

Mapping Data using MapBox and CartoDB

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Geography and Urban Studies, CLA

Agenda

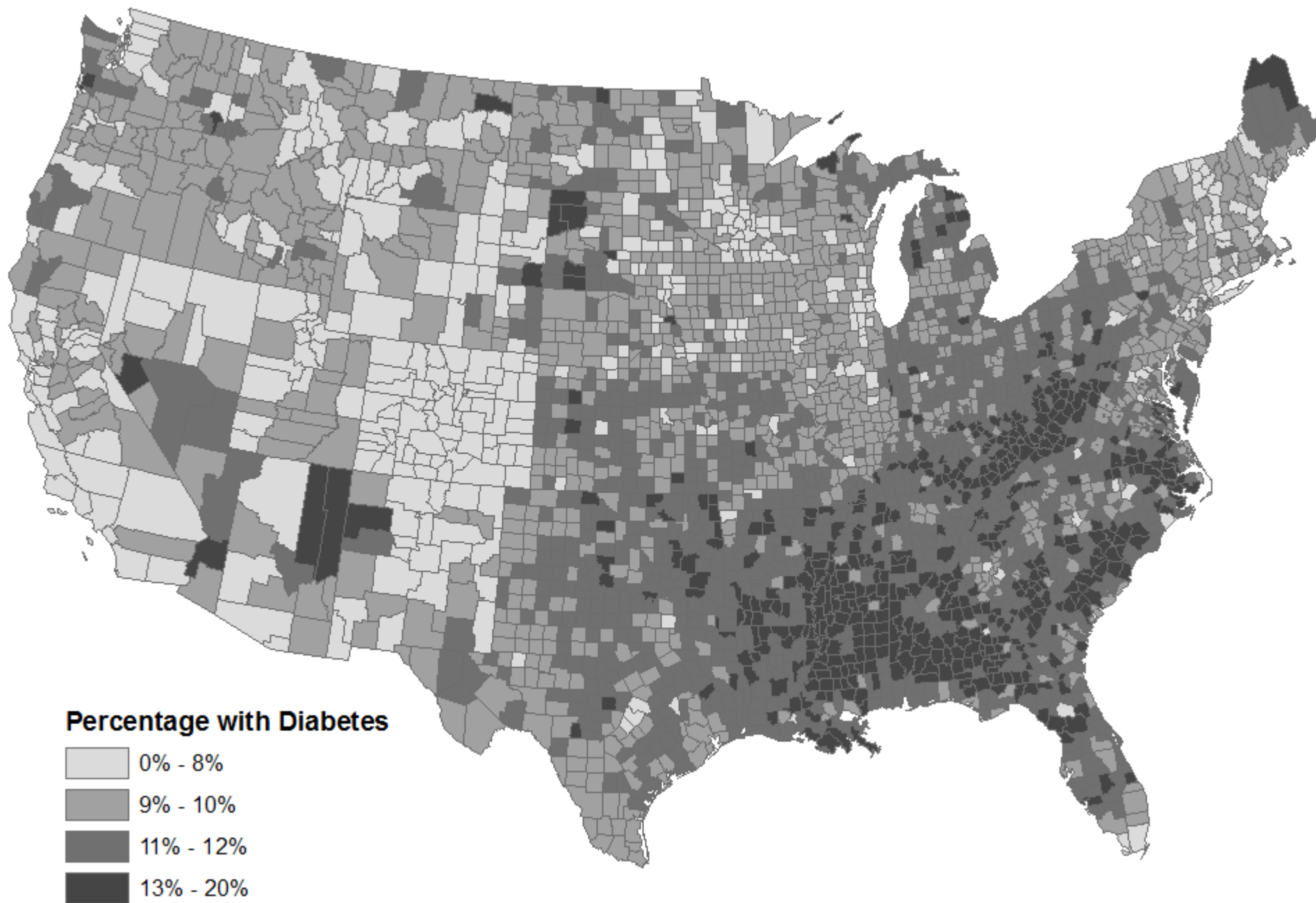
- Beyond tabular data
- Representing spatial data
- Static maps, web maps
 - MapBox
 - CartoDB

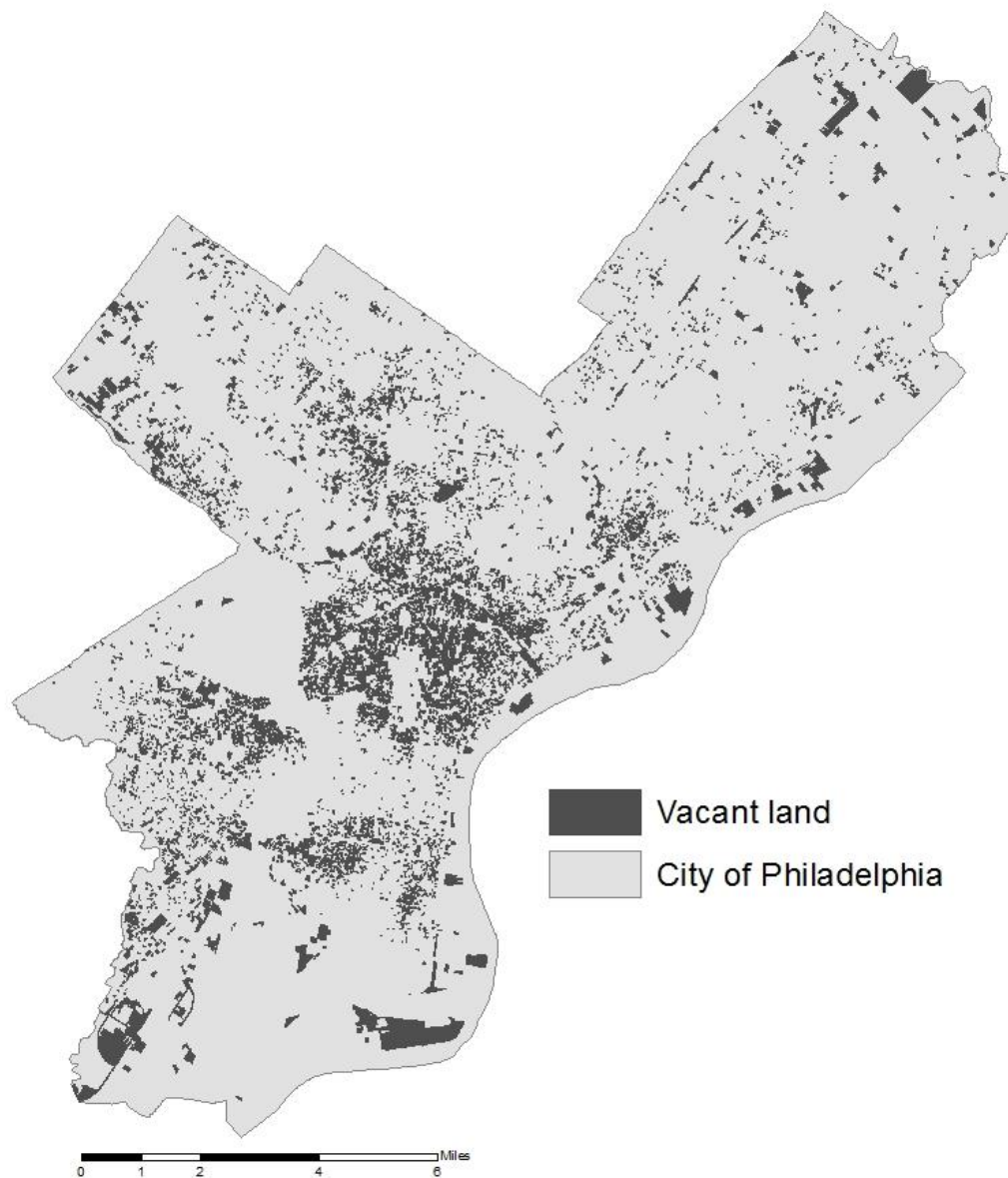
Table



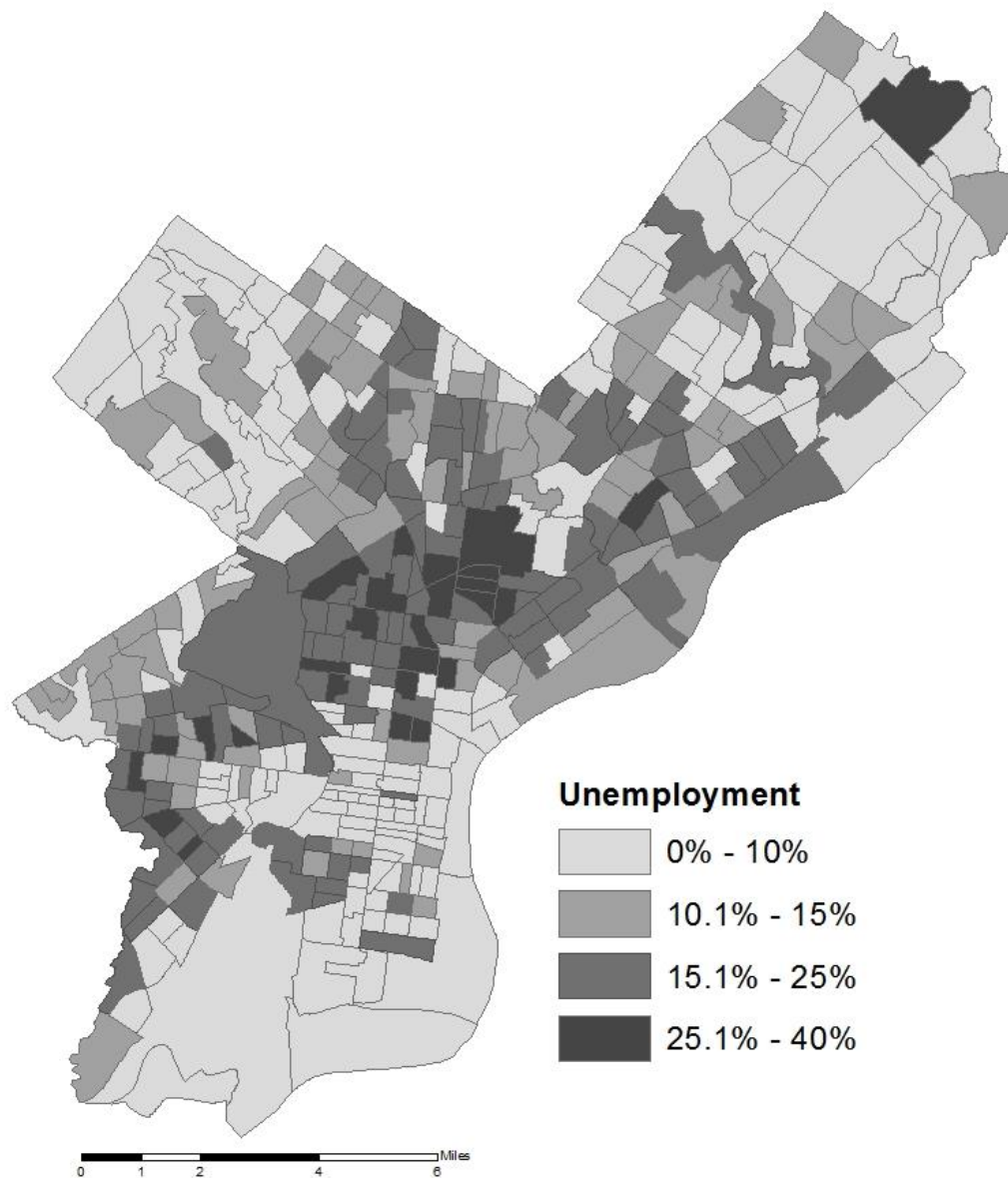
foodatlas

	NAME	STATE_NAM	PCT_DIABET	PCT_OBESE
▶	Lake of the Woods	Minnesota	9.5	28.3
	Ferry	Washington	8.1	25.7
	Stevens	Washington	9.5	27.3
	Okanogan	Washington	9.6	27.4
	Pend Oreille	Washington	9.8	30.8
	Boundary	Idaho	8.5	23.7
	Lincoln	Montana	9.2	25.6
	Flathead	Montana	6.4	21.8
	Glacier	Montana	12	31
	Toole	Montana	8.5	28.7
	Liberty	Montana	8.2	26.2
	Hill	Montana	7.7	32.4
	Sheridan	Montana	8.5	27.6
	Divide	North Dakota	9.3	29.8
	Burke	North Dakota	10.7	29.1
	Renville	North Dakota	9	26.5
	Bottineau	North Dakota	10.9	31.5
	Rolette	North Dakota	13.8	39.7
	Towner	North Dakota	10.1	29.8
	Cavalier	North Dakota	10.2	31.2
	Pembina	North Dakota	10.2	33
	Kittson	Minnesota	10.4	29.2
	Roseau	Minnesota	7.6	32.1
	Blaine	Montana	12.4	34.9
	Phillips	Montana	8.5	26.3
	Valley	Montana	10.2	27
	Daniels	Montana	9.1	23
	Whatcom	Washington	7	24.3
	Bonner	Idaho	7.9	22.7
	Ward	North Dakota	8.4	30.1
	Koochiching	Minnesota	10.3	29.7
	Skagit	Washington	7.7	27.3
	Williams	North Dakota	8.4	30.4
	McHenry	North Dakota	10.2	32.6
	St. Louis	Minnesota	8	27.8
	San Juan	Washington	6.7	19.2
	Roosevelt	Montana	13.1	34.8
	Mountrial	North Dakota	9.8	34.8
	Marshall	Minnesota	8.7	26.5
	Ramsey	North Dakota	8.3	31.7
	Walsh	North Dakota	8.6	32.6
	Beltrami	Minnesota	7.8	30.3
	Pierce	North Dakota	10.4	31.6

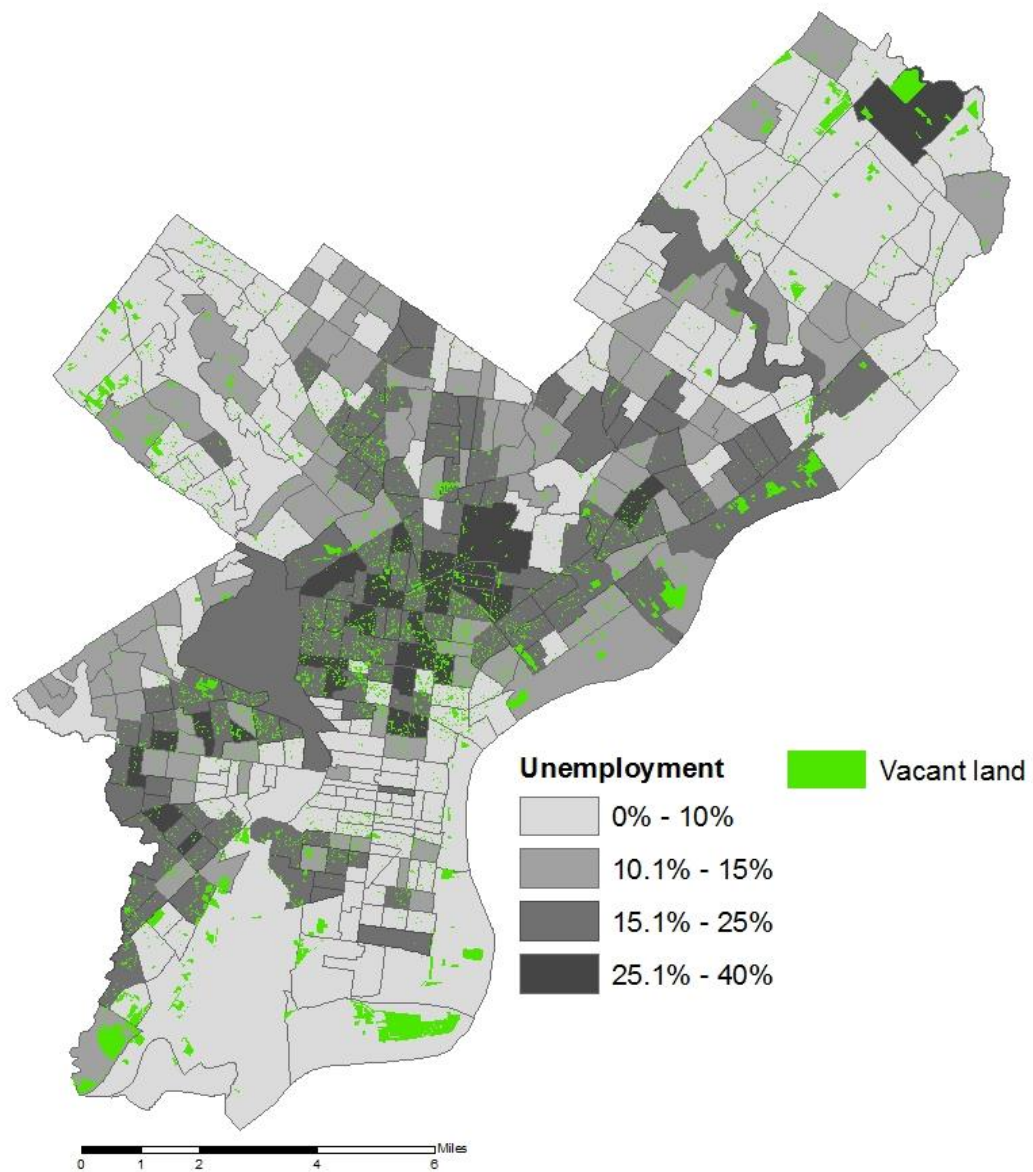




Data source: City of Philadelphia, 2011



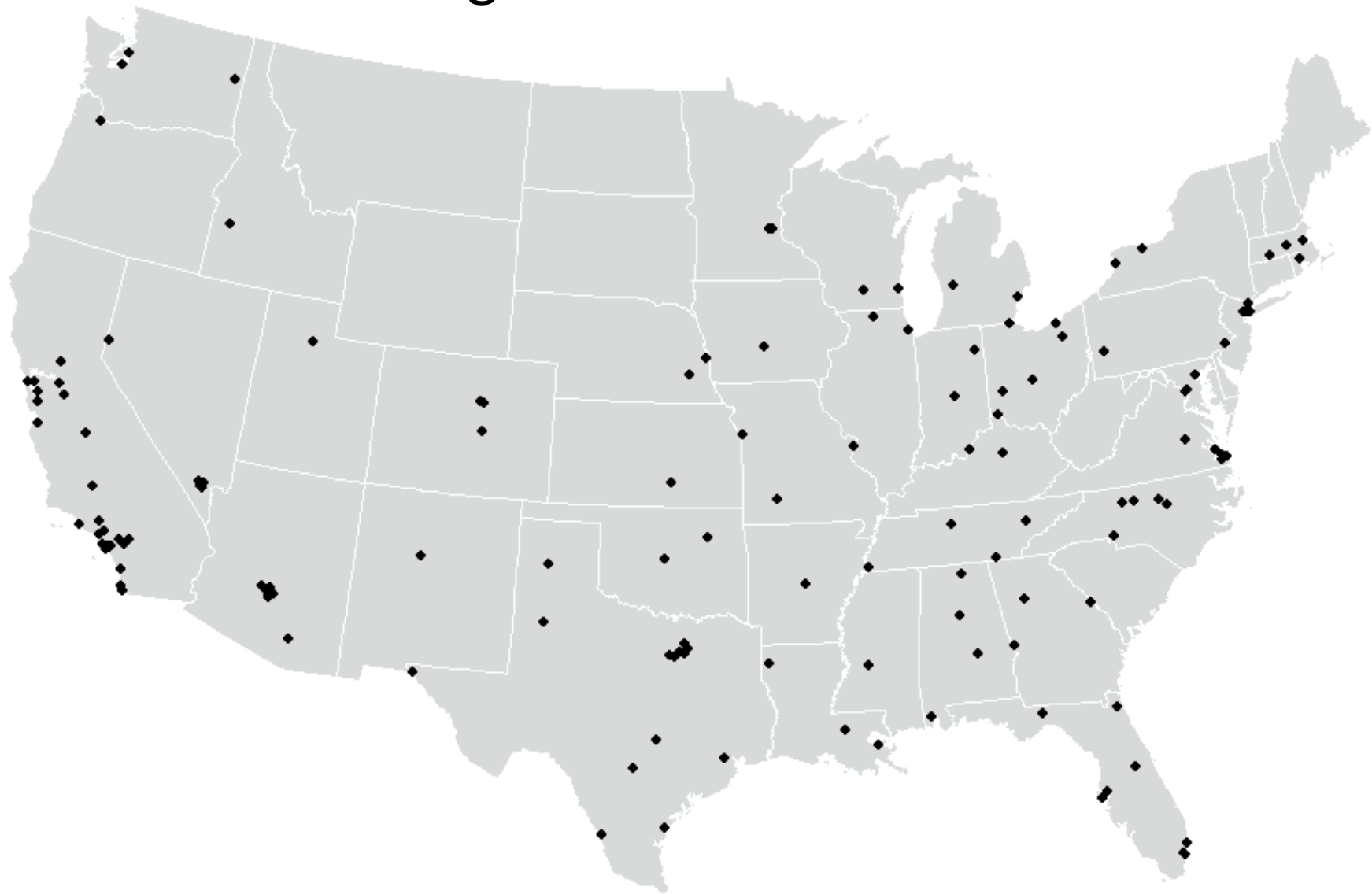
Data source: 2010 ACS 5-year estimates



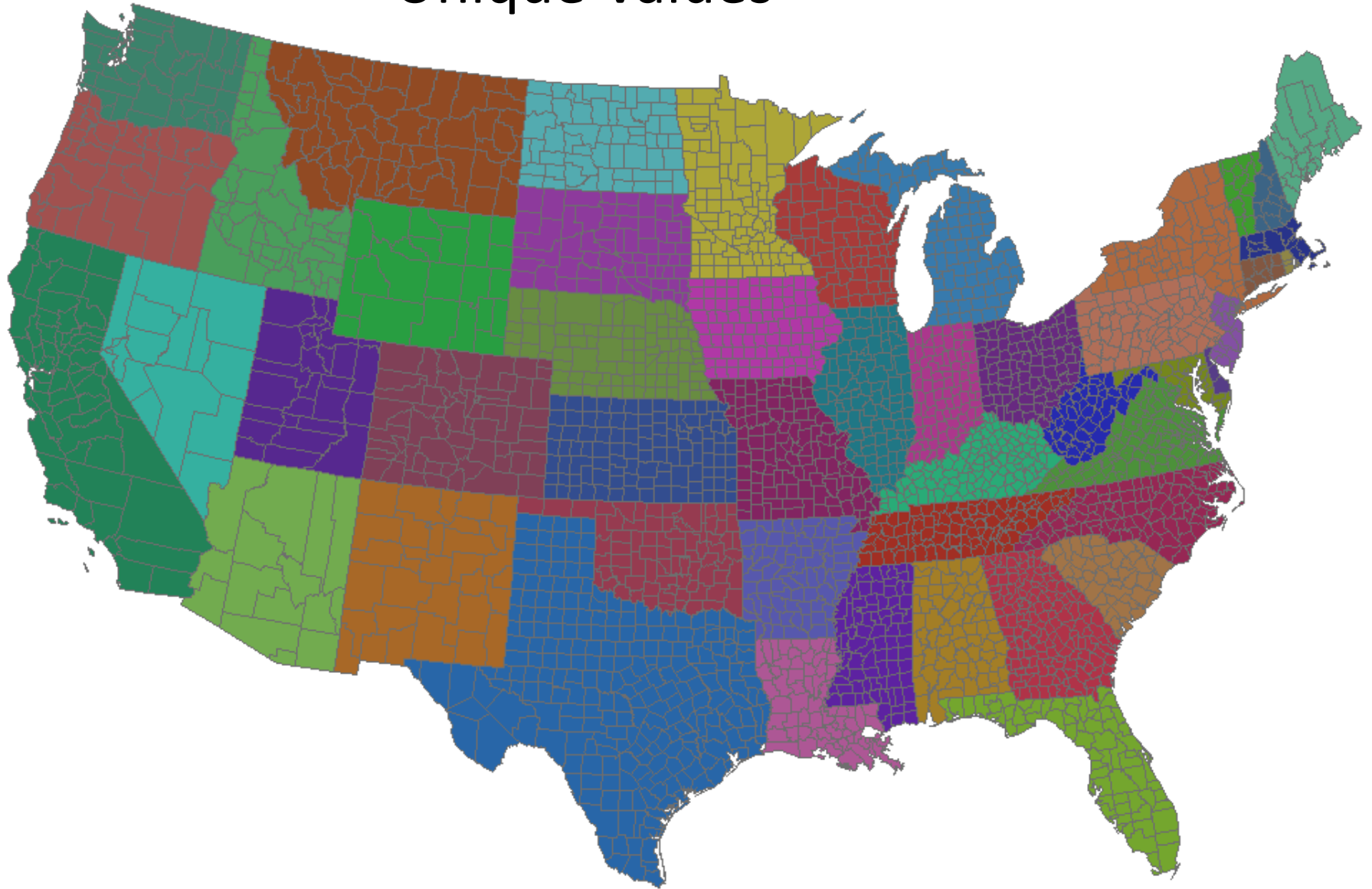
Data sources: 2010 ACS 5-year estimates, City of Philadelphia, 2011

Representing Spatial Data

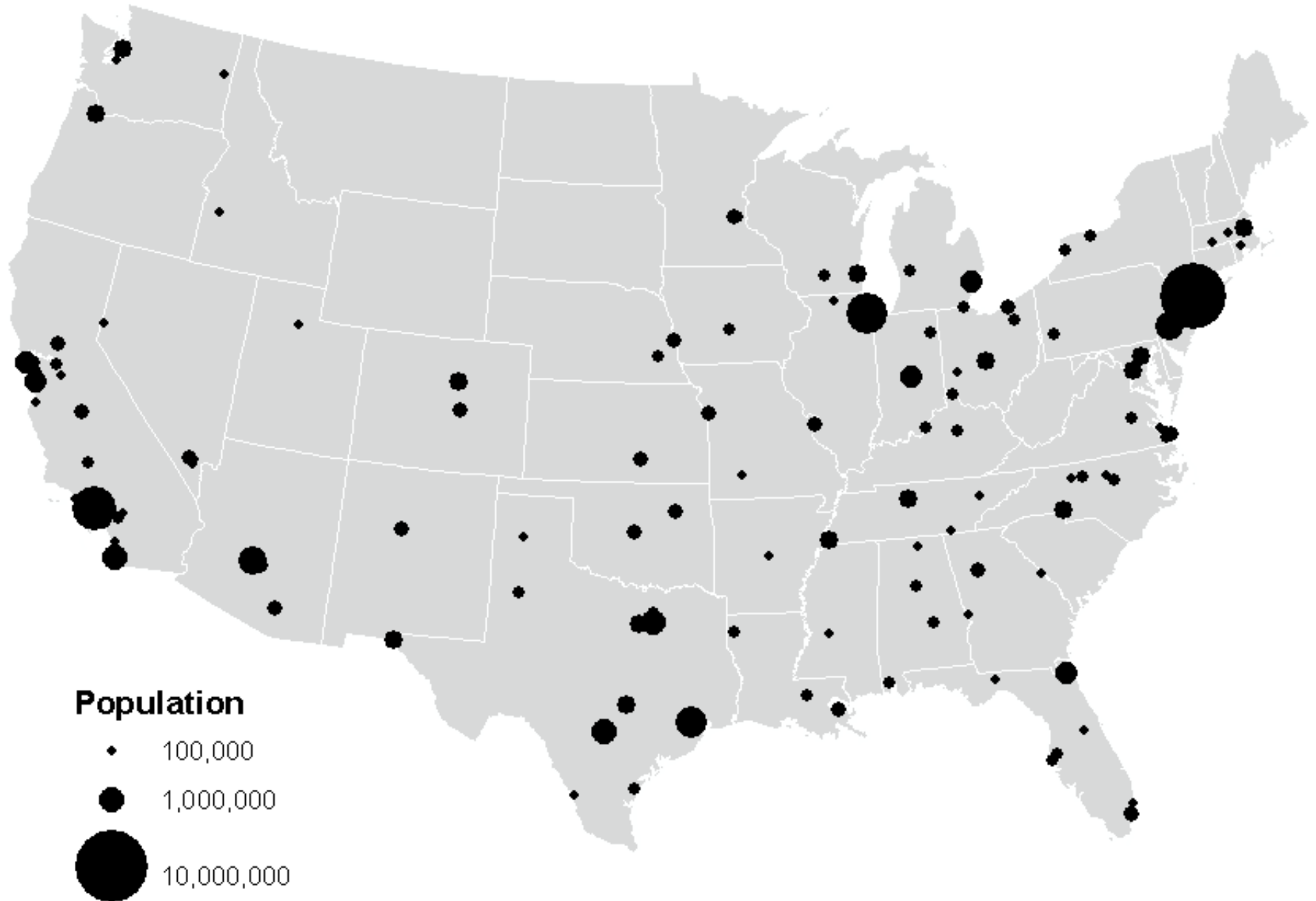
Single Values



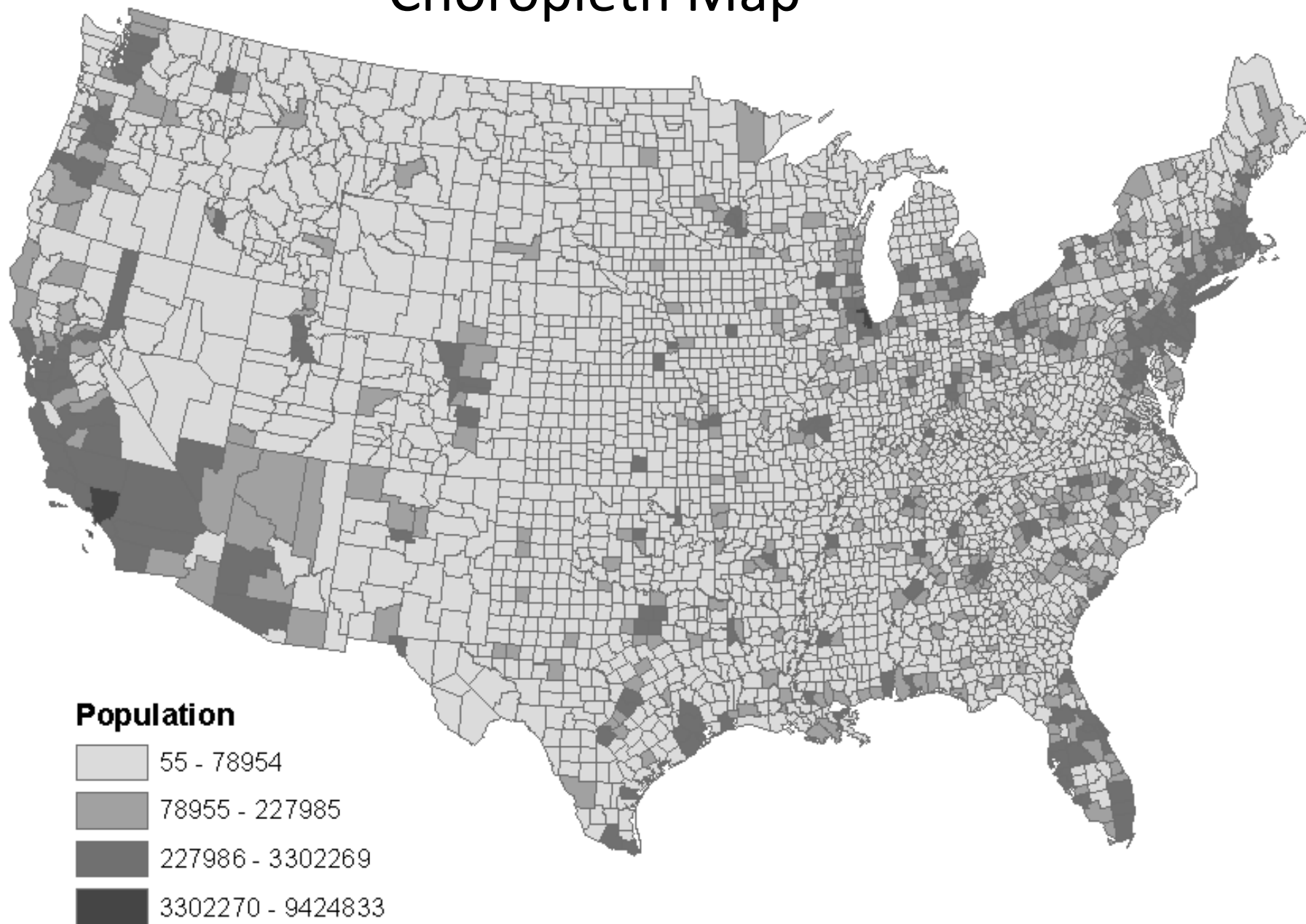
Unique Values

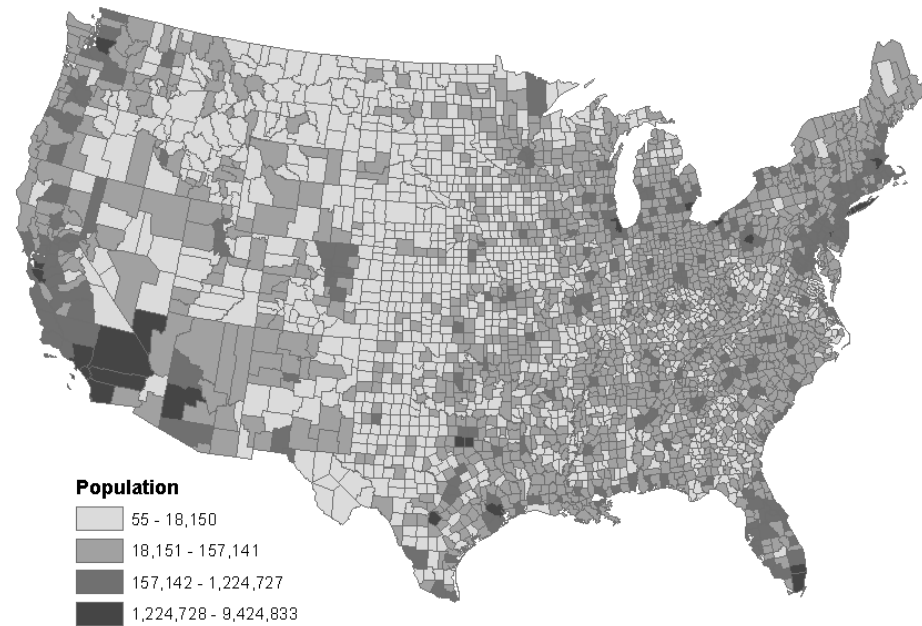
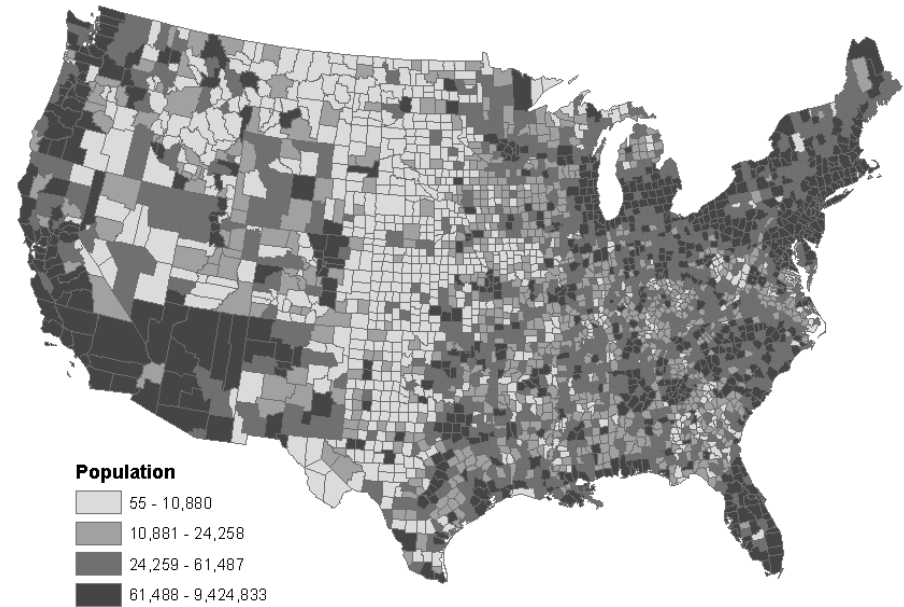
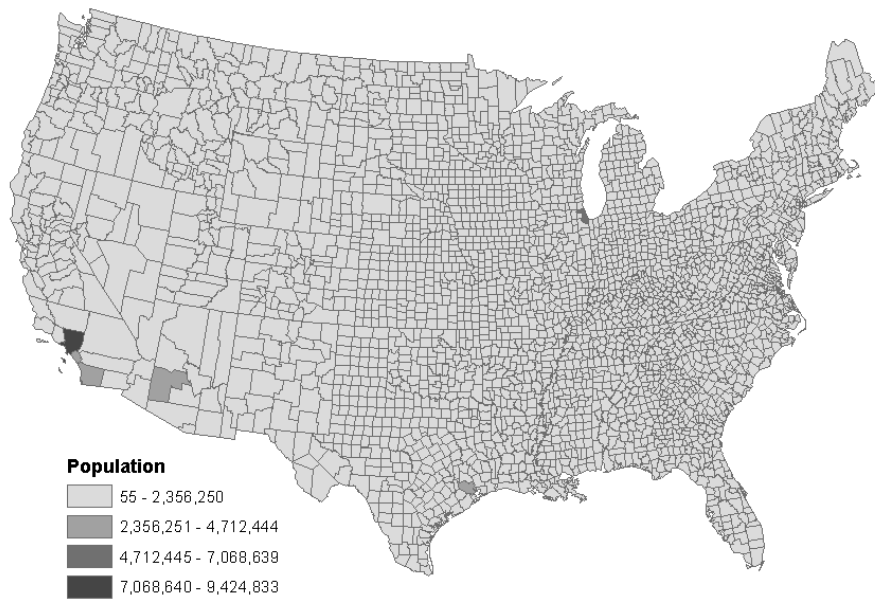


Proportional Symbol



Choropleth Map





Data classification matters

Static Maps, Web maps

Published: January 8, 2010

A Peek Into Netflix Queues

Examine Netflix rental patterns, neighborhood by neighborhood, in a dozen cities. Some titles with distinct patterns are [Mad Men](#), [Obsessed](#) and [Last Chance Harvey](#). [Comments \(135\)](#)

100 titles that were frequently rented from Netflix in 2009

[Previous](#)

[Next](#)

Most rented

Least rented

Change how movies are sorted

[Most rented](#)

[Alphabetical](#)

[By metacore](#)

Knowing



41

Metacritic score

100=loved by critics, 0=hated

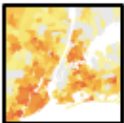
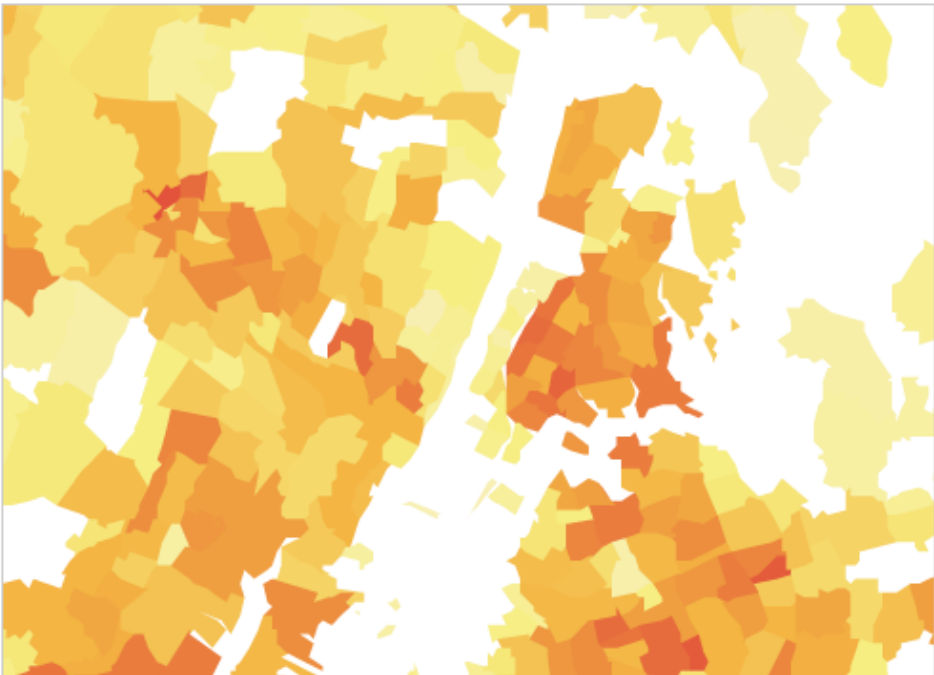
Nobody requires plausibility from a movie like "Knowing," which features slender blond aliens, intimations of apocalypse, clairvoyant children and Nicolas Cage as an astrophysicist. If the thing manages to avoid complete preposterousness, the audience can still have a good time.

[Read Rest of NYT Review »](#)

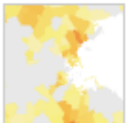
The ZIP codes are shaded according to each movie's rank.

Ranked No. 1

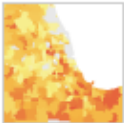
No. 50



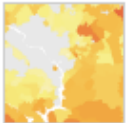
NEW YORK



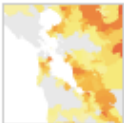
BOSTON



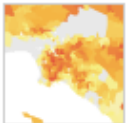
CHICAGO



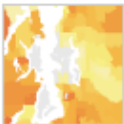
WASHINGTON



BAY AREA



L.A.



SEATTLE



MINNEAPOLIS

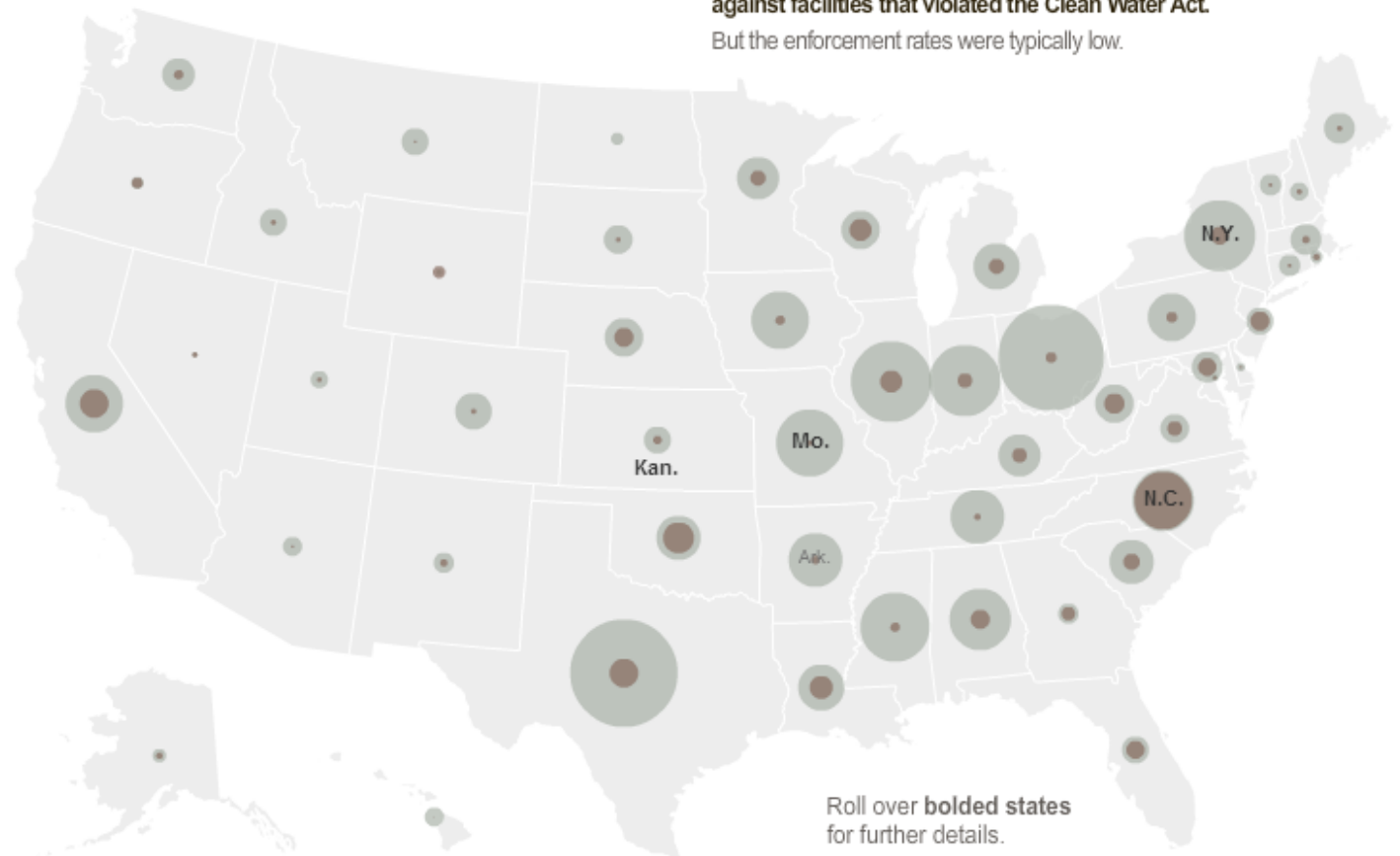
Published: September 13, 2009

Clean Water Act Violations: The Enforcement Record

The New York Times surveyed violations of the Clean Water Act in every state. The survey found that in many states, more than 50 percent of regulated facilities violated the Clean Water Act, but enforcement actions against polluters were infrequent. | [Related Article »](#)

1 2 3 NEXT ▶

Darker circles show the enforcement actions taken against facilities that violated the Clean Water Act. But the enforcement rates were typically low.



Two web mapping programs

- MapBox: www.mapbox.com
- CartoDB: www.cartodb.com

	MapBox	CartoDB
Data		
Enter data directly on map (points, lines, polygons)	X	
.kml	X	X
.csv	X	X
.gpx	X	X
.geojson	X	X
Data entry limitations for free version	X (# features)	X (tables)
Functionality		
Geocoding		X
Filter		X
Queries		X
Cartographic output		
Options for modifying base imagery	X	X
Visualizes qualitative data	X	X
Visualizes quantitative data		X
Visualizes time series data		X

Hamil Pearsall

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Office Hours: Wednesdays 2-3pm

Email: hamil.pearsall@temple.edu

Screen shots of demos

MapBox

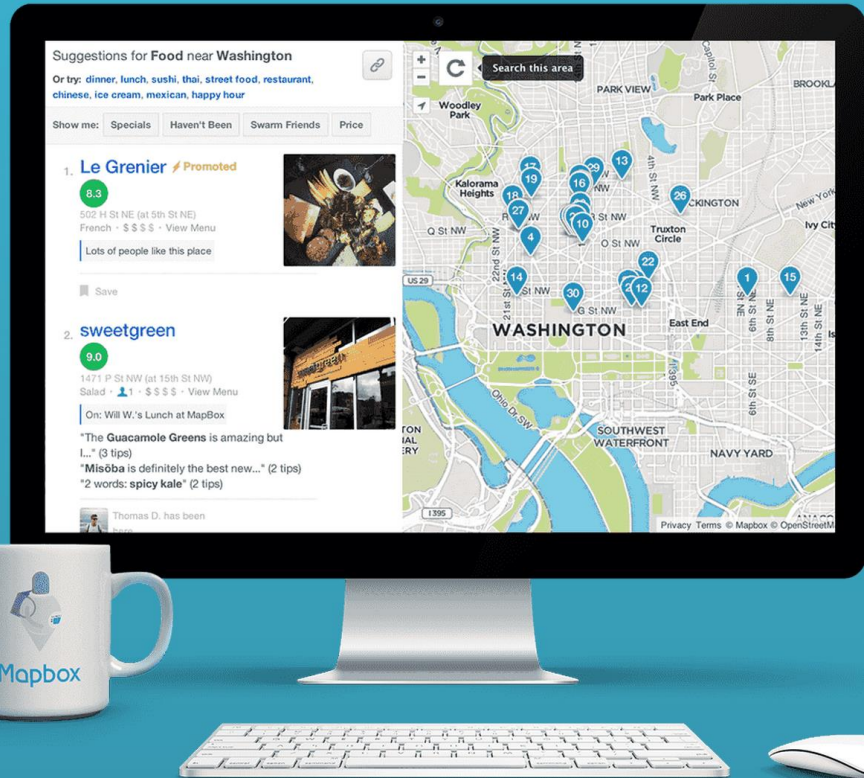
Mapbox

Design Data Develop Showcase Plans Help Blog Sign in [Sign up](#)

DESIGN THE
MAP YOUR
CHECK IN
DESERVES.

[Try it for free](#)

[How it works ↓](#)



<https://www.mapbox.com/>

Default access token

pk.eyJ1IjoiaHB1YXJzYWwiLCJhIjoicW56NTRaOCJ9.4SYABw3n-Mqm0Jo_G_U7Gw



Manage Tokens →

What is this?

Projects

🔍 Filter

+ Create project

0 results sorted by name date



 Style

 Data

 Project



 Save

 Marker

 Line

 Polygon



 Draw or [import](#) .geojson, .csv, .kml, or .gpx files.

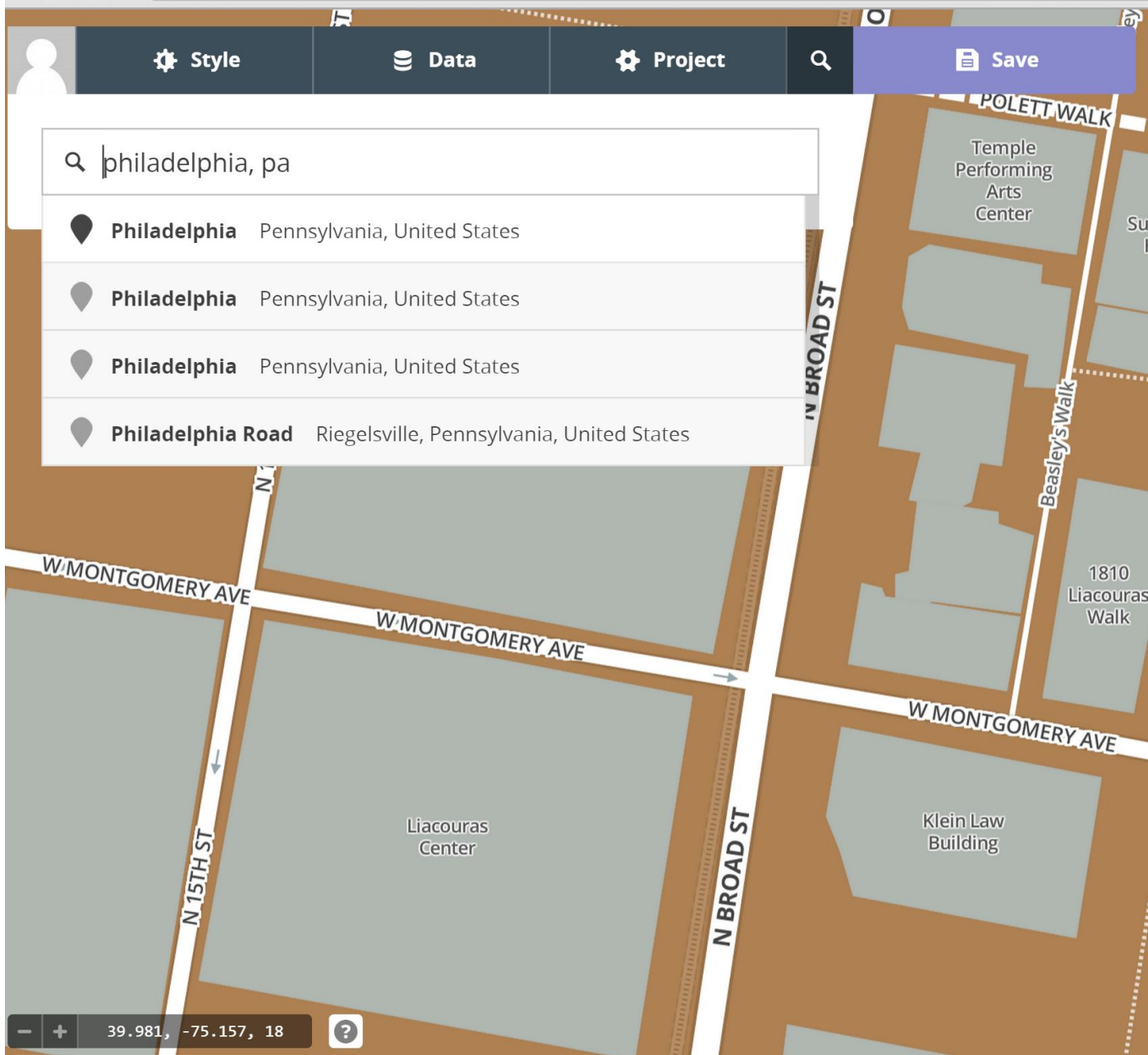
Draw or import data

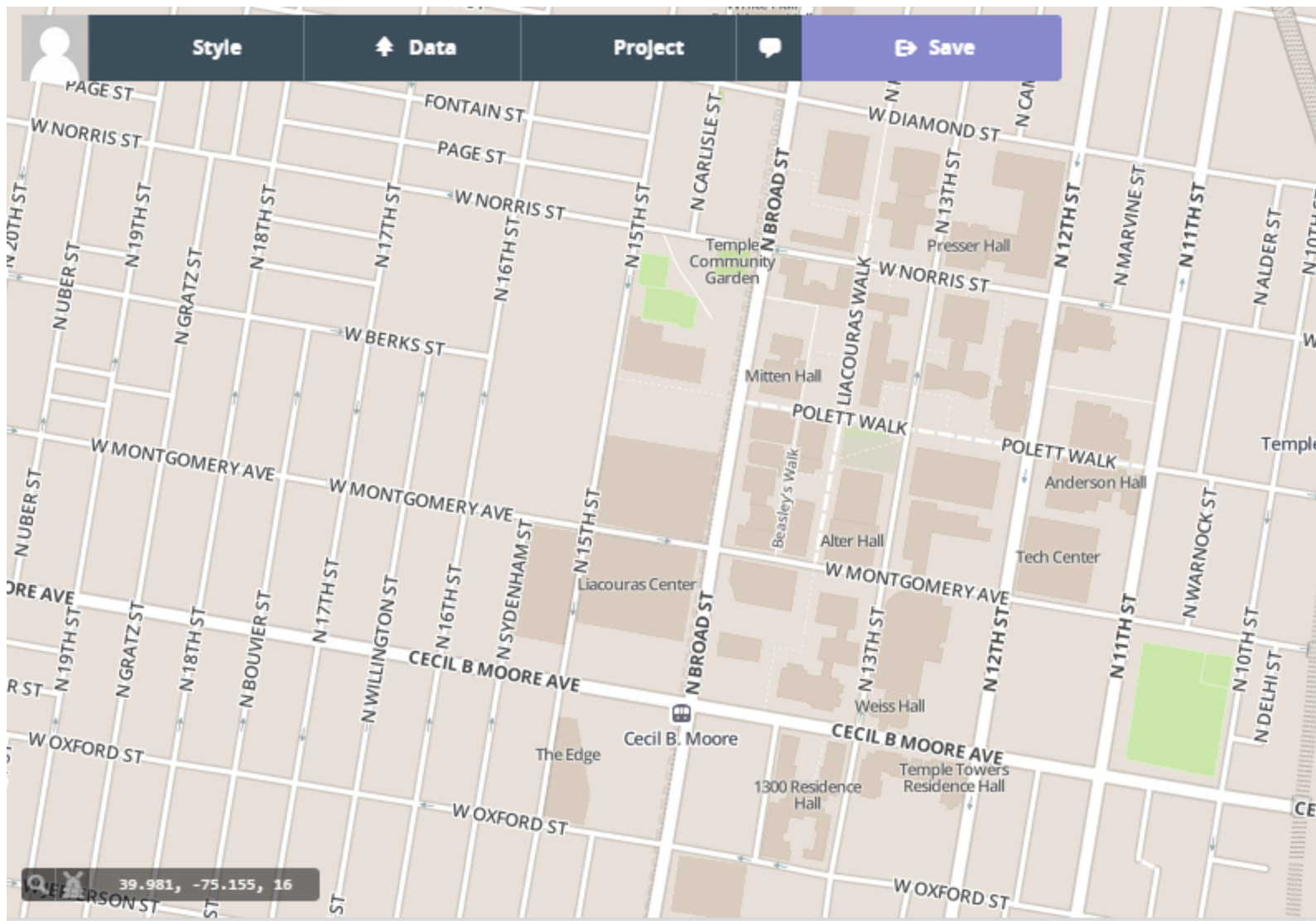
Add markers, lines, or polygon data to your project.

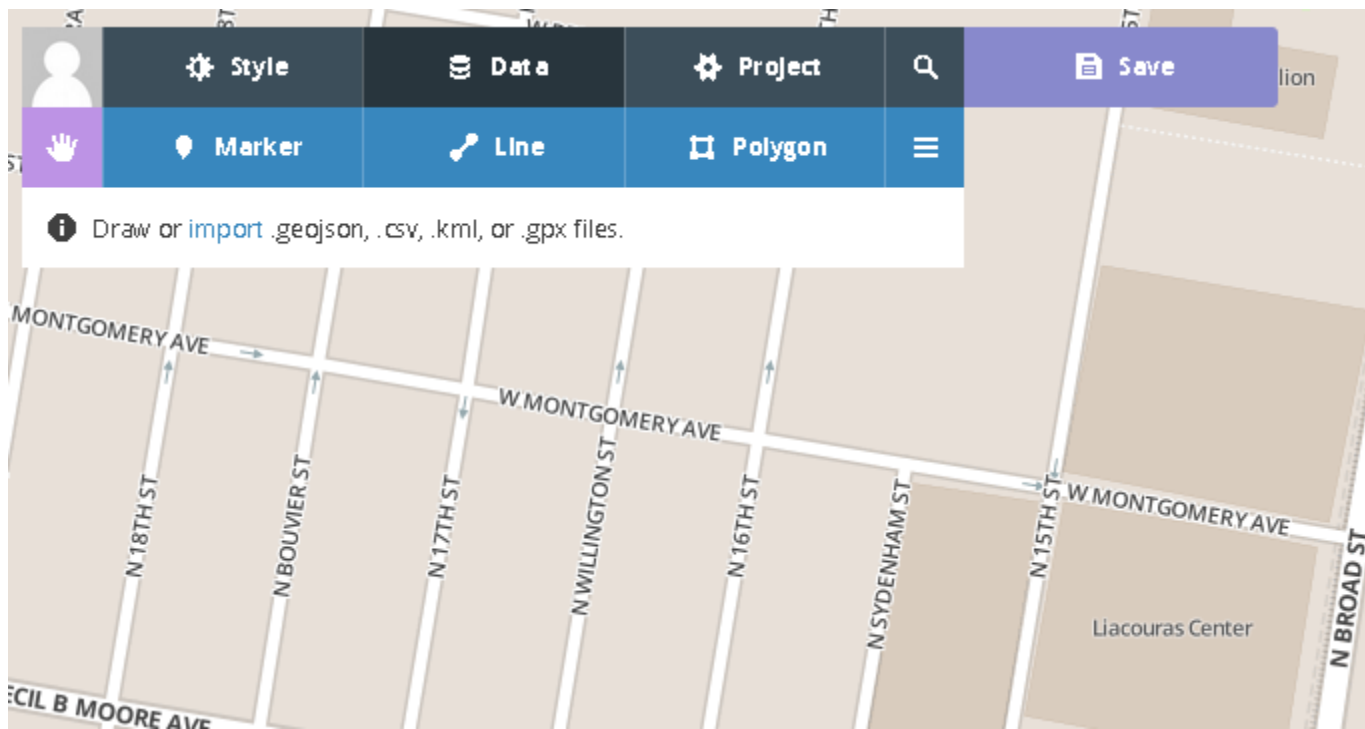
 [Need help?](#)

0, 0, 3







Style

Data

Project

Save

Marker

Line

Polygon

Cecil B. Moore Subway

Name this feature

Description

Add a description

Text

Style

Symbol

Lat/Lon

Draw or import data

Add markers, lines, or polygon data to your project.

[Need help?](#)

Style

Data

Project

Marker

Line

Polygon

Draw or [import](#) .geojson, .csv, .kml, or .gpx files.

Draw or import data

Add markers, lines, or polygon data to your project.

Need help?

39.98, -75.158, 17

W OXFORD ST

3 BROAD ST

N 13TH ST

N 15TH ST

N 16TH ST

N 17TH ST

N BOUVIER ST

W MONTGOMERY AVE

CECIL B MOORE AVE

N SYDENHAM ST

N WILLINGTON ST

POLETT WALK

Beasley's Walk

1810 Liacouras Walk

Alter Hall

Speakman Hall

Sullivan Hall

Mitten Hall

Klein Law Building

Ritter Hall

Ritter Hall Annex

Howard Gittis Student Center

Weiss Hall

Temple Tower Residence Hall

1300 Residence Hall

Shops at North Avenue

Cecil B. Moore

Style

Data

Project

Search

nt Pavilion

Saved

Directions to the Workshop

[Need help?](#)

Data

↓ GeoJSON

↓ KML

Map ID

hpearsa1.jklmo8pi

For javascript, iOS, Android, and Web services.

Share

<https://a.tiles.mapbox.com/v4/hpearsa1.jklmo8pi...>

Embed

<iframe width='100%' height='500px' frameborder='0'
src='https://a.tiles.mapbox.com/v4/hpearsa1.jklmo8pi/attr
ibution,zoompan,zoomwheel,geocoder,share.html?
=====>

☒ Zoom & P...

☒ Zoom Wh...

☒ Geocoder

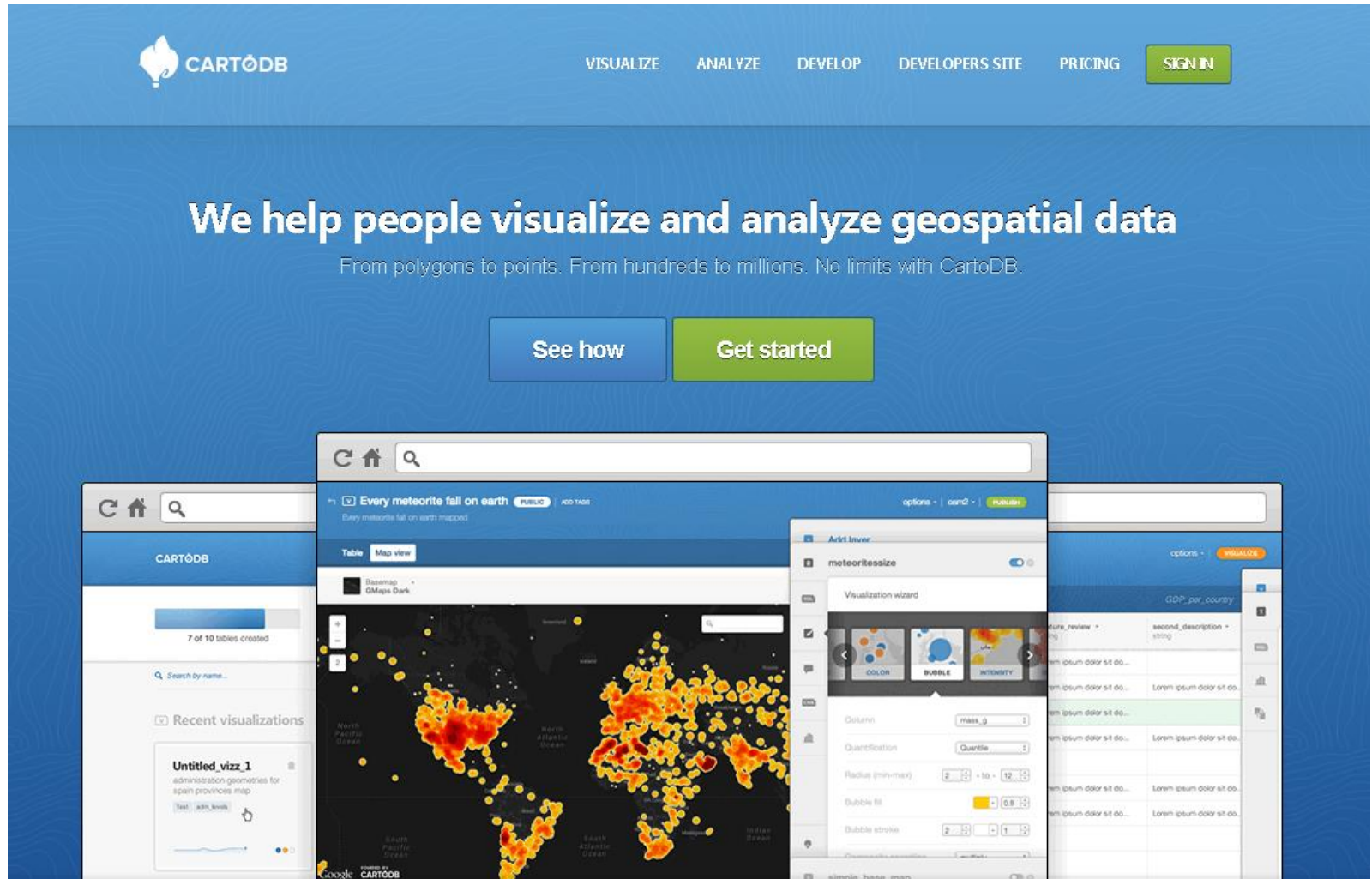
☒ Link

Start developing

Save your changes and grab the **Map ID** to integrate your project with your apps and sites.

[Learn more](#)

CartoDB



The image shows the CartoDB website header and a preview of its interface. The header is blue with the CartoDB logo on the left and navigation links (VISUALIZE, ANALYZE, DEVELOP, DEVELOPERS SITE, PRICING, SIGN IN) on the right. Below the header, a large blue banner contains the text "We help people visualize and analyze geospatial data" and "From polygons to points. From hundreds to millions. No limits with CartoDB." Two buttons, "See how" and "Get started", are centered below the banner. Below the banner, a preview of the CartoDB interface is shown, featuring a map of the world with orange and yellow data points, a table view, and a visualization wizard.

CARTODB

VISUALIZE ANALYZE DEVELOP DEVELOPERS SITE PRICING **SIGN IN**

We help people visualize and analyze geospatial data

From polygons to points. From hundreds to millions. No limits with CartoDB.

See how **Get started**

CARTODB

7 of 10 tables created

Search by name...

Recent visualizations

Untitled_vizz_1
administration geometries for spain provinces map

Table Map view

Every meteorite fall on earth **PUBLIC** ADD TAGS

Every meteorite fall on earth mapped

Basemap GMaps Dark

Visualization wizard

meteoritesize

Column: mass_g

Quantification: Quintile

Radius (min-max): 2 to 12

Bubble fill: 0.9

Bubble stroke: 1

simple_base_map

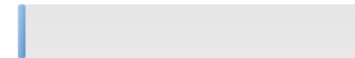
<http://cartodb.com/>



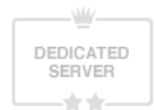
4 of 5 tables created



3.6 of 5.0 used megabytes



4 of 10K map views ?



Hey **appsnmaps**, looks like you're about to reach your account limit. Start thinking about [upgrading your plan](#).

🔍 Search by name...

Filter by tag ▾

T 4 tables created

Order by **modified** / created

samplesheet

PUBLIC

24 KB • 6 ROWS

temperature

PUBLIC

44 KB • 27 ROWS

Mapping Temperatures at Temple University

cities_by_population

PUBLIC

28 KB • 5 ROWS

crime

PUBLIC

3.46 MB • 3988 ROWS



New table

Uploading your own data

[illegible]

Browser tabs: [Inbox - hpearsal@temple...](#) | [samplesheet2 | CartoDB](#)

Address bar: <https://apps.nmaps.cartodb.com/tables/samplesheet2/>

Page header: **samplesheet2** PUBLIC | ADD TAGS | options | **VISUALIZE**

add a description...

Table | Map view

cartodb_id - number	the_geom geometry	books - string	city - string	name - string	obs - string	state - string	street - string	zip - string	created_at - date
1	null	50	Philadelphia	Community Center	1	PA	1115 W Berks	19122	2013-10-03T20:14:22+02:00
2	null	75	Philadelphia	School	2	PA	1750 North 12th Street	19122	2013-10-03T20:14:22+02:00
3	null	100	Philadelphia	School	3	PA	1701 North 8th Street	19122	2013-10-03T20:14:22+02:00
4	null	150	Philadelphia	Shelter	4	PA	1850 North Croskey Street	19122	2013-10-03T20:14:22+02:00
5	null	50	Philadelphia	Library	5	PA	1700 West Montgomery Avenue	19122	2013-10-03T20:14:22+02:00
6	null	75	Philadelphia	Library	6	PA	2320 Cecil B Moore Avenue	19122	2013-10-03T20:14:22+02:00

Options menu:

- Export...
- Georeference**
- Duplicate table...
- Merge tables
- Append data...
- Delete this table...

Address bar: <https://apps.nmaps.cartodb.com/tables/samplesheet2/#/georeference>

Taskbar: Windows 8 interface with icons for Chrome, File Explorer, PowerPoint, Search, Word, and other applications. System clock: 2:14 PM 10/3/2013.



Georeference your table

- ☐ I have lon/lat columns in my table
- ☒ I have one or more columns with the address

Specify columns to use for geocoding by adding them within brackets.

{street} {state} {zip} |

HINT You can add also extra text to make geocoding more accurate
(eg. {school}, New York, USA)

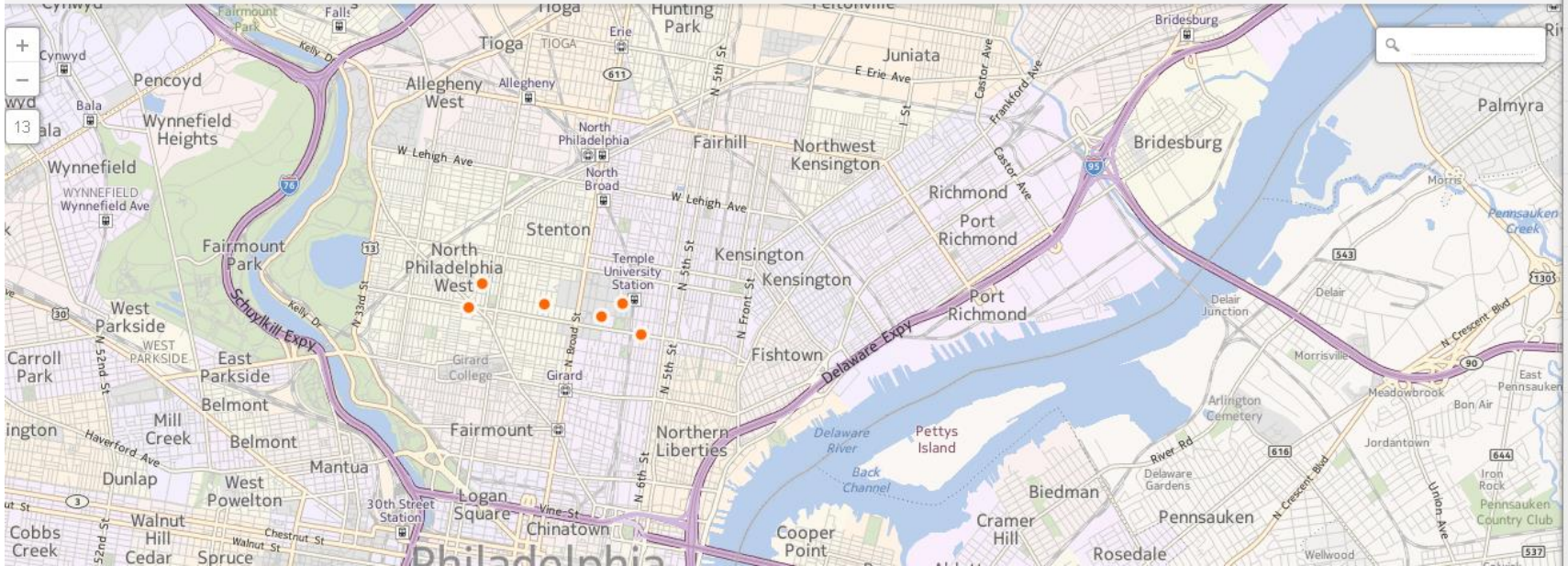
Cancel

Georeference

Table

Map view

Basemap
Nokia Day



options ▾

VISUALIZE

+ Add layer

1 samplesheet2

SQL

Visualization wizard

SIMPLE

CATEGORY

BUBBLE

There are no numeric columns on your table to make a bubble visualization. If you have numbers on your table, but you don't see them here is likely they are set as String.

T

samplesheet2

PUBLIC

ADD TAGS

add a description...

Table

Map view

cartodb_id ▾	the_geom GEO	books ▾	cartodb_georef
number	geometry		boolean
1	point		true
2	point		true
3	point		true
4	point		true
5	point		true
6	point		true

Order

ASC

DESC

Rename column...

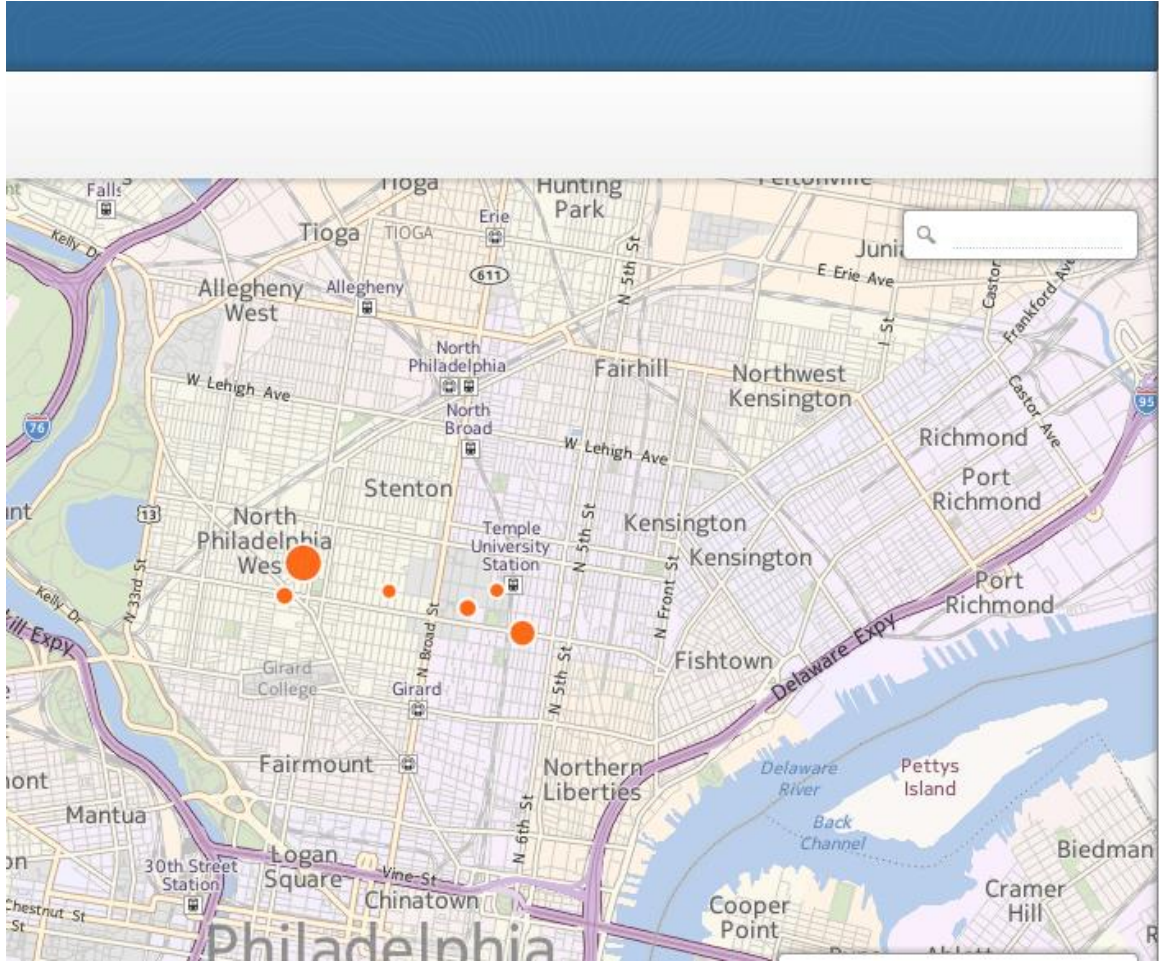
Change data type...

Georeference...

Add new column...

Filter by this column

Delete this column



1 samplesheet2

Visualization wizard



SIMPLE



CATEGORY



BUBBLE

Column

books

Quantification

Quantile

Radius (min-max)

10 - to - 25

Bubble fill

0.9

Bubble stroke

2 1

Composite operation

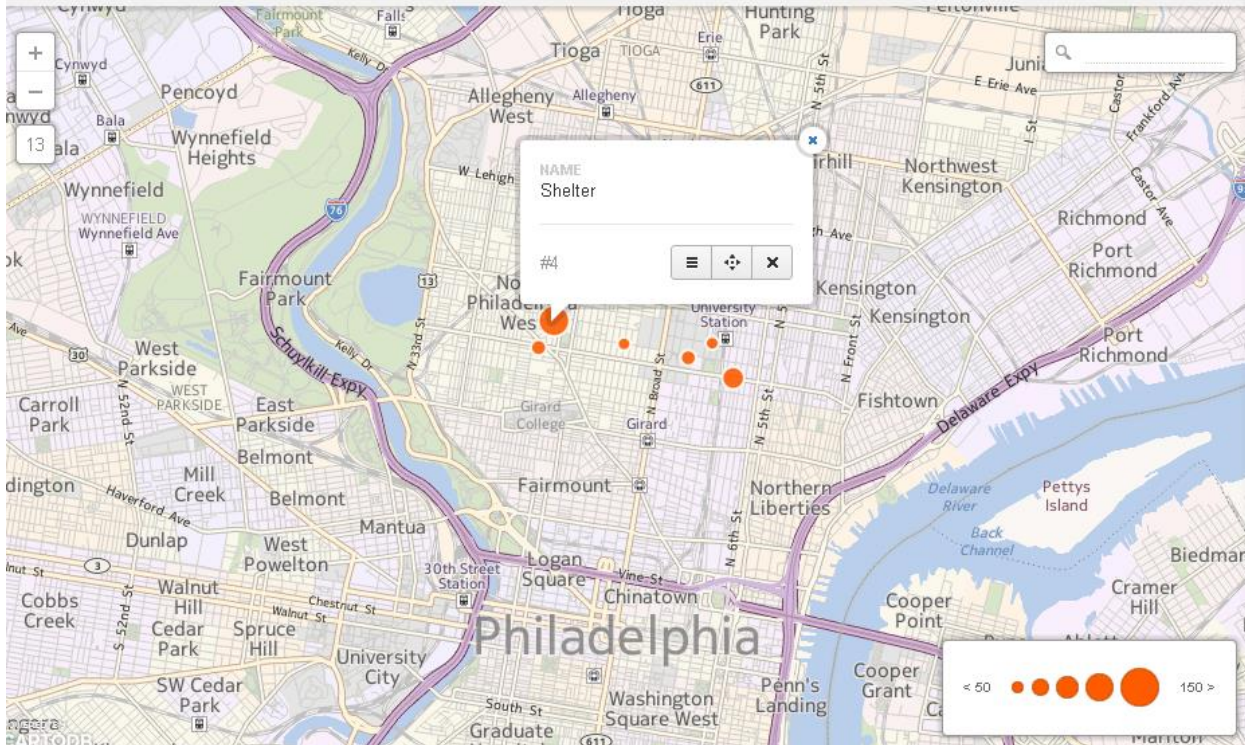
None

Table

Map view

Basemap

Nokia Day



+

Add layer

1

samplesheet2

Design

light

SQL

CS

Bar

Map

books

title?

☐

city

title?

☐

name

title?

☒

obs

title?

☐

state

title?

☐

street

title?

☐

zip

title?

☐

all

☐

Save your visualization

A visualization is a mix of layers, styles and sql. Your visualizations are now accessible from your dashboard.

If you want to share your map you need to create a visualization.

[Cancel](#)[Create visualization](#)[+ Add layer](#)**1** samplesheet

Design

: books

: city

: name

: obs

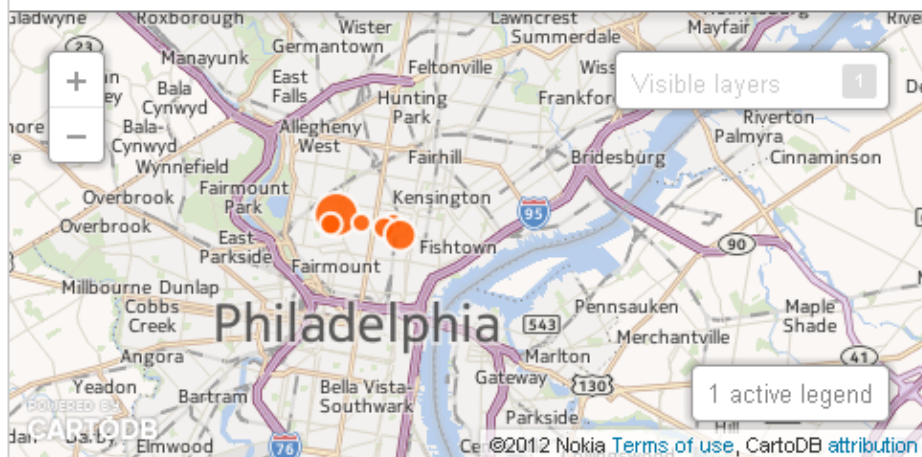
: state

: street

: zip

Publish your visualization

test



COPY AND PASTE THIS CODE

<http://cdb.io/1aP36uQ>

URL

EMBED

API



Table name



Description



Search box



Shareable



Layer selector



Scroll wheel zoom



Legends

