tiger:cfcc 714
tiger:county 714
tiger:name_base 661
tiger:name_type 645
building 593
tiger:zip_left 531
tiger:zip_right 488
udcode 449
tiger:reviewed 437
udrev 389
udlabel 314
udcom_name 312
udprop 311
service 305
udtype 303
oneway 286
amenity 254
udmap_name 216
access 207
lanes 197
ref 191
uddisp 140
tiger:name_base_1 135
udperm 131
udpay 127
udmoto 124
tiger:source 122
tiger:tlid 122
Load into canvas when finished
0%
OK
Close


SQL window - c7 [SpatiaLite]
SQL query:
Store
Delete
SELECT * FROM c7_polygons WHERE building = 'yes' and amenity = 'university'
Execute (F5)
-1 rows, 0.0 seconds
Clear
Result:
id
name
building
amenity
leisure
geometry
1 71218966 Christiana West... yes university NULL
2 71218967 James Smith Hall yes university NULL
3 71219010 Laird Utility Plant yes university NULL
4 71219025 4 Innovation Way yes university NULL
5 71219034 3 Innovation Way yes university NULL
6 71219081 Christiana Com... yes university NULL
7 71219127 5 Innovation Way yes university NULL
8 71219200 George Read Hall yes university NULL
9 71219447 Christiana East ... yes university NULL
10 71219479 9 Innovation Way yes university NULL
Load as new layer
Close


Batch Processing - Reproject layer
Parameters
Log
Help
Input layer
Target CRS
Reprojected layer
Load in QGIS
landuse
EPSG:3857
C:/packt/c7/data/original/delaware-latest-3875/landuse.shp
Yes
natural
EPSG:3857
C:/packt/c7/data/original/delaware-latest-3875/natural.shp
Yes
places
EPSG:3857
C:/packt/c7/data/original/delaware-latest-3875/places.shp
Yes
points
EPSG:3857
C:/packt/c7/data/original/delaware-latest-3875/points.shp
Yes
railways
EPSG:3857
C:/packt/c7/data/original/delaware-latest-3875/railways.shp
Yes
roads
EPSG:3857
C:/packt/c7/data/original/delaware-latest-3875/roads.shp
Yes
waterways
EPSG:3857
C:/packt/c7/data/original/delaware-latest-3875/waterways.shp
Yes
0%
Run
Close


TileMill
Editor
Projects
Manual
Plugins
Settings
New project
c7
Updated Sun Jun 28 7:51pm
Control Room
Updated Thu Jun 25 6:00pm
example
Updated Sun Jun 28 11:30am
Geography Class
Updated Thu Jun 25 6:00pm
Open Streets, DC
Updated Sat Jun 27 11:19am
Road Trip
Updated Thu Jun 25 6:00pm


TileMill
Editor
Projects
Manual
Plugins
Settings
ZOOM 13
NEWARK
East Main Street
Paper Mill Road
New London Road
Nottingham Road
Capitol Trail
Elkton Road
Delaware Turnpike
Ots Chapel Road
Sunset Lake Road
Layers
Add layer
#places
#bridges
#motorways
#mainroads
#roads
#tunnels
#landusages
#water
Motorways
Main roads
Other roads
Bike paths
Foot paths
Park
School
Water
c7
Save
Export
style.mss
highway.mss
labels.mss
@park:#cea;
@land:#f5fdf0;
@school:#f8e8c8;
Map {
background-color:@land;
}
#water,
#ocean {
polygon-fill:@water;
polygon-gamma:0.5; // reduces gaps between shapes
polygon-pattern-file:url(images/water.png);
polygon-pattern-comp-op:color-burn;
polygon-pattern-alignment:global; // keeps it seamless
}
#landusages[zoom>6] {
[type='forest'],
[type='wood'] {
polygon-fill:@park;
polygon-pattern-file:url(images/wood.png);
polygon-pattern-comp-op:multiply;
}
[type='cemetery'],
[type='common'],
[type='golf_course'],
[type='park'],
[type='pitch'],
[type='recreation_ground'],
[type='village_green'] {
polygon-fill:@park;
}
}
#landusages[zoom>=12] {
[type='school'],
[type='college'],
[type='university'] {
polygon-fill: @school;
}
}
#c7 {
line-color:#eb8f65;
line-width:0.5;
polygon-opacity:1;
polygon-fill:#fdedc9;
}

Templates

Legend | Teaser | Full | Location

Content to be shown on click or second tap (mobile).

```
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```

buildings Layer to use for interaction data

```
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```

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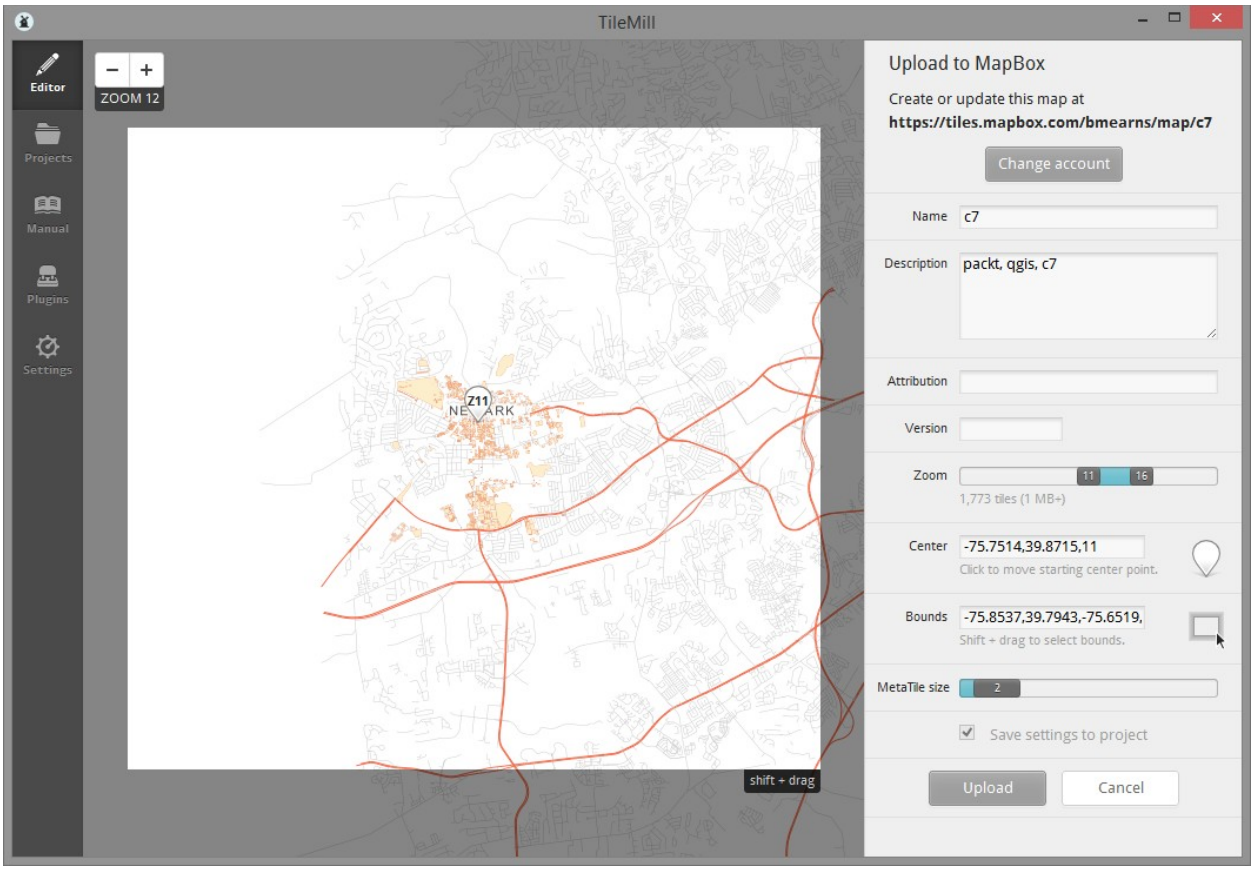
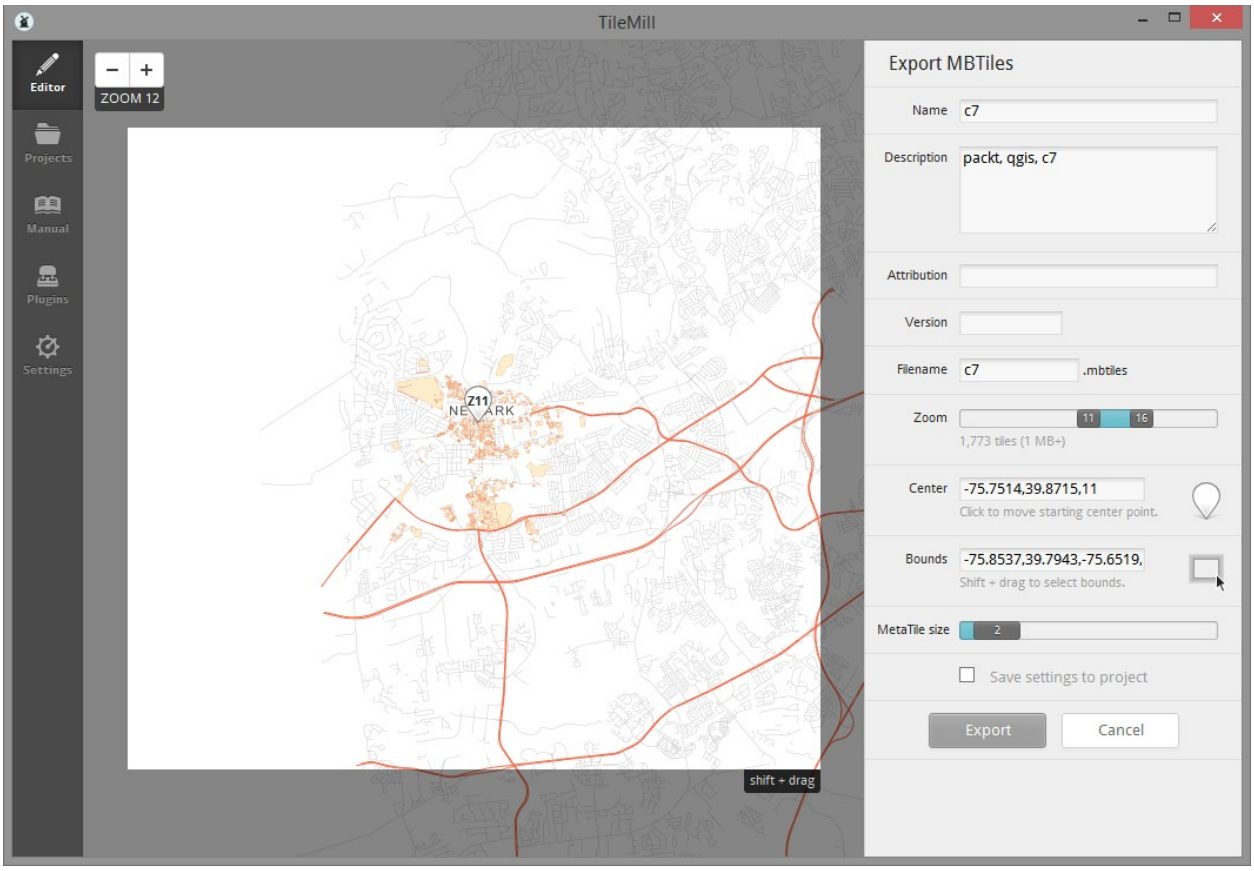
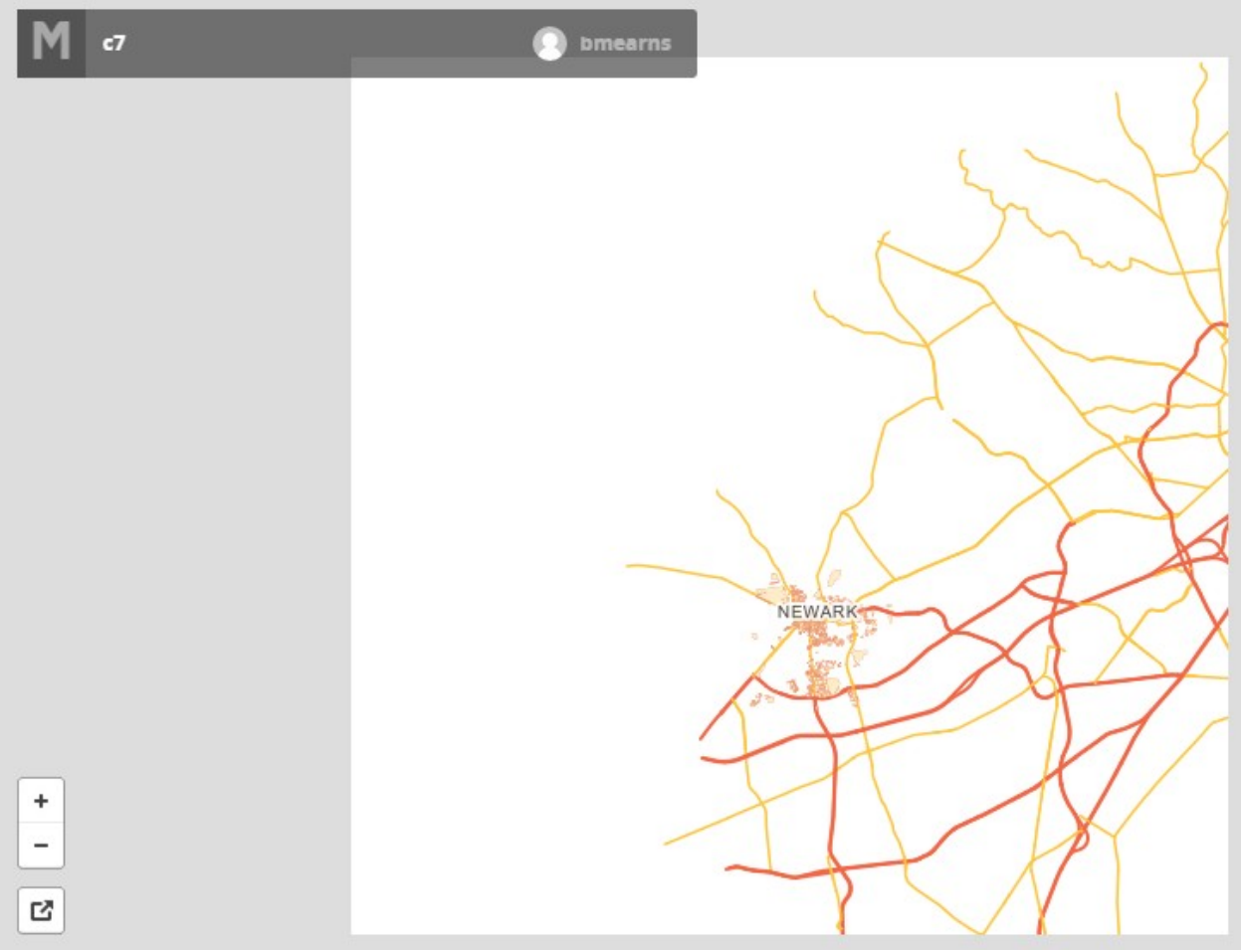
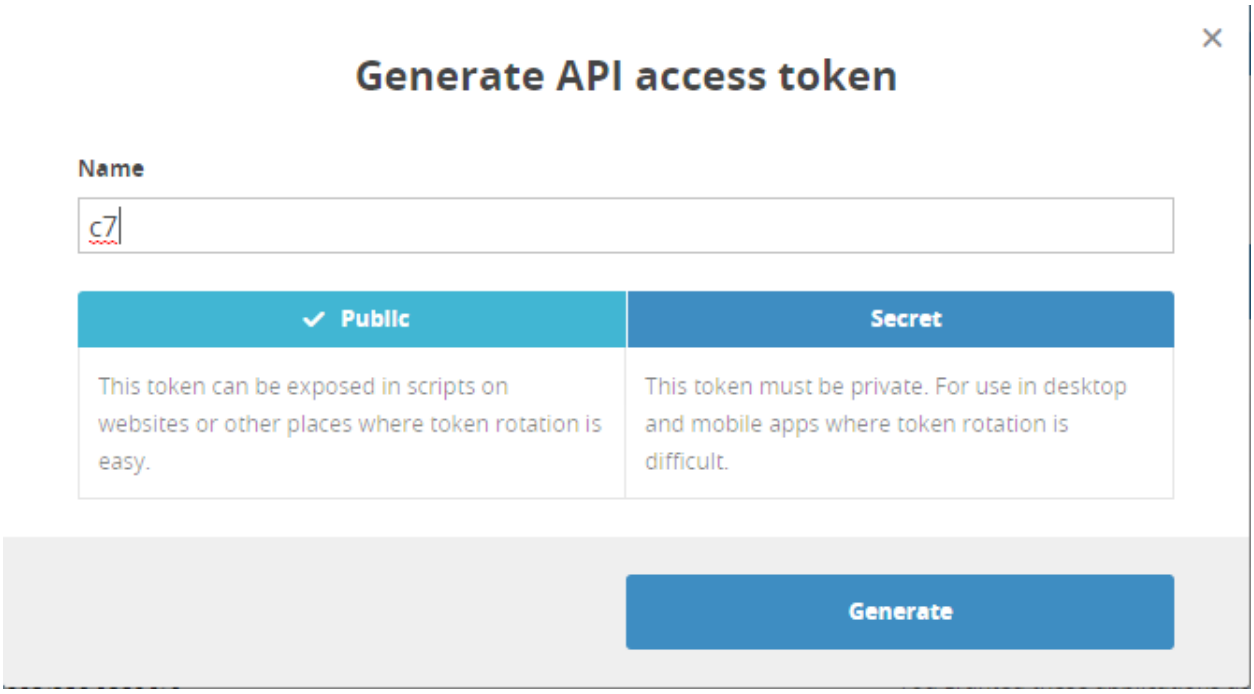
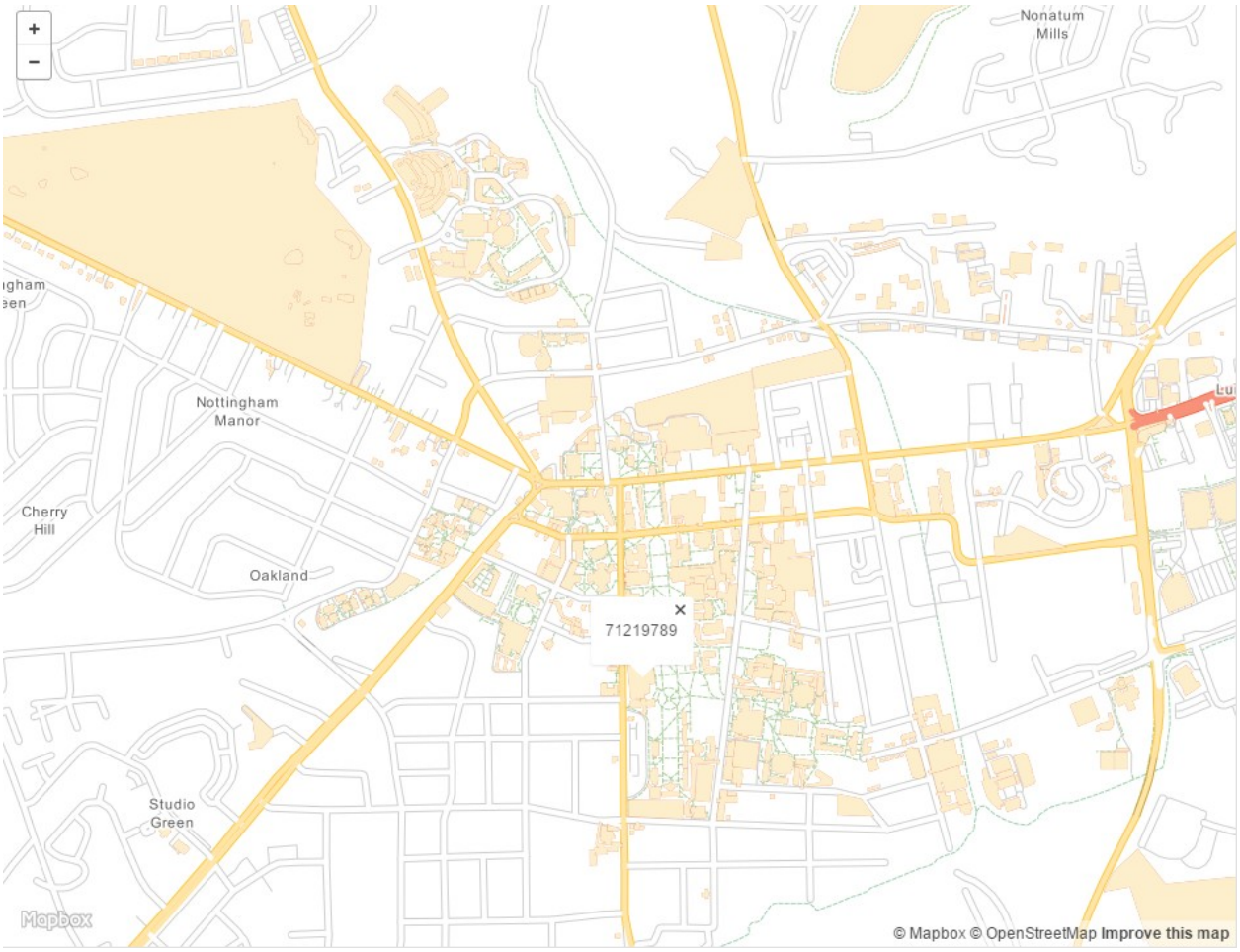
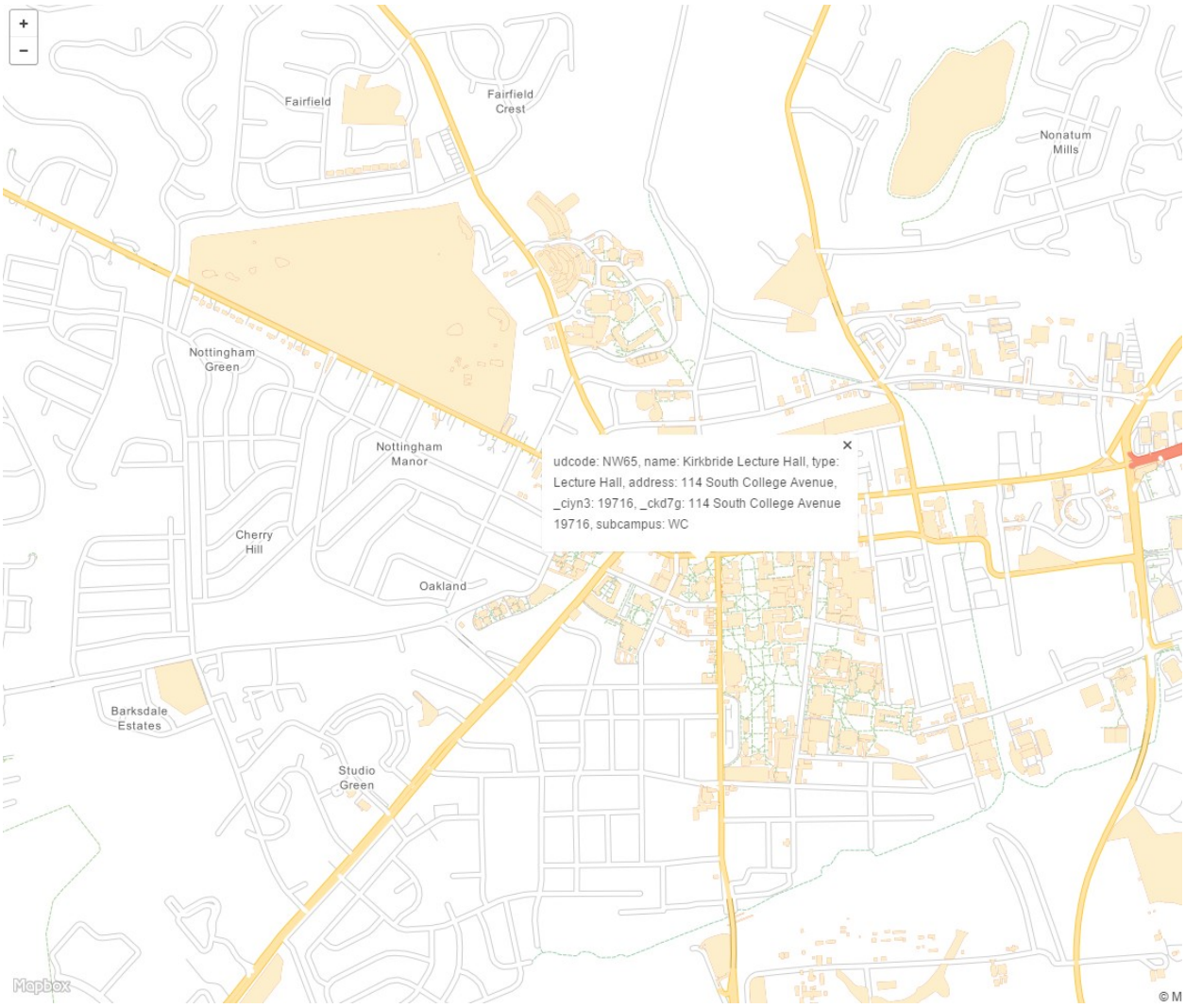

TileMill
Editor
Projects
Manual
Plugins
Settings
ZOOM 12
Z11
NEWARK
shift + drag
Upload to MapBox
Create or update this map at
https://tiles.mapbox.com/bmearns/map/c7
Change account
Name
c7
Description
packt, qgis, c7
Attribution
Version
Zoom
11
16
1,773 tiles (1 MB+)
Center
-75.7514,39.8715,11
Click to move starting center point.
Bounds
-75.8537,39.7943,-75.6519,
Shift + drag to select bounds.
MetaTile size
2
Save settings to project
Upload
Cancel


TileMill
Editor
Projects
Manual
Plugins
Settings
ZOOM 12
Z11
NEWARK
shift + drag
Export MBTiles
Name
c7
Description
packt, qgis, c7
Attribution
Version
Filename
c7
.mbtiles
Zoom
11
16
1,773 tiles (1 MB+)
Center
-75.7514,39.8715,11
Click to move starting center point.
Bounds
-75.8537,39.7943,-75.6519,
Shift + drag to select bounds.
MetaTile size
2
Save settings to project
Export
Cancel


c7
bmearns
NEWARK
+
−


Generate API access token
Name
c7
Public
Secret
This token can be exposed in scripts on websites or other places where token rotation is easy.
This token must be private. For use in desktop and mobile apps where token rotation is difficult.
Generate


Nonatum
Mills
Nottingham
Manor
Cherry
Hill
Oakland
71219789
Studio
Green
Mapbox
© Mapbox © OpenStreetMap Improve this map


+
−
Fairfield
Fairfield Crest
Nonatum Mills
Nottingham Green
Nottingham Manor
udcode: NW65, name: Kirkbride Lecture Hall, type: Lecture Hall, address: 114 South College Avenue, _ciyn3: 19716, _ckd7g: 114 South College Avenue 19716, subcampus: WC
Cherry Hill
Oakland
Barksdale Estates
Studio Green
Mapbox
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