

# **Open Data and Open Source Tools for Better Visualization**

**Sarah Cordivano**  
presentation at: [ph.ly/nacisopen](http://ph.ly/nacisopen)  
**@Mapadelphia**

# About Me



## **Education:**

Temple Univ & Univ of Penn

## **Work:**

*Current:* Data Analytics at Azavea

*Former:* GIS Specialist at City of Philadelphia,

## **Interests:**

Making Maps, Digging into Data, Open Data  
Advocacy

# Azavea



Founded in 2000

40+ people

Geospatial + web + mobile

Software development

Spatial analysis services

Certified



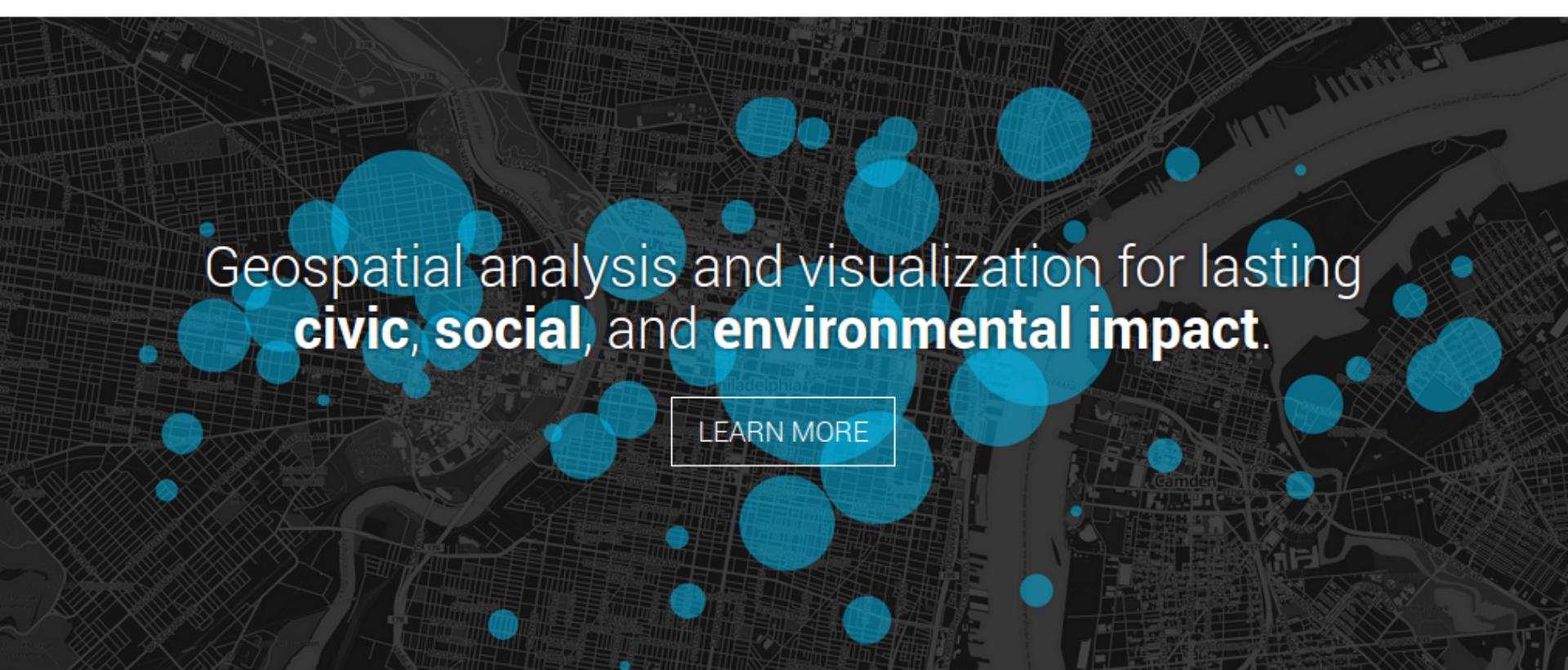
Corporation

[bcorporation.net](http://bcorporation.net)

# Data Analytics Team



ABOUT SERVICES CLIENTS FELLOWSHIPS GET INVOLVED CONTACT



Geospatial analysis and visualization for lasting  
**civic, social, and environmental impact.**

A large, semi-transparent black rectangular overlay covers the central portion of the map. Overlaid on this are numerous semi-transparent blue circles of varying sizes, creating a sense of data points or locations. A smaller, solid white rectangular button with the text "LEARN MORE" is positioned in the lower center of the overlay area.

# Summer of Maps



## AZAVEA **SUMMER** *of* **MAPS**

\$5,000 Fellowship for Student GIS Analysts

Work on pro-bono projects for nonprofits

Mentored by Azavea Staff

*"The Summer of Maps fellowship was an amazing experience! The opportunity to work alongside inspiring non-profits and experienced mentors was hugely rewarding and educational. This program pushed us to grow not only as a GIS analysts, but also as effective communicators and critical thinkers."*

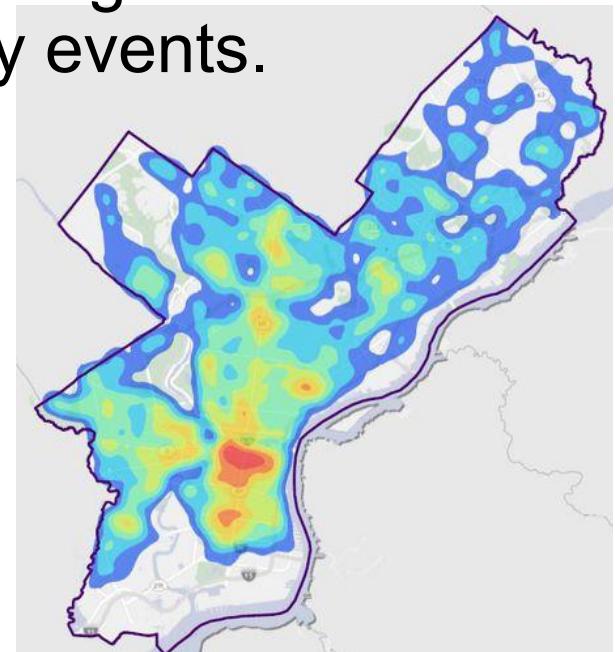
- Tim St. Onge 2014 Fellow

# GeoPhilly

# GEOPHILLY

Building community around map making in Philadelphia: 450 members, monthly events.

- Workshops
- Happy Hours
- Film Screenings
- Lightning Talks
- Conferences



# Open Data is Better Data

When governments open data, everyone wins.

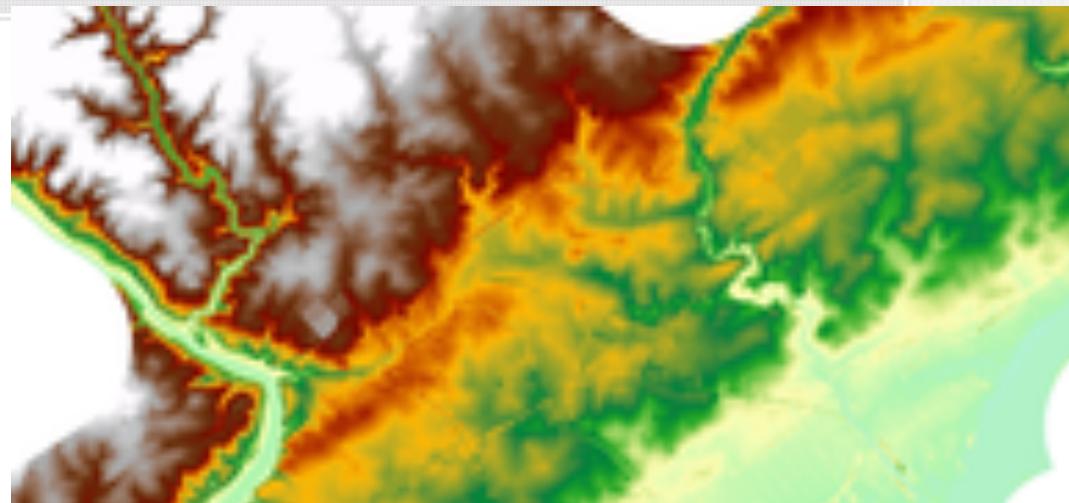
[Logout](#)

open  
data  
PHILLY

## Connecting people with data

Data on the Philadelphia region is plentiful. Search and find that data on OpenDataPhilly and begin transforming your city.

[Search for data](#)



# Data Procurement: Process

## Old School:

Project > Procurement Process > Vendor > \$\$\$ > Internal Use Only >  
Data Gets Old

## New School:

Project w/ Open Requirements > Procurement > Vendor > \$\$\$ > Built to  
be Open > Updates made > Internal and External Parties Benefit

Land Cover Data



# Land Cover Data

Art Museum

Eakins Oval

B Franklin  
Parkway

Rodin

Barnes

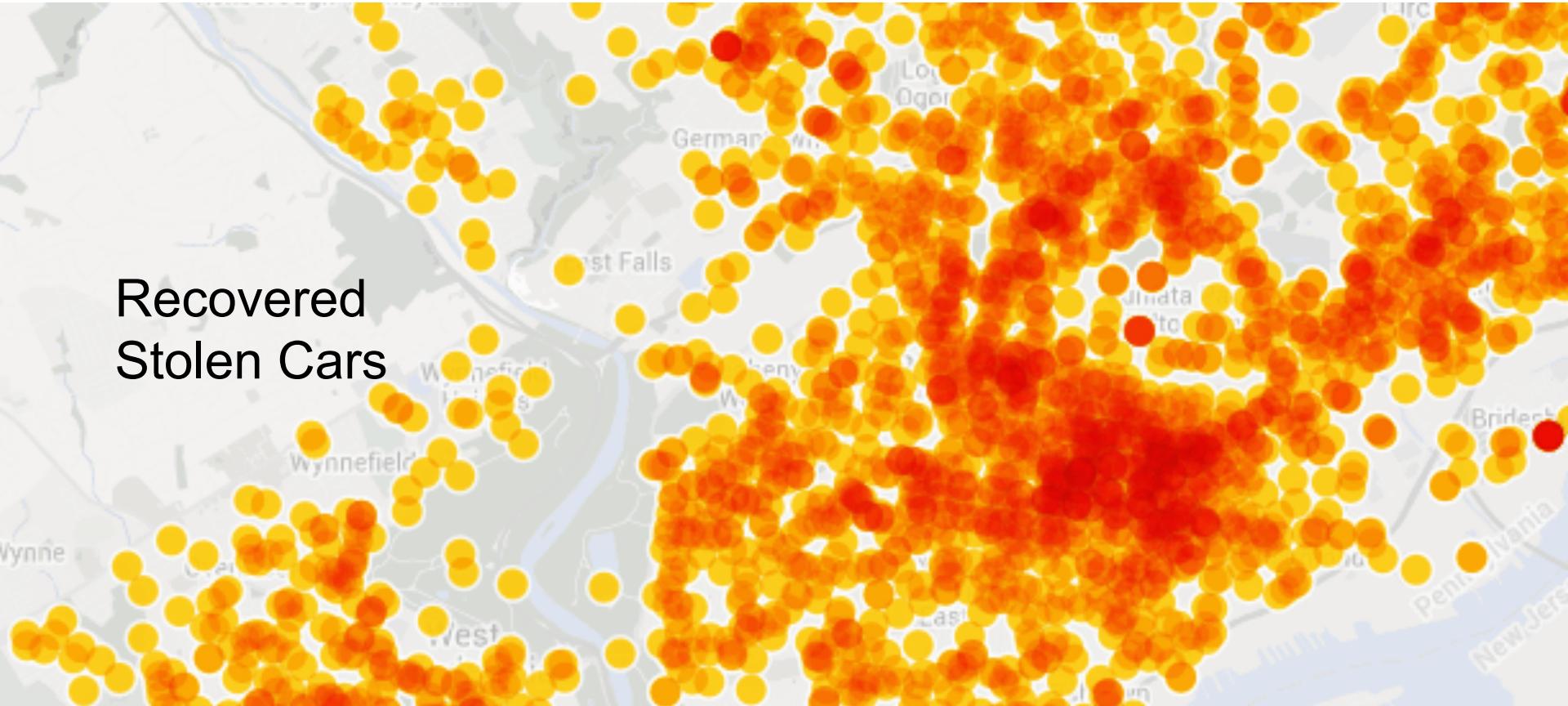


# Data is Opportunity



Impervious  
Surfaces

# Improve Data: Tracking Auto Thefts



Recovered  
Stolen Cars

Shining light on a closed door process finds errors / redundancies and improves data. (Economic benefits included at no extra cost!)

# Invite the Civic Community to Help!

Civic hackers bring  
a new perspective  
and the interest to  
explore the data.

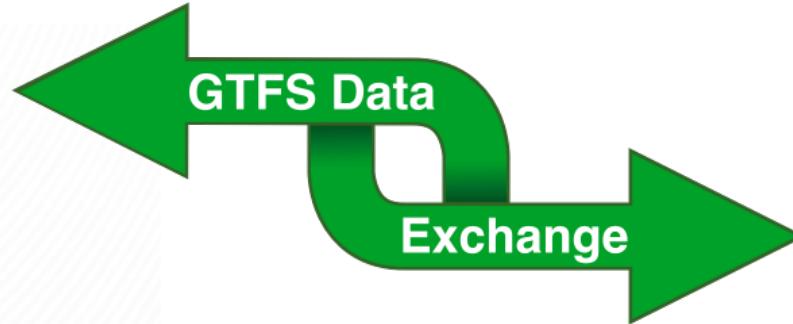
The screenshot shows a GitHub repository page for 'Chicago / osd-building-footprints'. At the top, there's a search bar with 'This repository' and 'Search' buttons, and navigation links for 'Explore' and 'Gist'. Below the header, the repository name 'Chicago / osd-building-footprints' is displayed next to a document icon. A navigation bar below the repository name includes 'Issues' (which is highlighted in blue), 'Pull requests', 'Labels', 'Milestones', and a 'Filters' dropdown. The main content area displays five open issues, each with a green exclamation mark icon and a title. The titles are: 'Upload using WGS84 for consistency across OSD', 'Damen L station replaces four buildings', 'Some buildings are broken multipolygons', 'Building trimmed too skinny', and 'Example images do not exist'. Each issue has a number (#) followed by the date it was opened and the user who created it.

Issue	Description	Opened By	Date
#5	Upload using WGS84 for consistency across OSD	tomschenkjr	Jun 13, 2013
#4	Damen L station replaces four buildings	iandees	Mar 13, 2013
#3	Some buildings are broken multipolygons	iandees	Mar 12, 2013
#2	Building trimmed too skinny	iandees	Mar 12, 2013
#1	Example images do not exist	vinc3m1	Mar 4, 2013

# Open Data Standards!

311 Data • Transit Data (GTFS) • Restaurant Inspection Data • Crime Data • Open Elections • Voting Information Project • Open Geospatial Catalog Standards • Land Records • Deeds • Air Quality • Water Quality

**Open311**  
Inquiry API



**CODE** for  
AMERICA



# We've made progress but we can do better.



# Why Open Source Tools?



## Old School (Proprietary)

Expensive proprietary software, tools, training, degrees, certifications, exclusionary practices

## New School (Open Source)

Community supported

Wonderful documentation

Free and comprehensive training documents

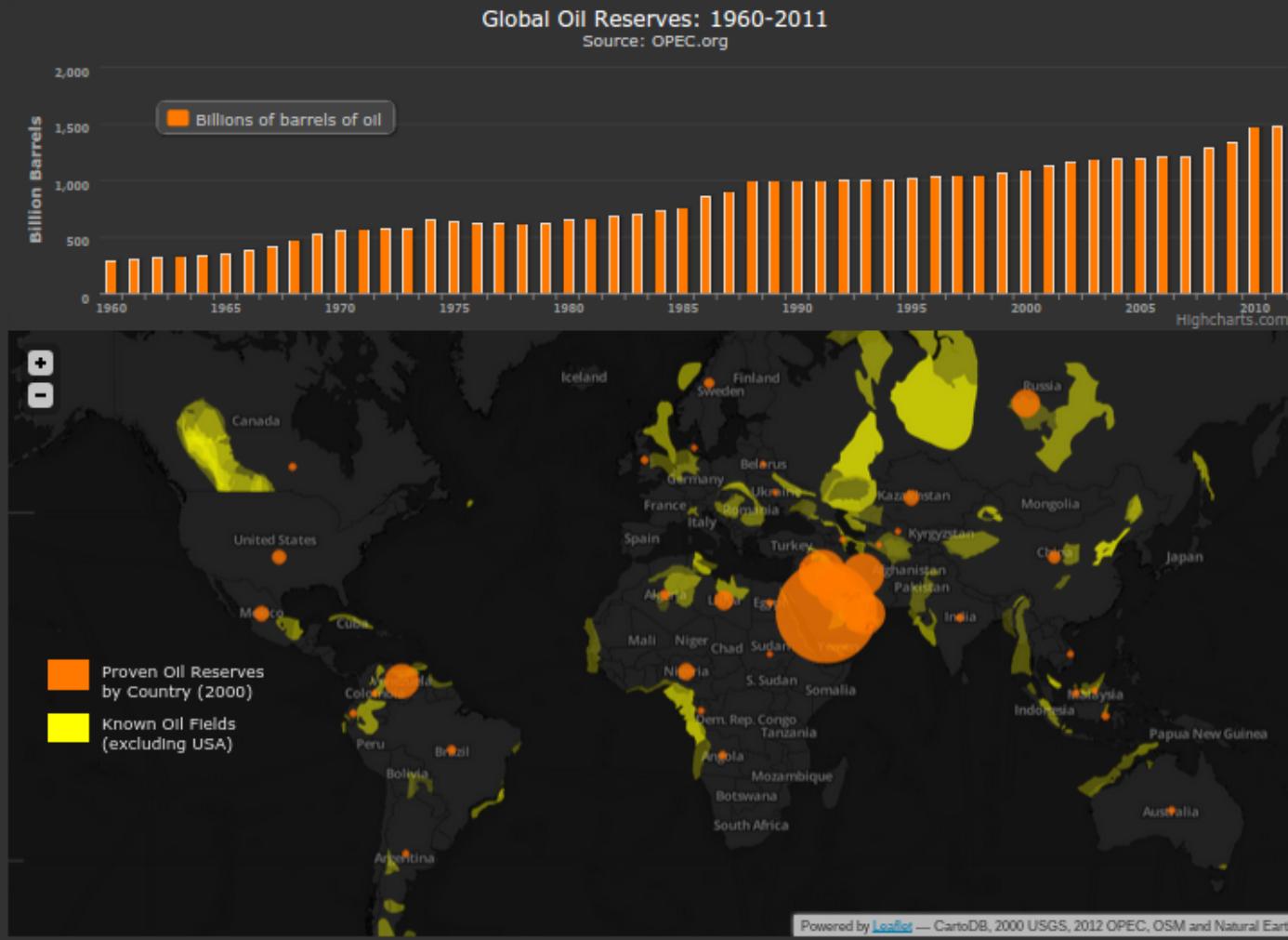
Collaborative approach

New audiences

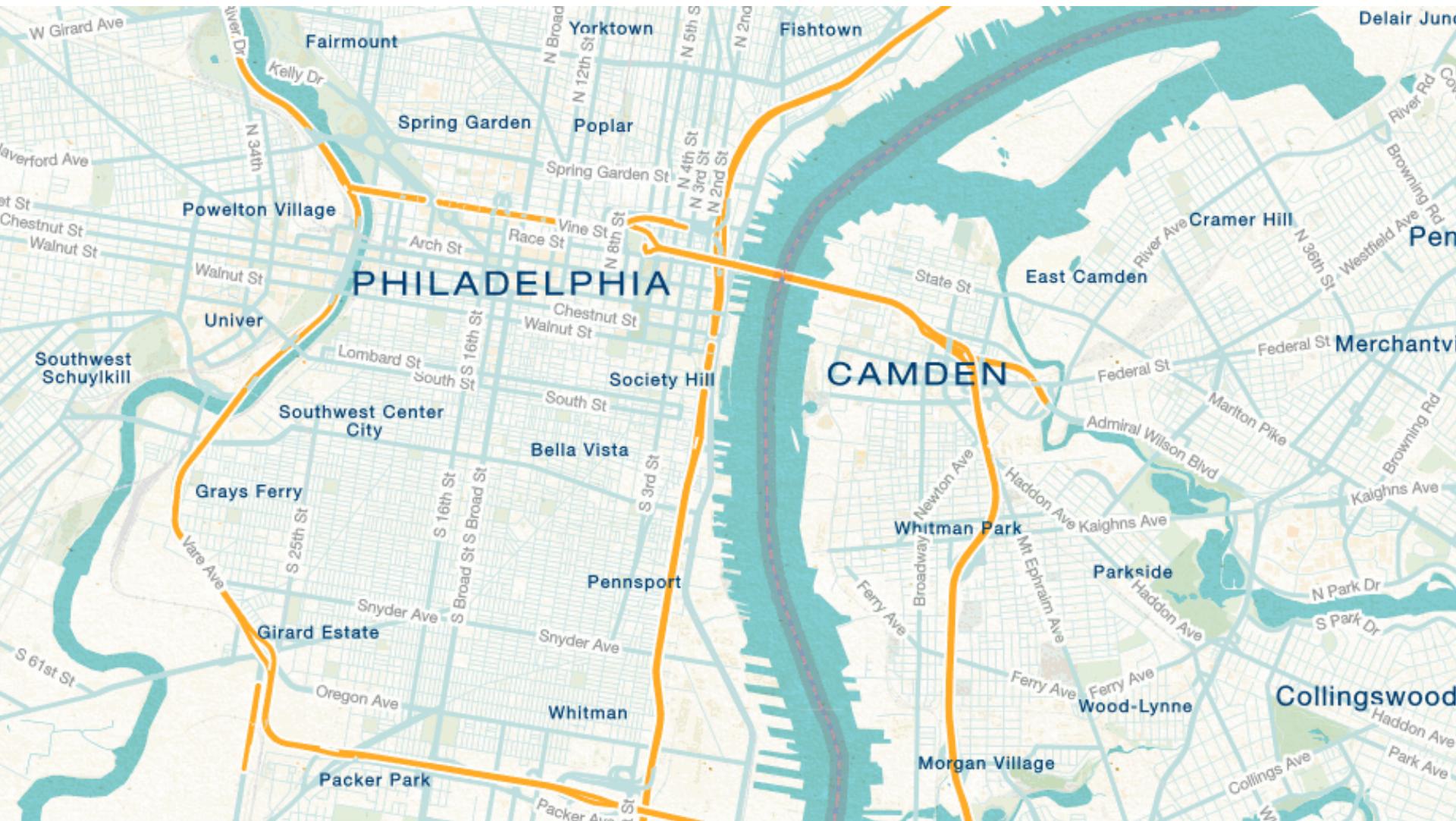
# Open Source Tools and Projects : an Incomplete List



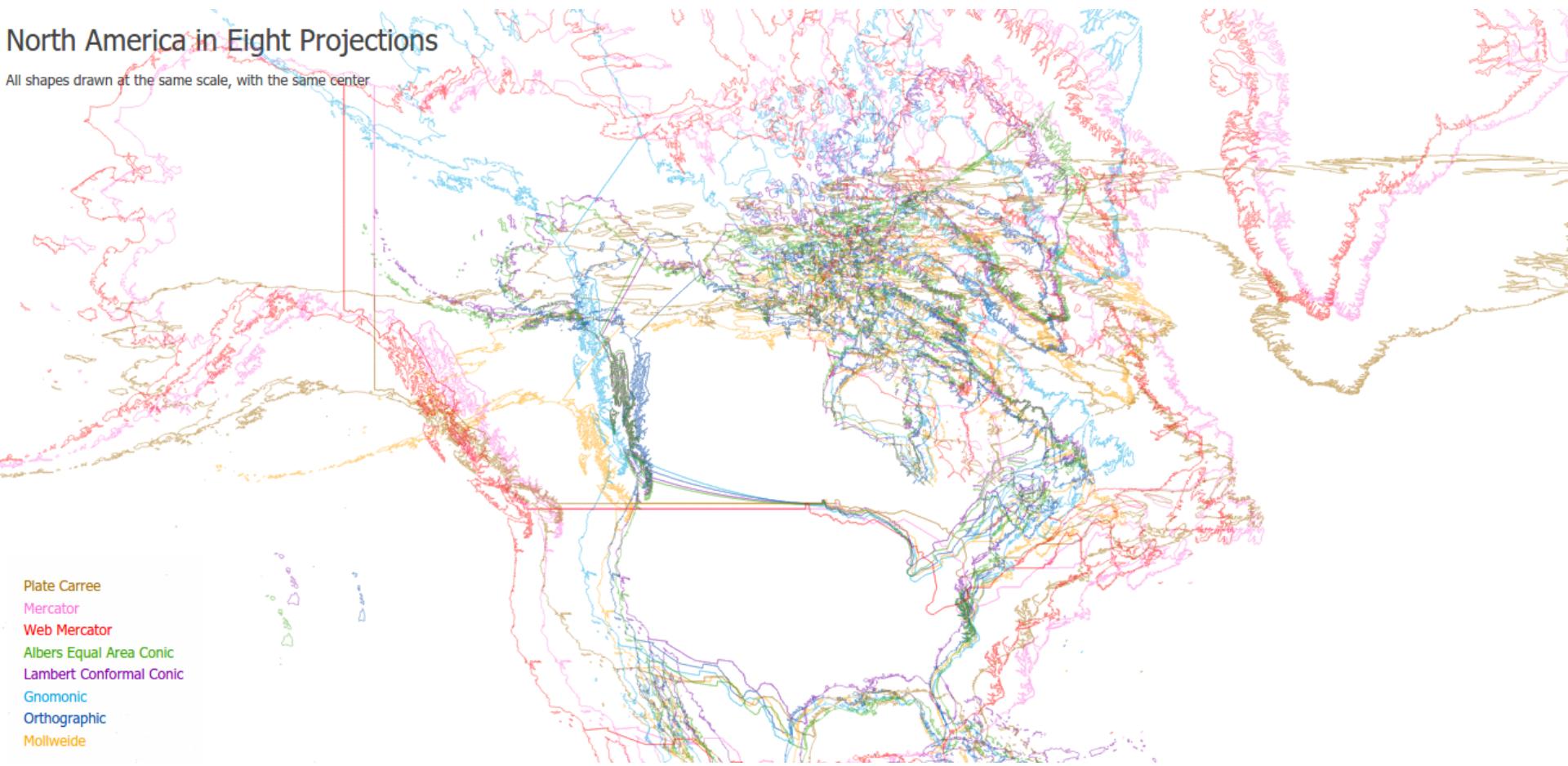
# Leaflet / HighCharts / CartoDB / PostGIS



# Mapbox Studio / Open Data

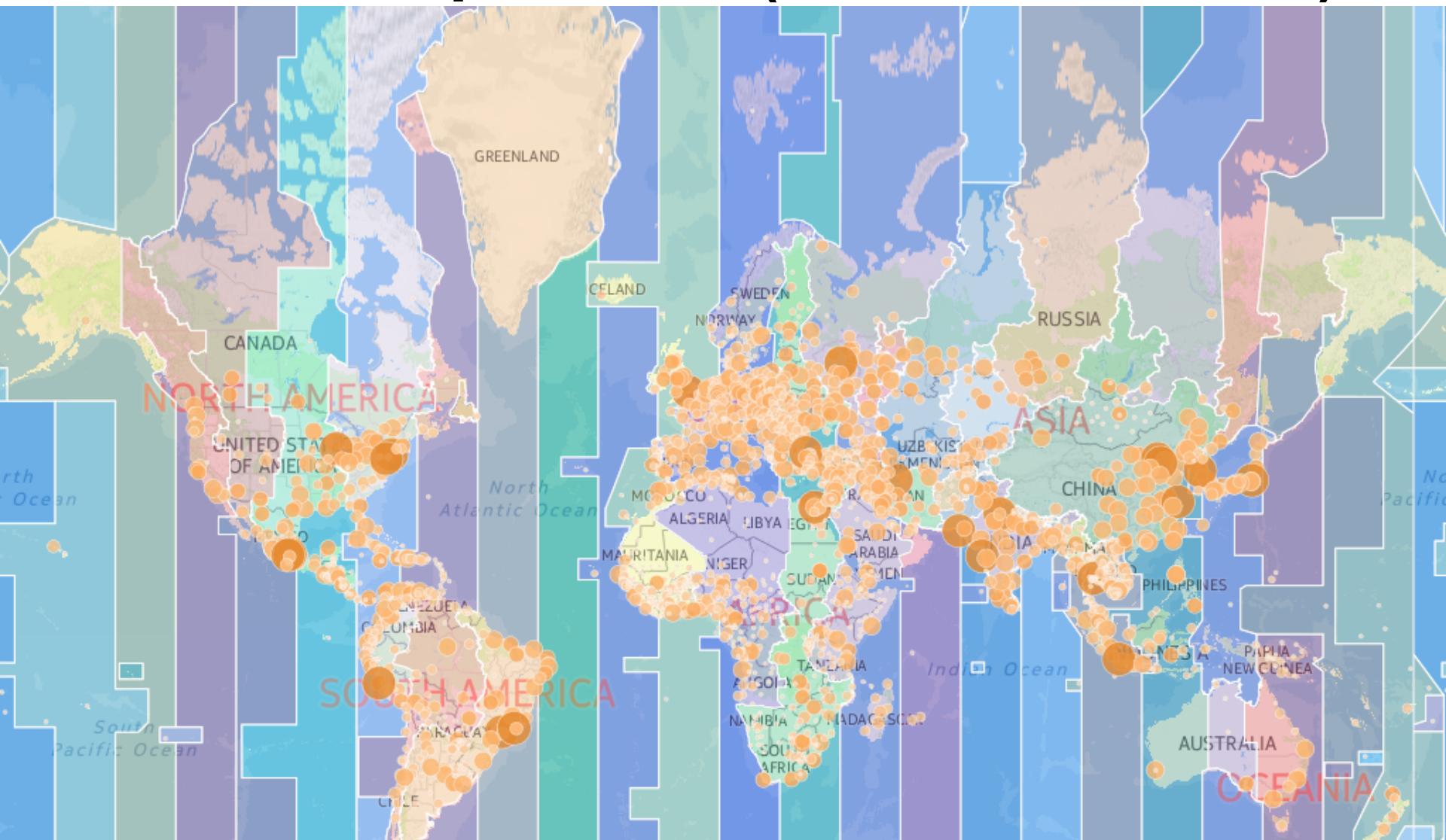


# Natural Earth Data / Code Open Sourced



John Branigan, Azavea <http://sandbox.azavea.com/projection-overlays/>  
<https://github.com/jbranigan/projection-overlays>

# CartoDB / Open Data (Timezone, Cities)



# Open is Not Perfect



## Open Data Shortcomings

- Infrequent/nonexistent updates
- Missing/incomplete metadata (field descriptions, source, contact)
- Uneven organizational adoption
- Data formatting inconsistencies (API, CSV, Shp, FGDB)

## Open Source Shortcomings

- Until recently, not great UI/UX
- Installation, set up difficulties
- Might not fulfill all analytical or design needs
- Industry encouragement to use proprietary tools

# Questions?

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