

# “Sliding” datasets

for more automated map tracing

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## **Goal:**

To make the merging of data into  
Open Street Map easier.

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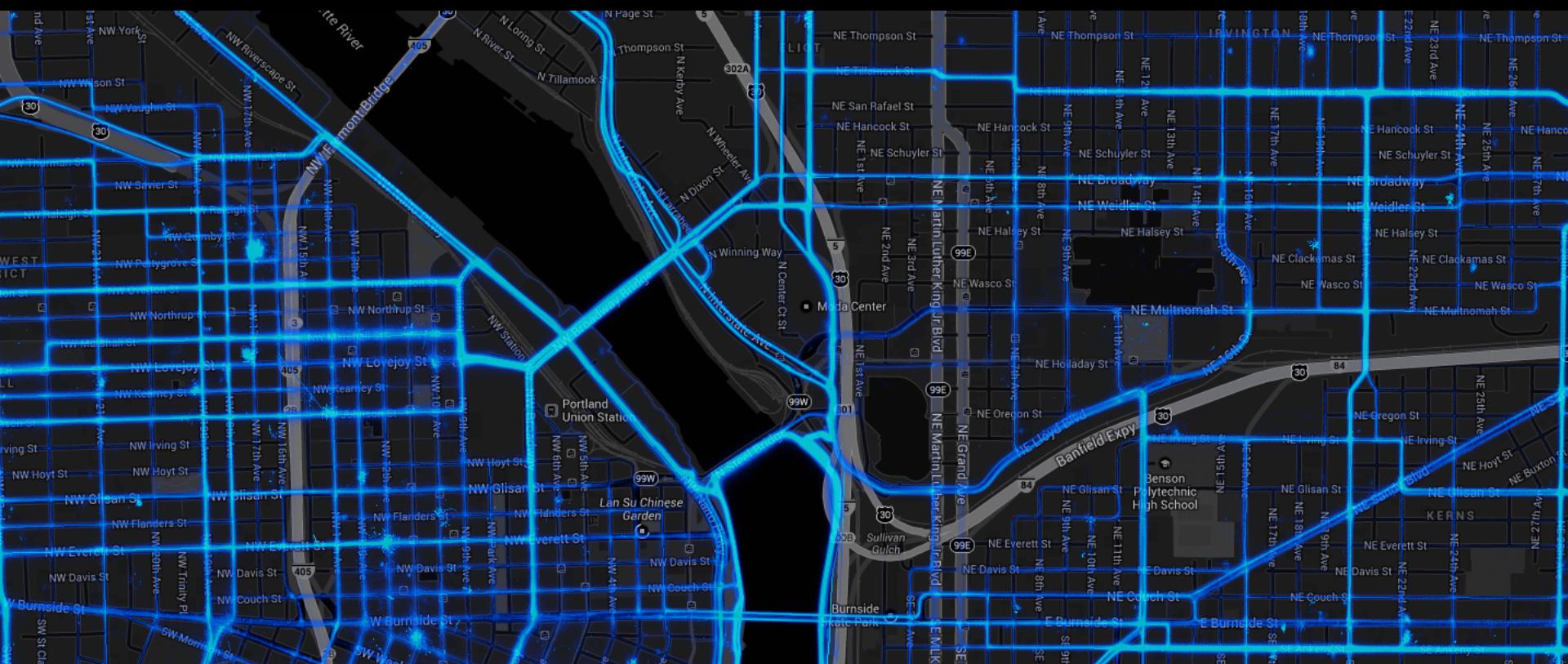
UI + Algorithm = Map Tracing Tool

Open Street Map?

Why not?

# Strava's Global GPS Dataset

- Billions of GPS points
- Millions of runs and ride



# What is Strava

- Fitness tracking website
- “An online network for athletes”
- 180 million rides and runs
- 2 million new activities a week



1

Grab a GPS Device



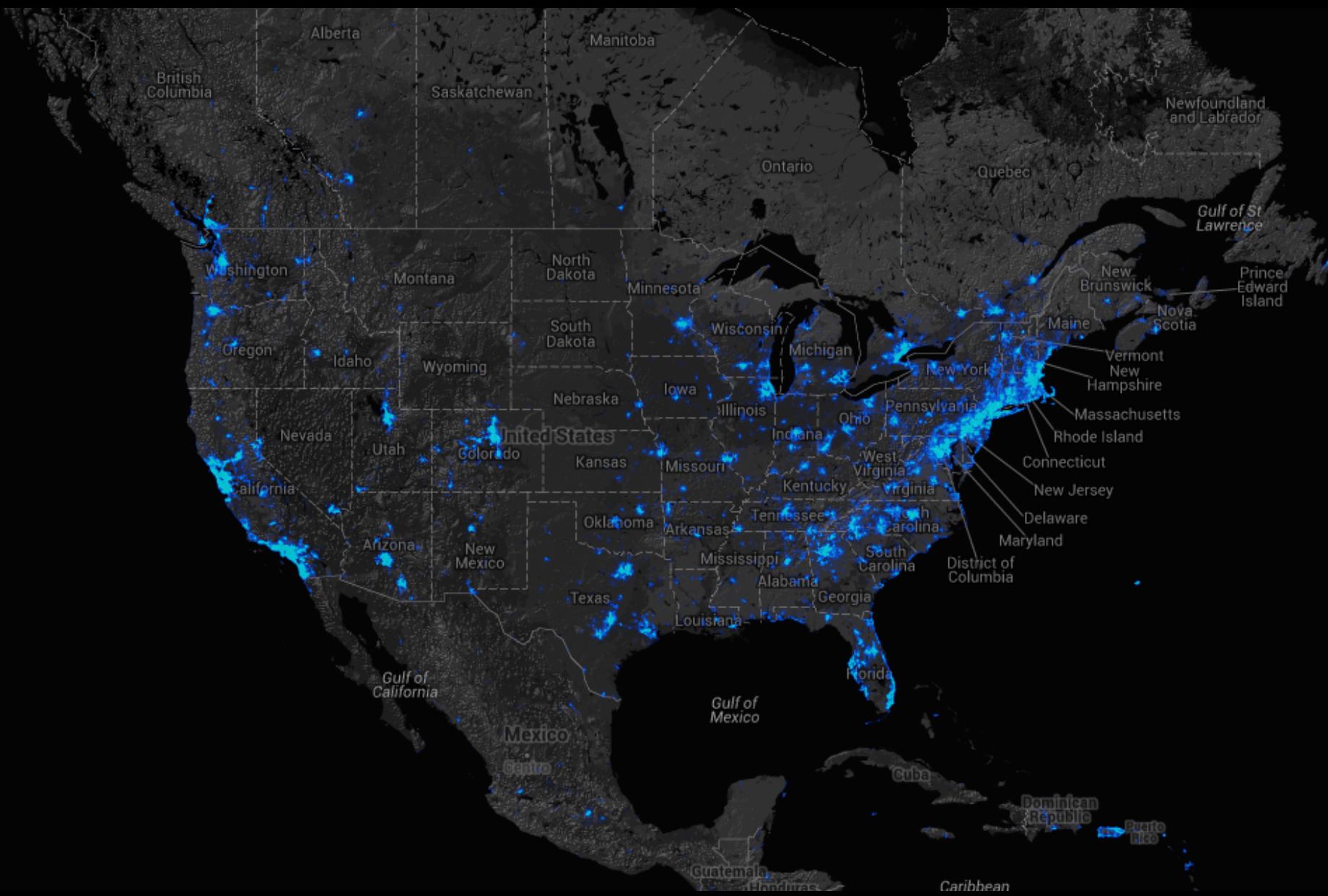
2

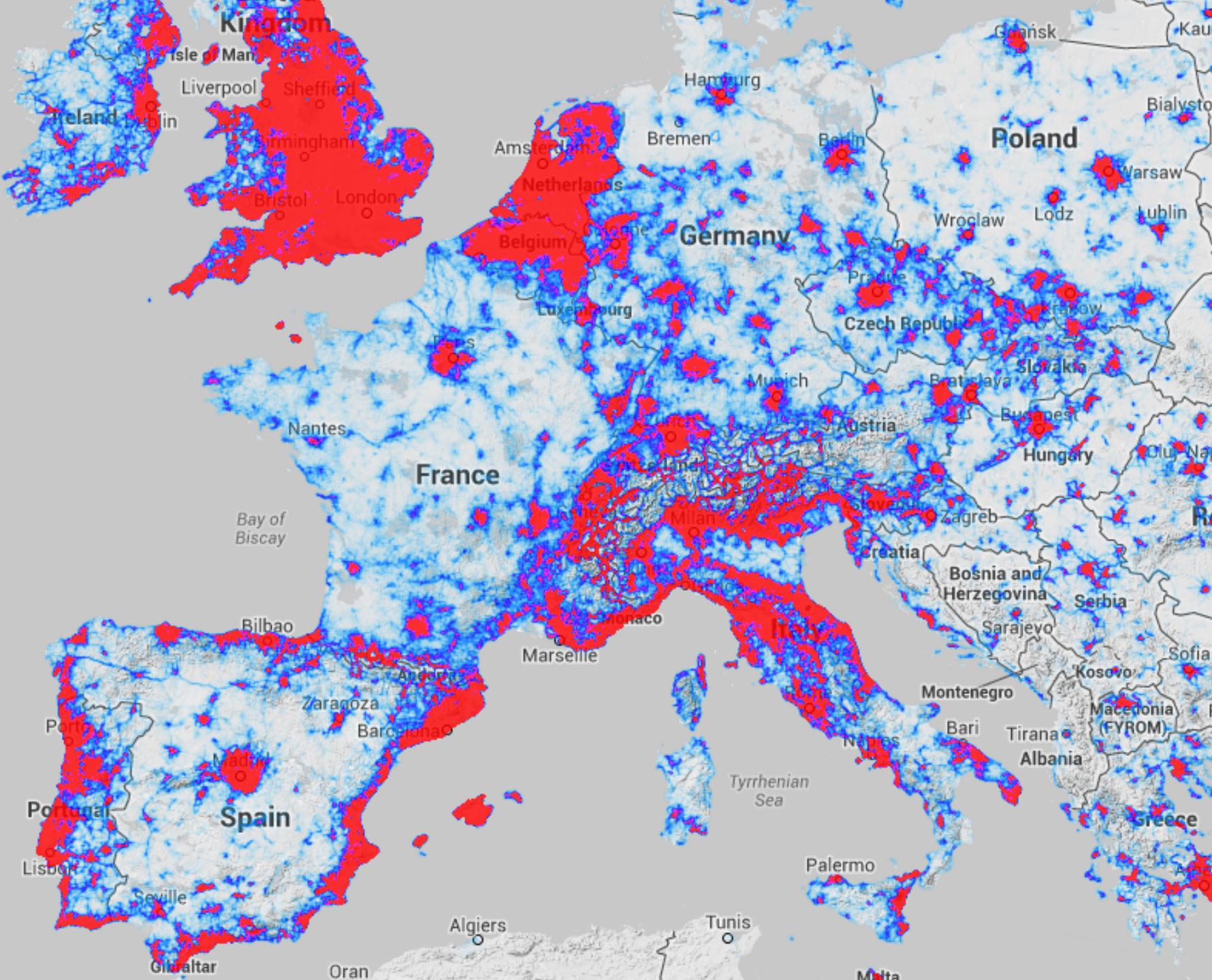
Go Out for a Run or Ride



3

View Your Activities  
on [Strava.com](http://Strava.com)







# Strava Heatmap

- 220 Billion points as of March 2014
- Run, ride and “both” versions
- available for browsing  
<http://labs.strava.com/heatmap>
- available for OSM tracing
  - JOSM preset
  - iD Editor <http://strava.github.io/iD/>

How can we use this data to improve The Map?



# Strava Metro

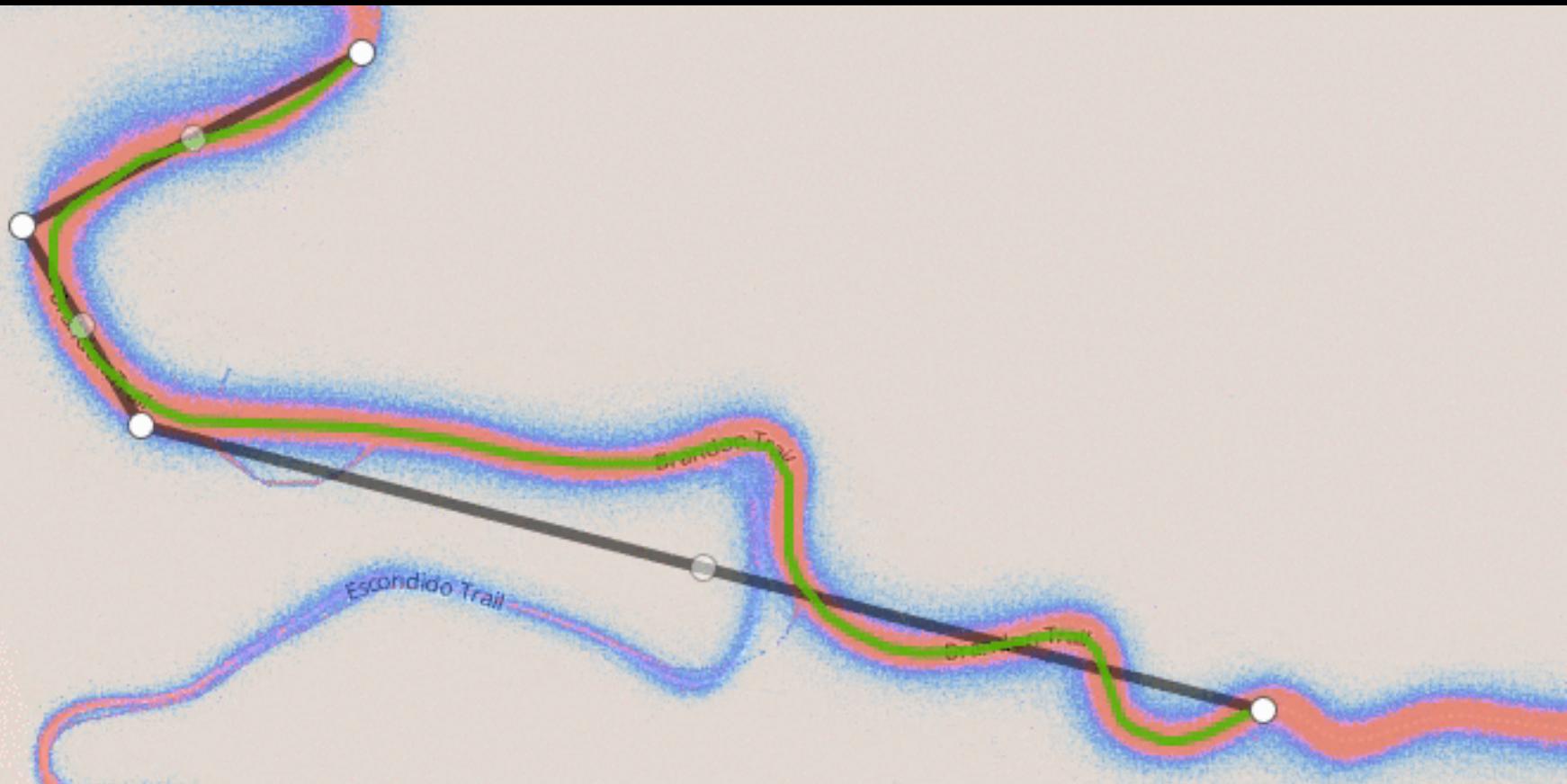
- To help cities improve bike infrastructure
- Map cycle counts to road networks
- GIS product

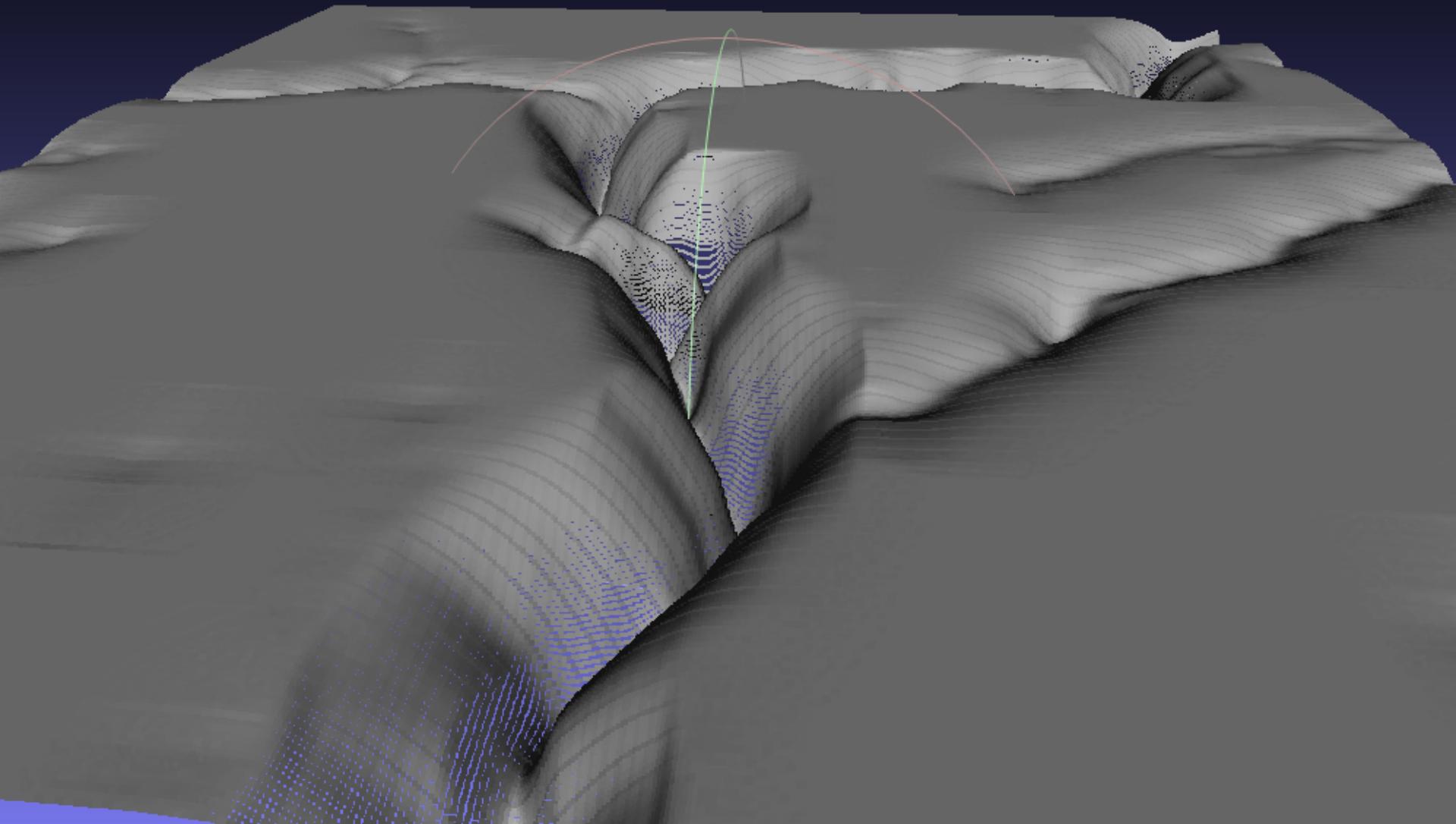
<http://metro.strava.com/>

# Slide

Code: <https://github.com/paulmach/slide>

Example: <http://labs.strava.com/slide/demo.html>





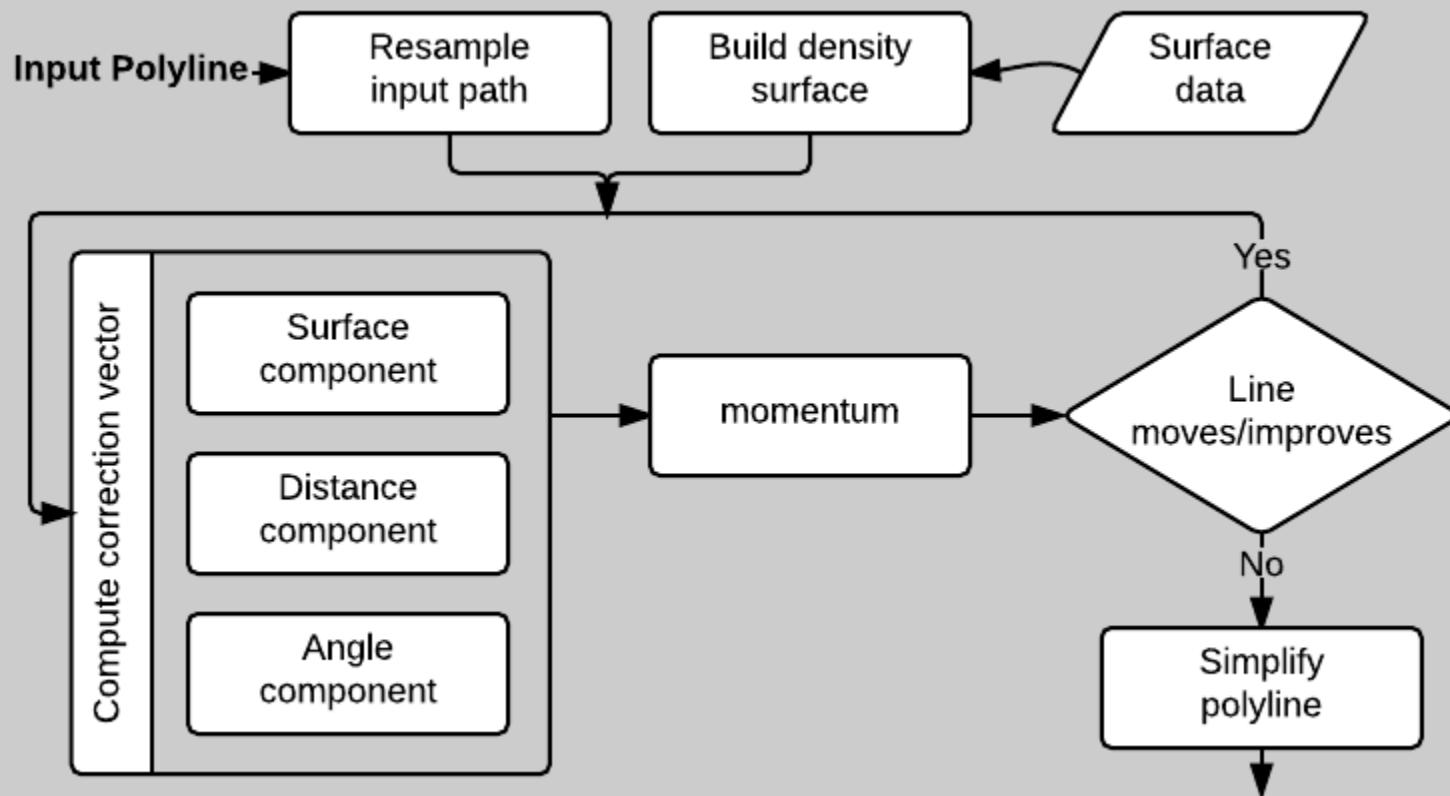
# Slide

Based on Mathematical Optimization

3 components to the cost function

- Depth with respect to the surface
- Equal distance between resampled points
- Maximize vertex angles

# Slide overview Slide



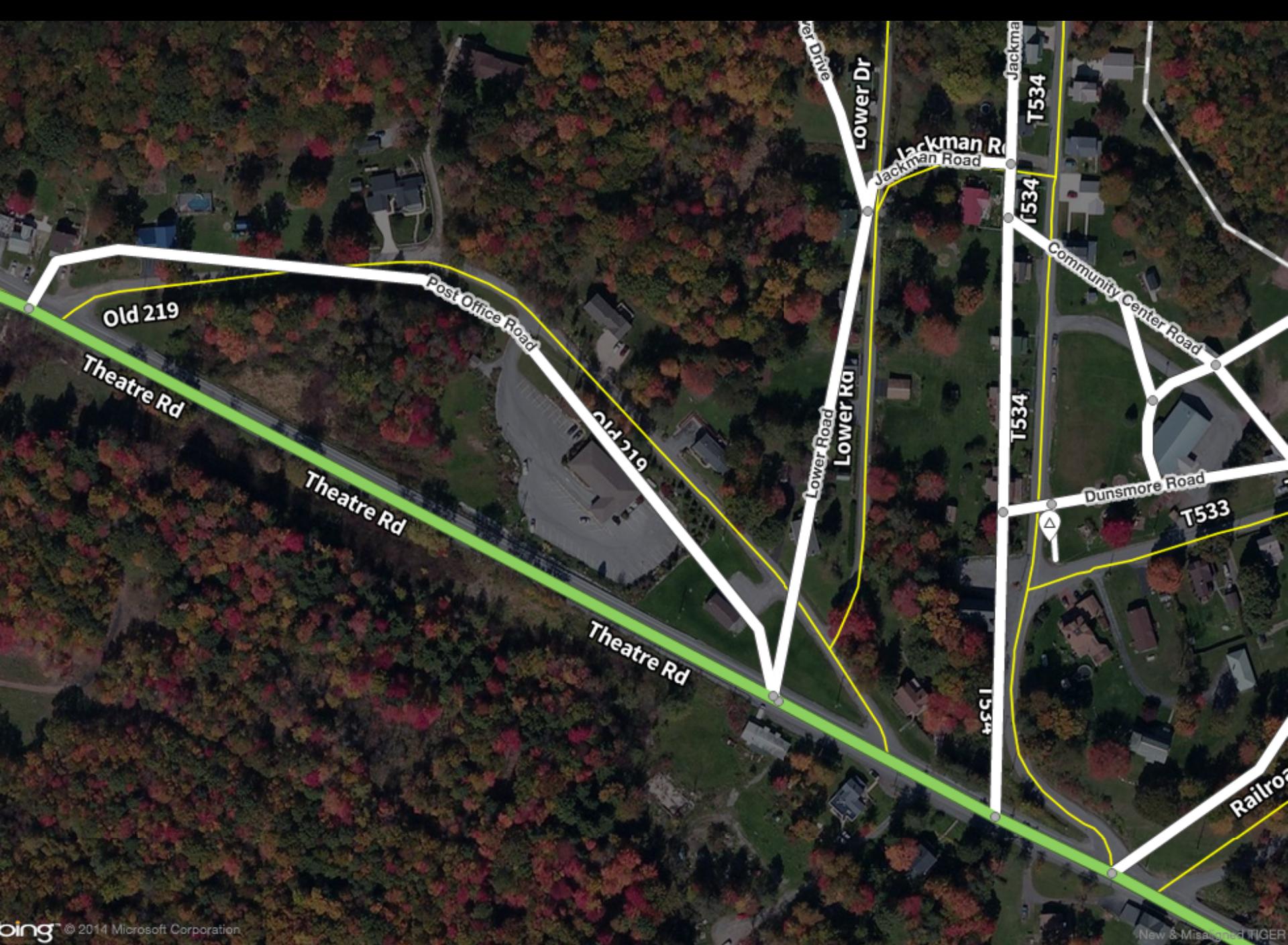
- Runs server side and is written in Go
- Can Leverages any raster like dataset
- Improves the path one step at a time
- Most slides complete in under 0.3 seconds

210 users, 6476 change sets in OSM

demo: <http://strava.github.io/iD/>

# Other Datasets

- Strava Heatmap
- TIGER
- OSM Traces
- Map Scans
- and more!



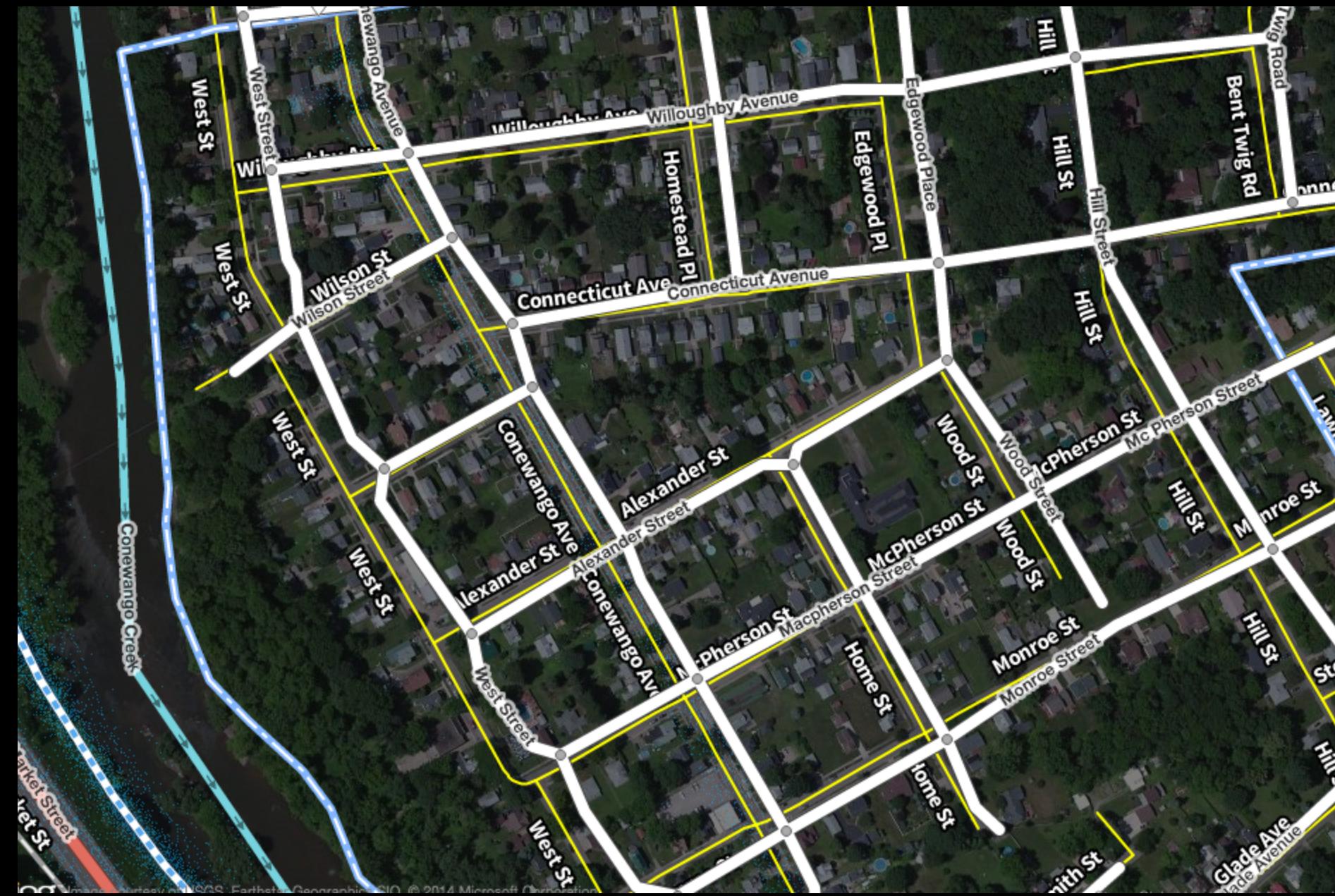






# What's next

- Input more information from the dataset
- Better smoothing
- More complex geometry



# Thank you

- Code: <https://github.com/paulmach/slide>
- Strava
  - <http://labs.strava.com/heatmap>
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