



# Map tiles are dead

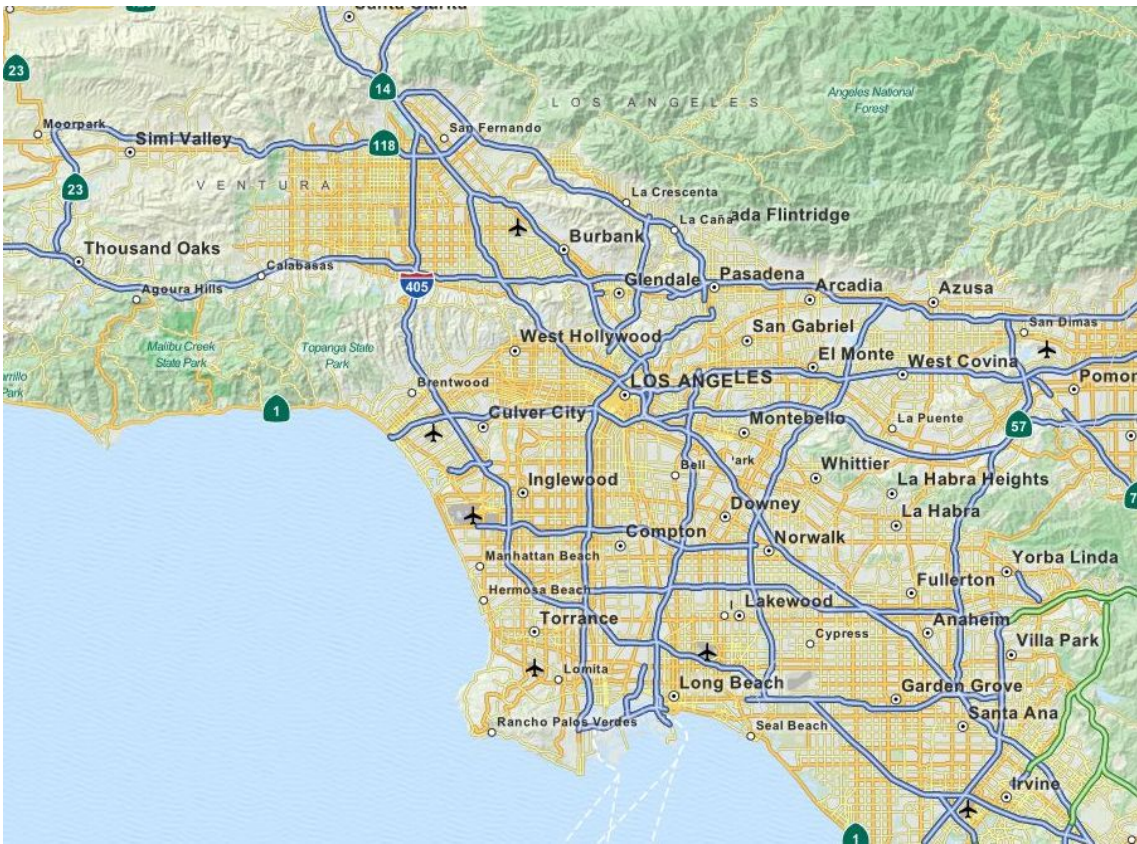
Long live map tiles

NICAR 2016

Ken Schwencke

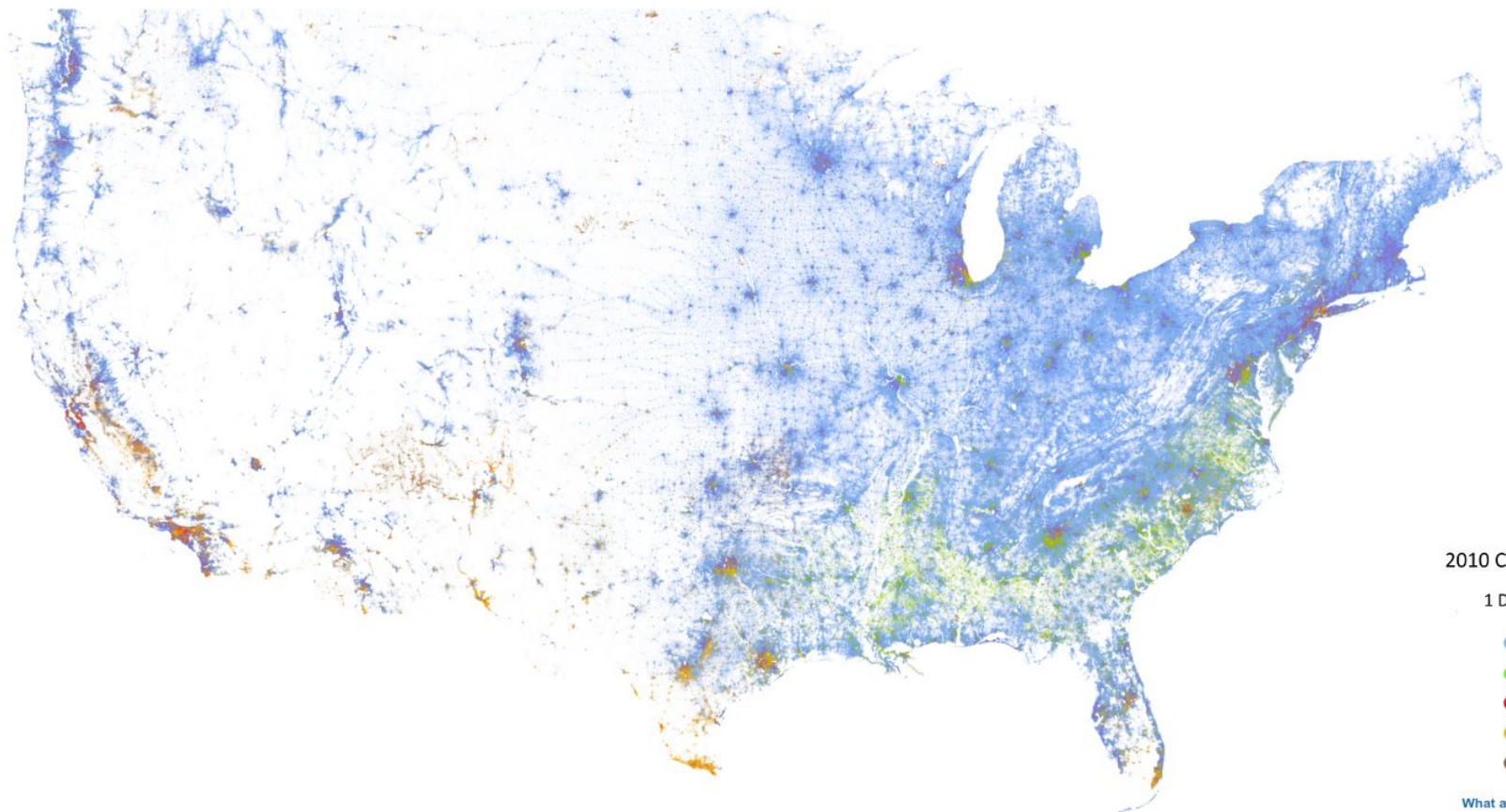
@schwanksta

This is a detailed map of the Los Angeles metropolitan area. The map shows the city of Los Angeles at its core, surrounded by numerous other cities and towns. Major highways are highlighted in red and blue, with route numbers like 5, 10, 15, 210, 405, and 60. The map also shows the Pacific Ocean to the west and south, and the San Gabriel Mountains to the east. Key locations labeled include Simi Valley, Thousand Oaks, Burbank, Los Angeles, and Anaheim. The map is a topographical representation, showing elevation and terrain features.









## 2010 Census Block Data

1 Dot = 1 Person

- White
- Black
- Asian
- Hispanic
- Other Race / Native American / Multi-racial

What am I looking at...?



# This is great!

one problem.




**FOR-**



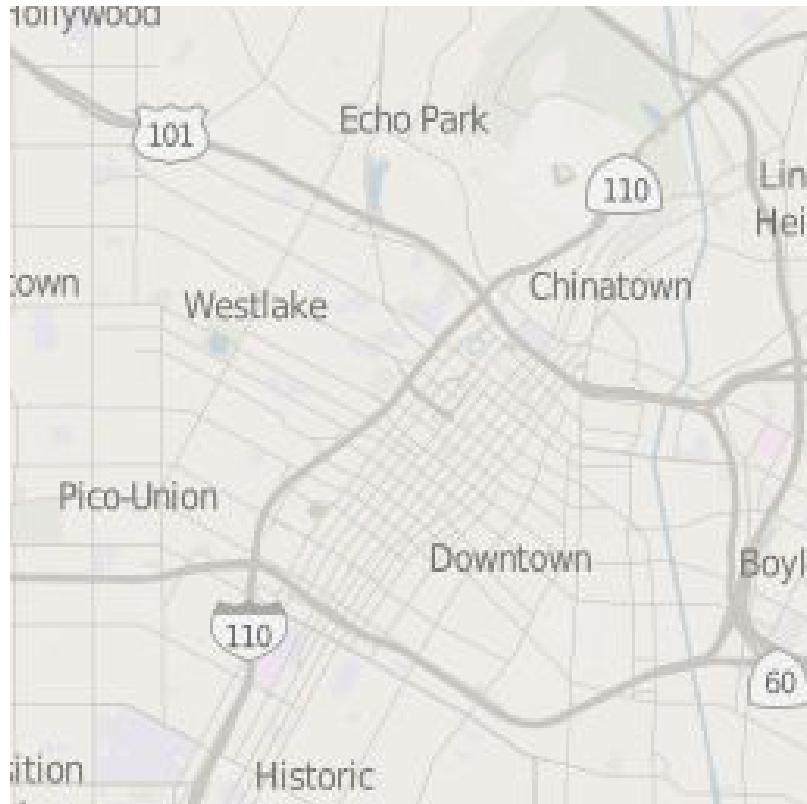
# So what is a vector tile?

- They're data! Think: Geojson
- Imagine taking a giant dataset -- say every census tract -- and slicing it up into squares for each zoom level. Each square only contains the data in that area.
- Further out zoom levels don't need as much detail. You don't need to see every twist and turn in a street from a wider view.
- Vectors scale! You don't need a tile for every zoom level -- if you zoom in, your map library can just scale the map data for you.
- So you run your data through a program:
  - **Tippecanoe** - <https://github.com/mapbox/tippecanoe> (hold for joke)
- And serve up the resulting mbtiles file:
  - **Tessera** - <https://github.com/mojodna/tessera>
- Put it behind Varnish! It caches just like any of your HTML or JSON files.

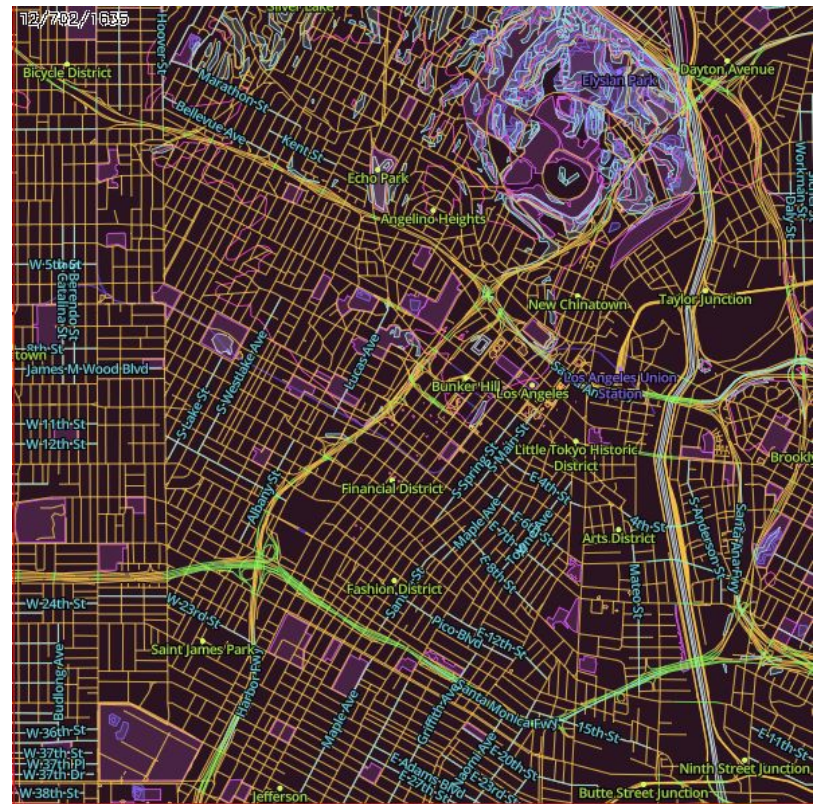


**41px<sup>2</sup> / 1.39%**

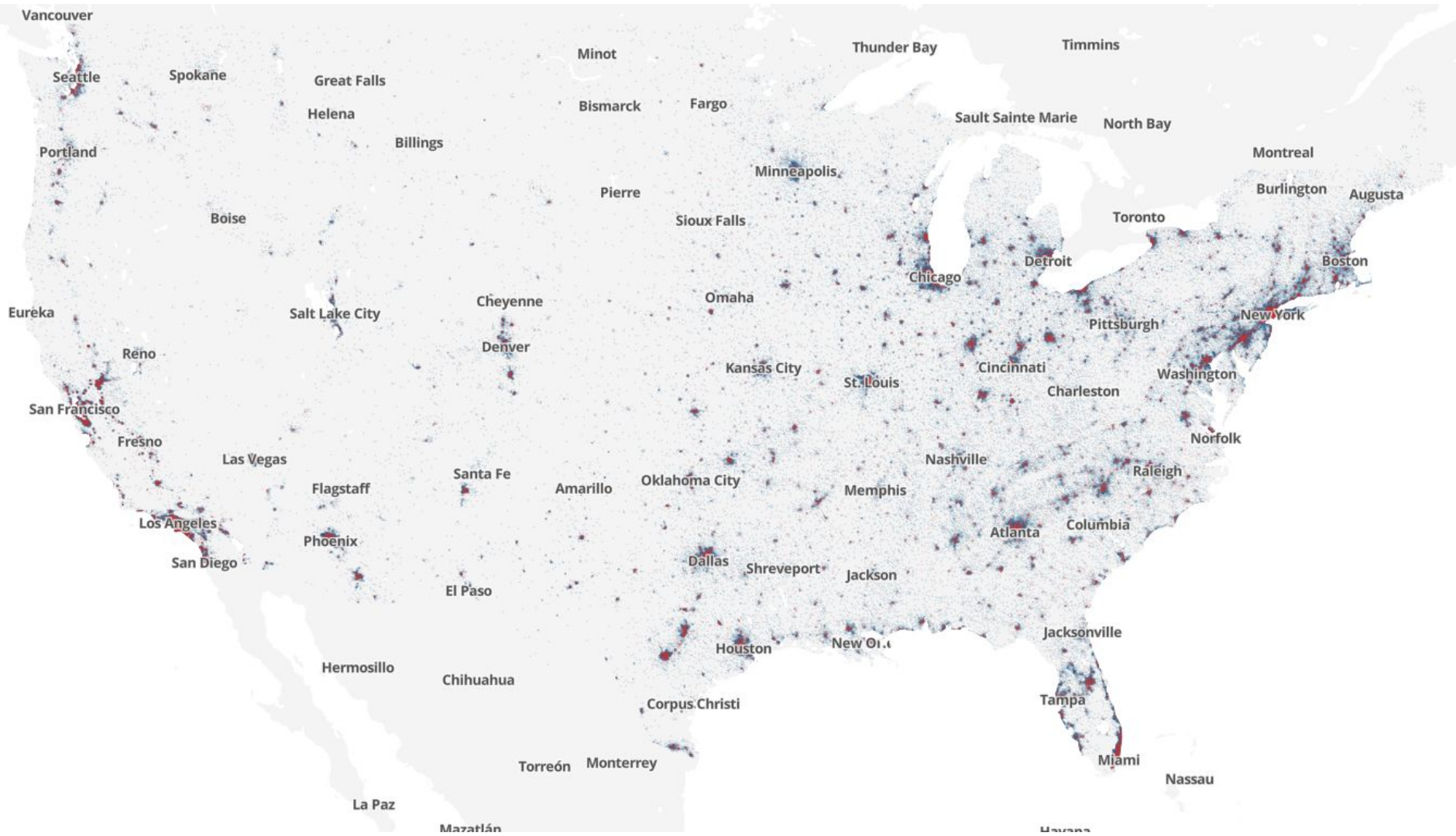




(23.3kb)



(13.1kb)



**Cheyenne**

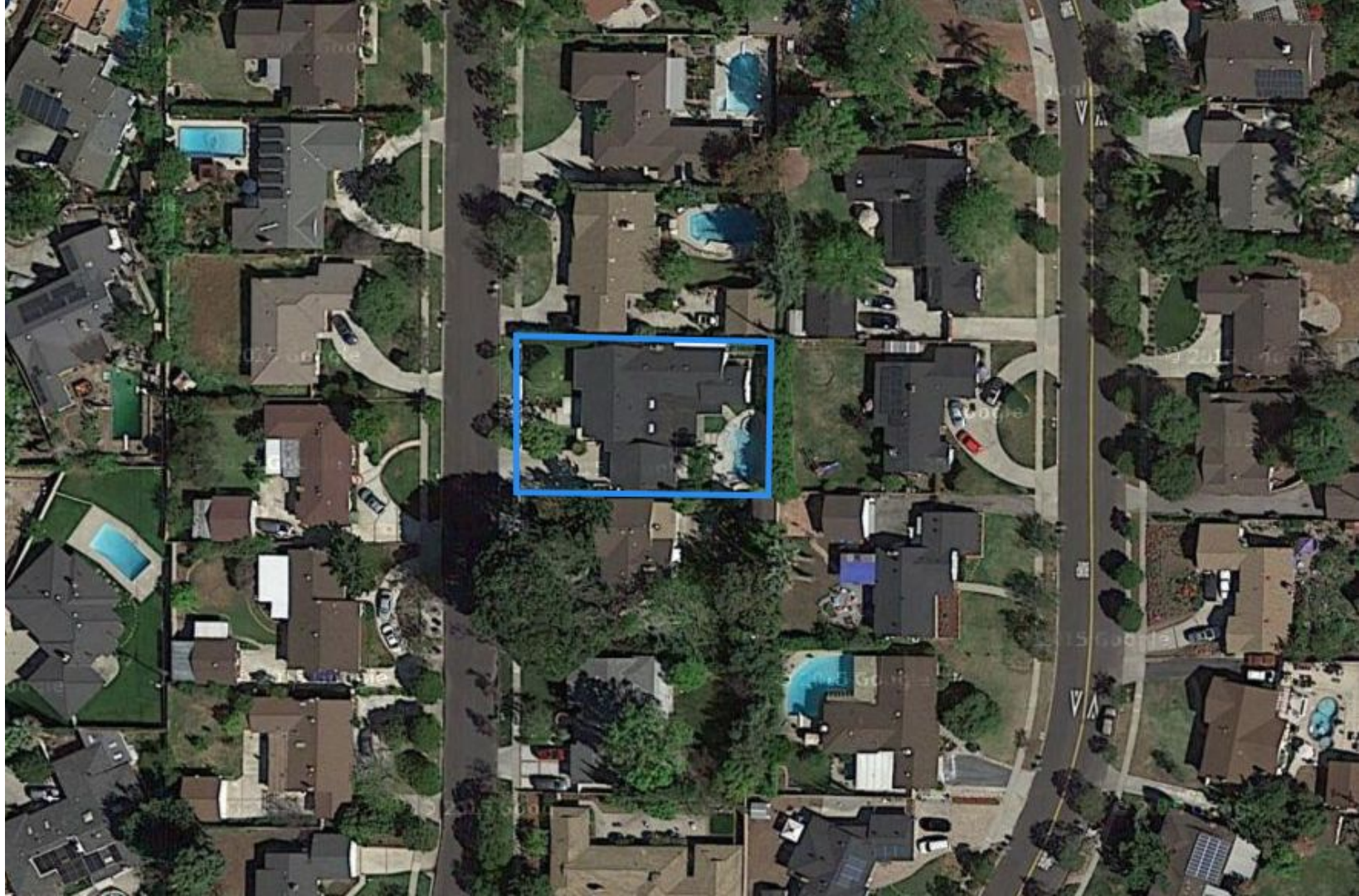
**Denver**















Monday

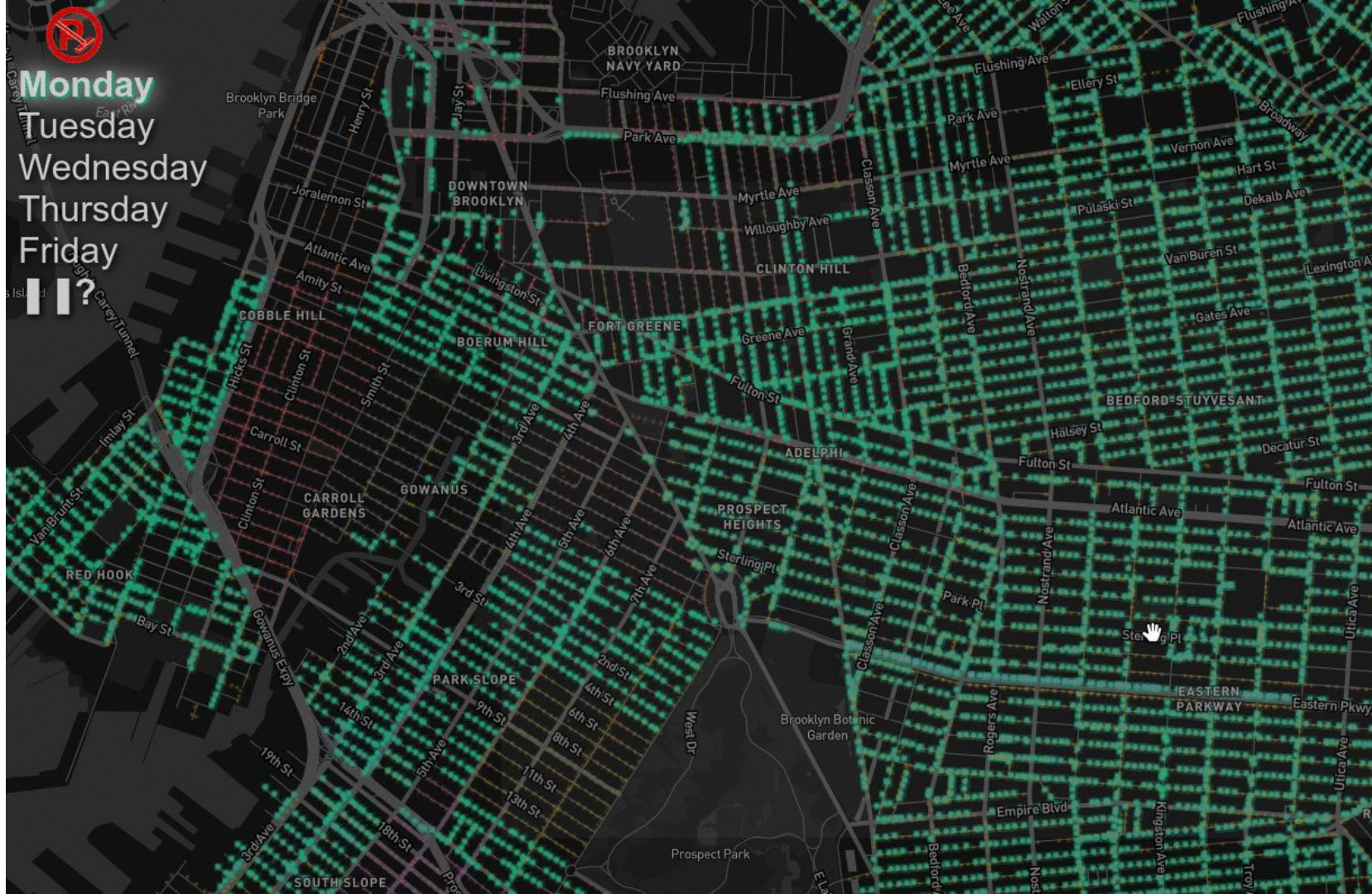
Tuesday

Wednesday

Thursday

Friday

|||?



## Vector tile sources:

- Mapbox
  - Metered use of their vector tiles service
    - Paid tier for more map views
  - An amazing design studio to generate styles
  - Mapbox GL JS is a great map library
- Mapzen
  - Free use of their vector tile service\*
  - Tangram, their map library, lets you use all the crazy features of WebGL

**THANKS!**