

Next Stop...



Tyler Green
@greent_tyler

Transportation Camp CO 2016

Transitland = Database + Aggregator

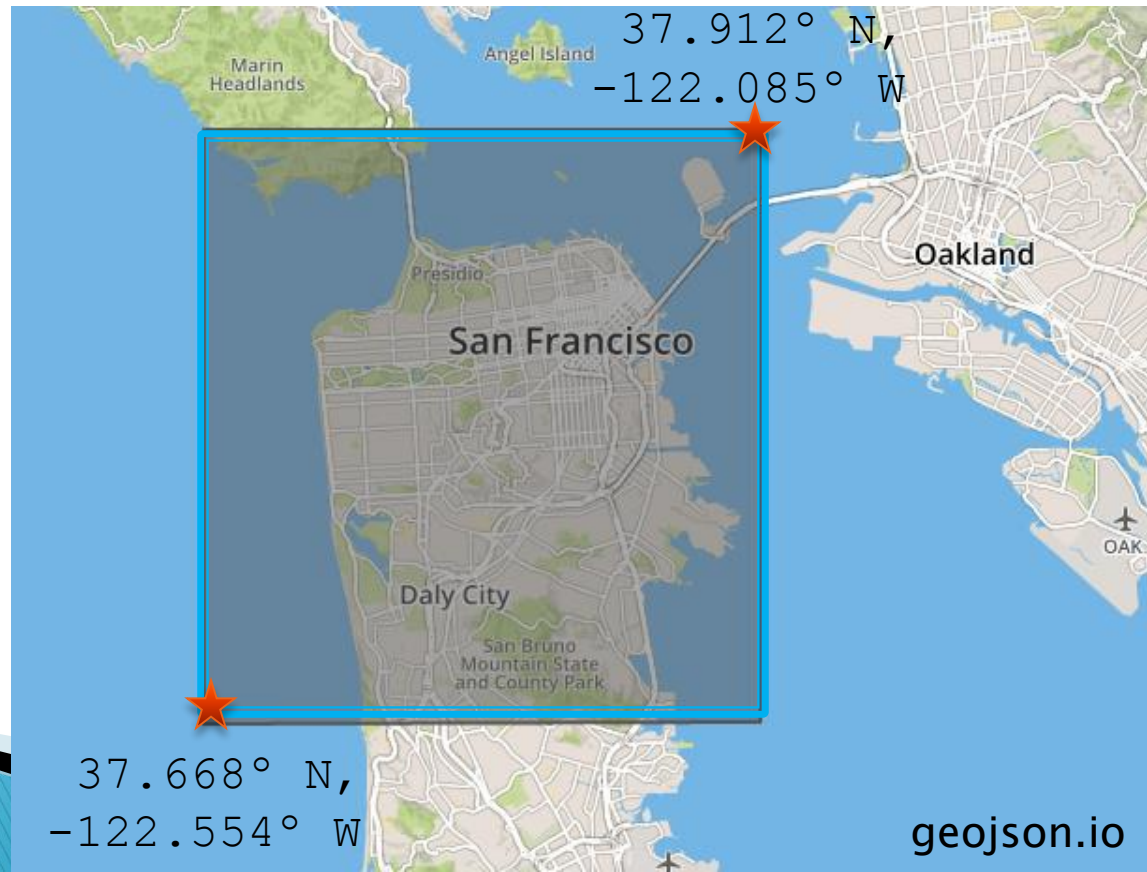
- ▶ **Operators**
- ▶ Routes
- ▶ Stops
- ▶ Feeds
- ▶ Schedule Stop Pairs



Operators in San Francisco

- ▶ Let's say you want to want to know all the public transit operators in San Francisco...

`https://transit.land/api/v1/operators?bbox=-122.554,37.668,-122.085,37.912`



{}operators":{"identifiers":{"usntd://9134","gtfs://f-9q9-caltrain/o/CT"},"imported_from_feed_onestop_ids":["f-9q9-caltrain"],"imported_from_feed_version_sha1s":["22d46513a229c9a10c4d04c8d34bb89d5e422147","36ba71b654ba6ed1e4866822832c11942c4761e5"],"created_or_updated_in_changeset_id":909,"name":"Caltrain","short_name":null,"onestop_id":"o-9q9-caltrain","geometry":{"type":"Polygon","coordinates":[[[-121.56707599999999,37.005449999999996],[-122.231594,37.485891999999996],[-122.386097,37.599229999999995],[-122.411291,37.629831],[-122.395406,37.776540999999995],[-121.652744,37.131693],[-121.609916,37.085107],[-121.567075999999999,37.005449999999996]]]},"tags":{"website":"http://www.caltrain.com/","country":"United States","state":"California","metro":"San Francisco Bay 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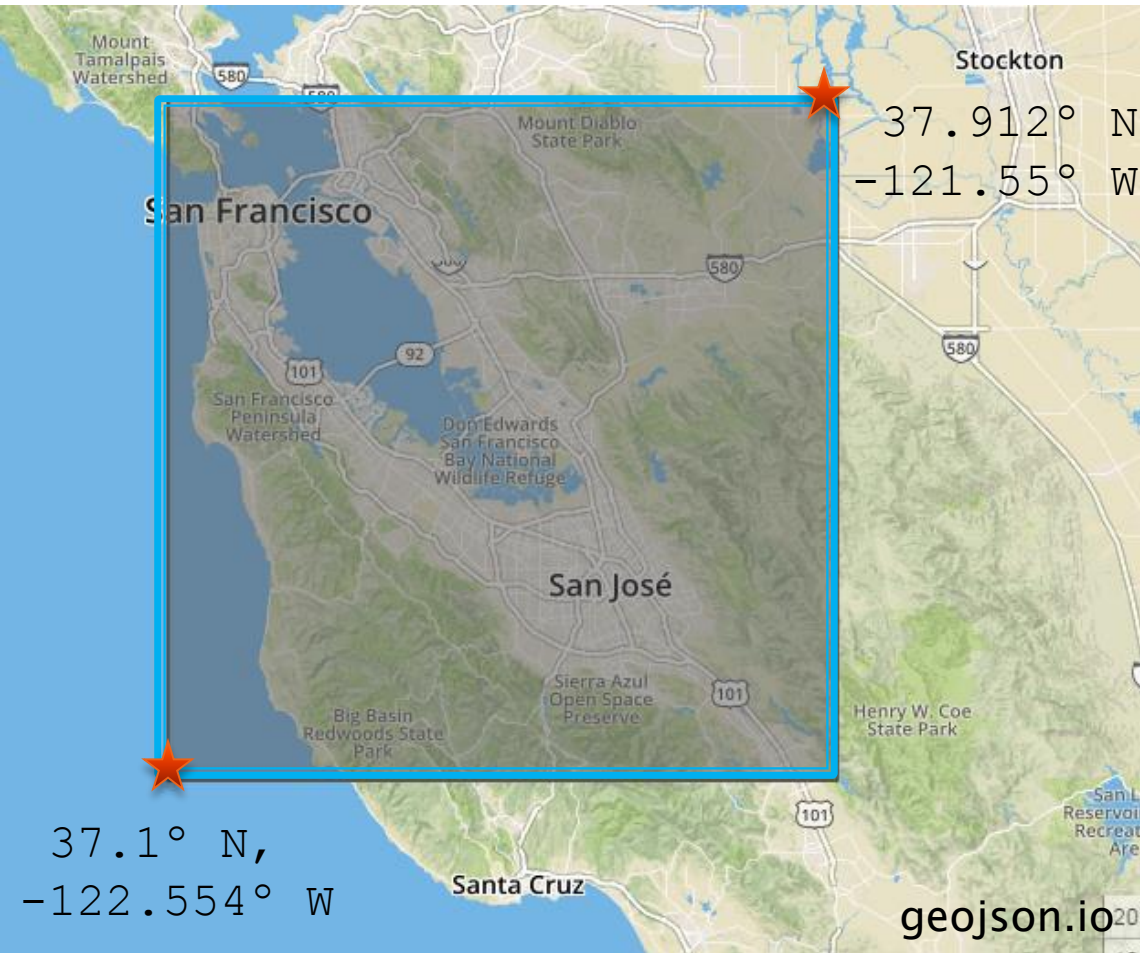
You said simple?

- ▶ The human-readable version of that already human-readable format:
- 1. Caltrain
- 2. Bay Area Rapid Transit
- 3. Alameda-Contra Costa Transit District
- 4. San Mateo County Transit District
- 5. San Francisco Municipal Transportation Agency
- 6. Golden Gate Transit
- 7. WestCat (Western Contra Costa)
- 8. Commute.org Shuttles

Where about the whole Bay Area?

[https://transit.land/api/v1/operators?](https://transit.land/api/v1/operators?bbox=-122.554,37.1,-121.55,37.912)

[bbox=-122.554,37.1,-121.55,37.912](https://transit.land/api/v1/operators?bbox=-122.554,37.1,-121.55,37.912)



1. Caltrain
2. Bay Area Rapid Transit
3. Santa Clara Valley Transportation Authority
4. Alameda-Contra Costa Transit District
5. San Mateo County Transit District
6. San Francisco Municipal Transportation Agency
7. County Connection
8. San Joaquin Regional Transit District
9. Golden Gate Transit
10. Fairfield and Suisun Transit
11. Modesto Area Express
12. SolTrans
13. WestCat (Western Contra Costa)
14. Marin Transit
15. Commute.org Shuttles

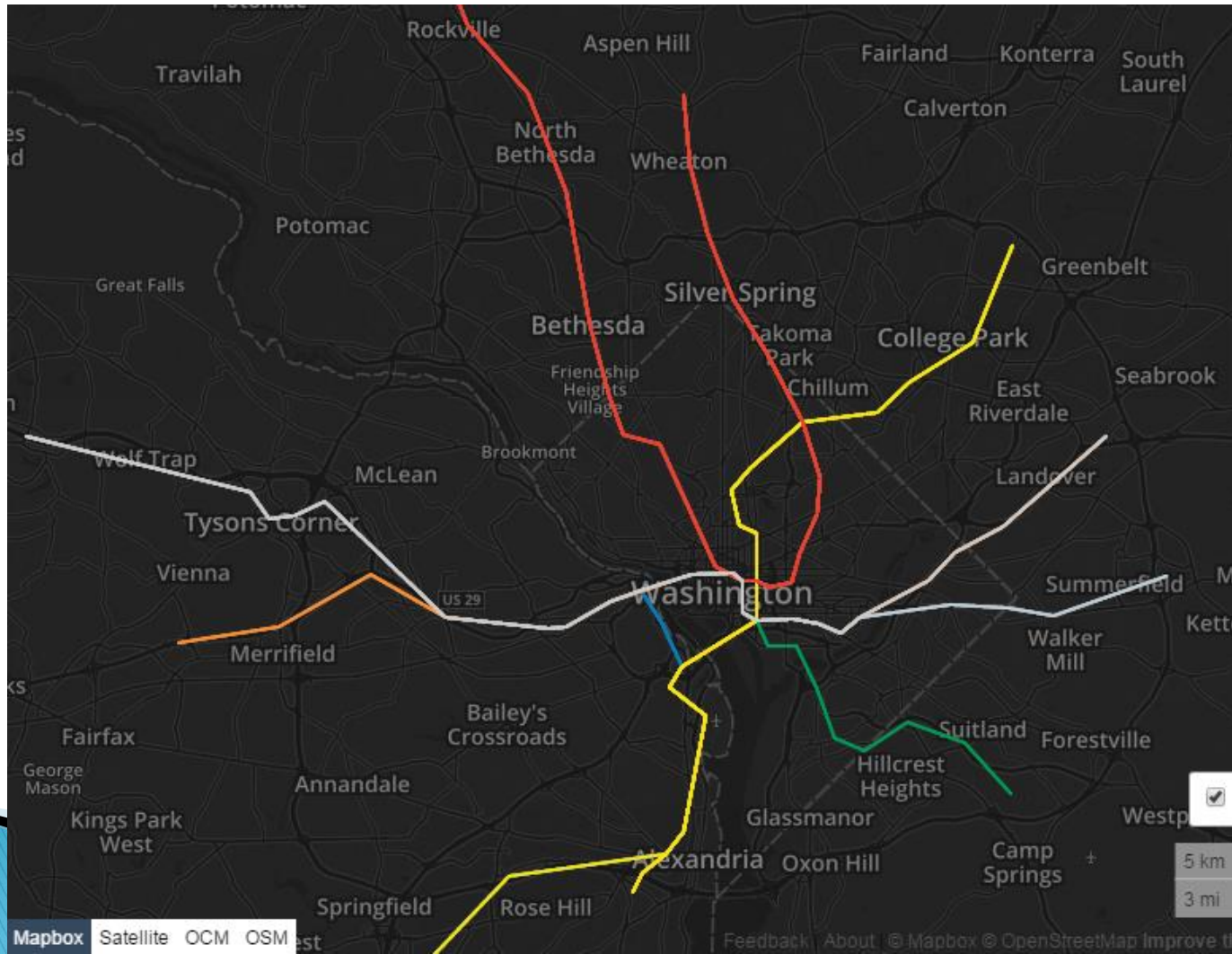
Transitland = Database + Aggregator

- ▶ Operators
- ▶ **Routes**
- ▶ Stops
- ▶ Feeds
- ▶ Schedule Stop Pairs

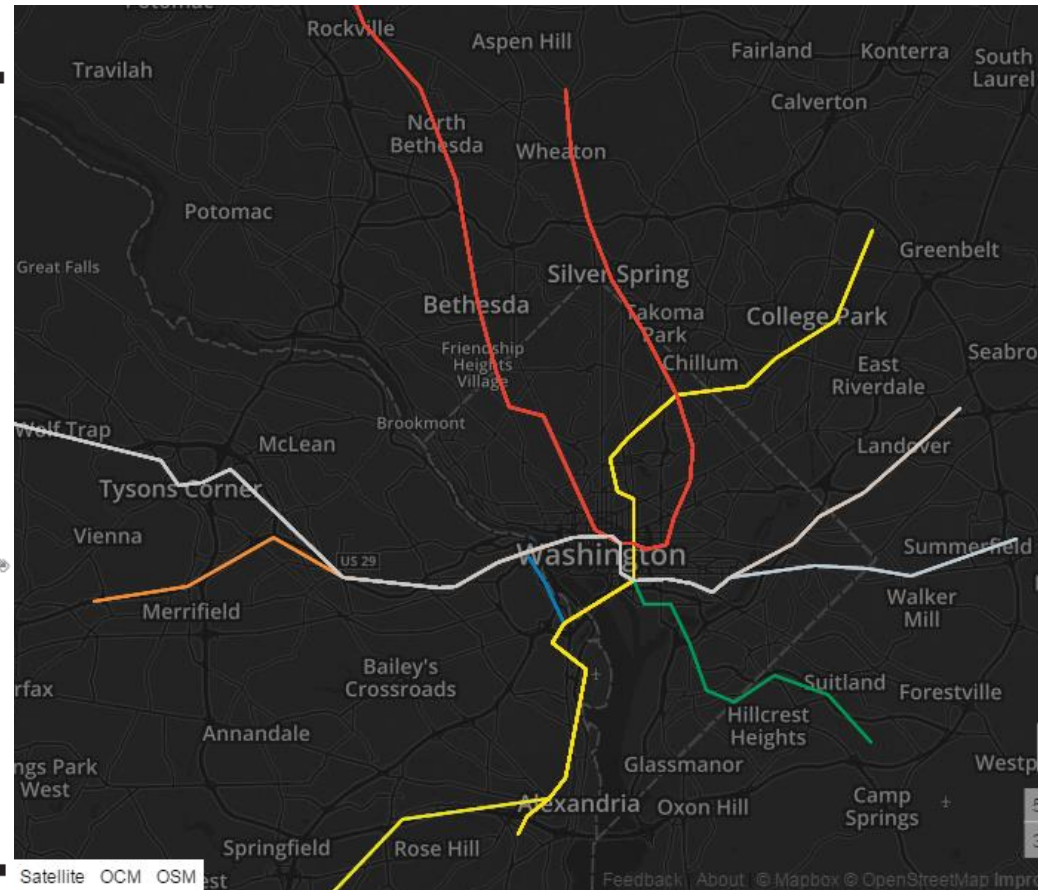


Routes in Washington, D.C.

[https://transit.land/api/v1/routes.geojson?](https://transit.land/api/v1/routes.geojson?vehicle_type=metro&operatedBy=o-dqc-met)
[vehicle_type=metro&operatedBy=o-dqc-met](https://transit.land/api/v1/routes.geojson?vehicle_type=metro&operatedBy=o-dqc-met)



Where does the metro *actually* go?



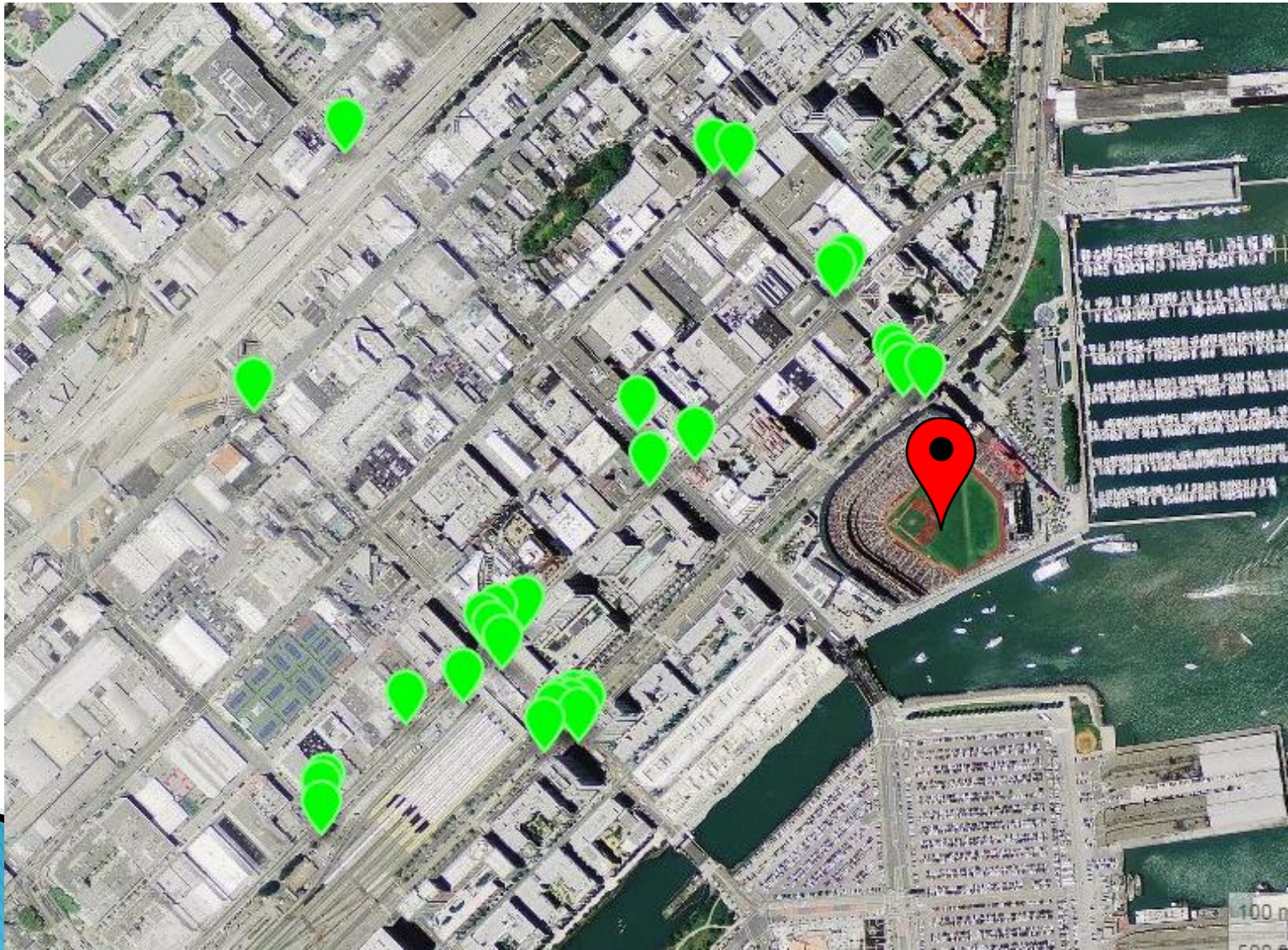
Transitland = Database + Aggregator

- ▶ Operators
- ▶ Routes
- ▶ **Stops**
- ▶ Feeds
- ▶ Schedule Stop Pairs



Stops in San Francisco

[https://transit.land/api/v1/stops.geojson](https://transit.land/api/v1/stops.geojson?lon=-122.389167&lat=37.778611&r=804)
[?lon=-122.389167&lat=37.778611&r=804](https://transit.land/api/v1/stops.geojson?lon=-122.389167&lat=37.778611&r=804)



Transitland = Database + Aggregator

- ▶ Operators
- ▶ Routes
- ▶ Stops
- ▶ Feeds
 - Feed Versions
- ▶ Schedule Stop Pairs



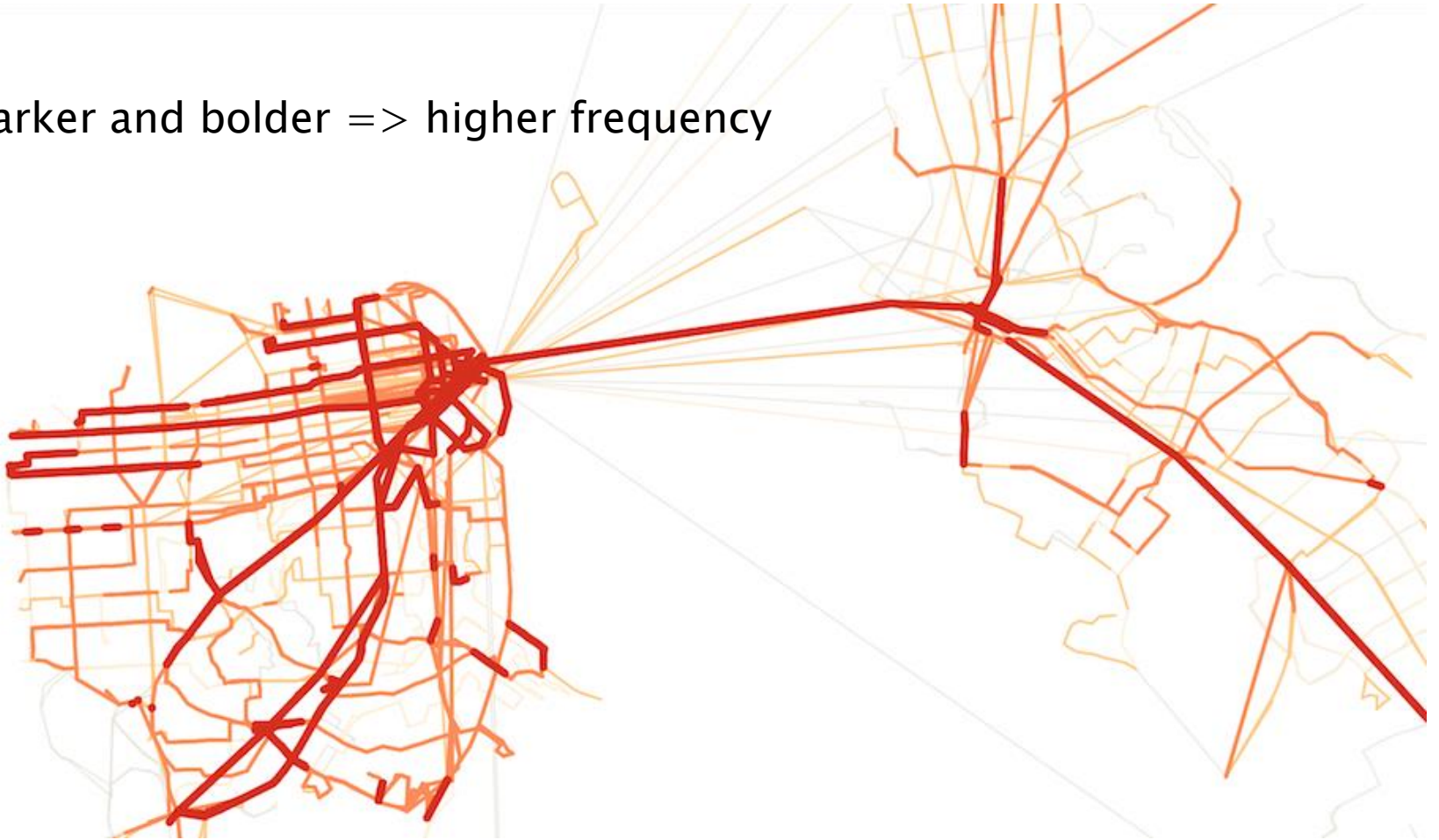
How about a real
project with
Transitland?



How about a real project with Transitland?

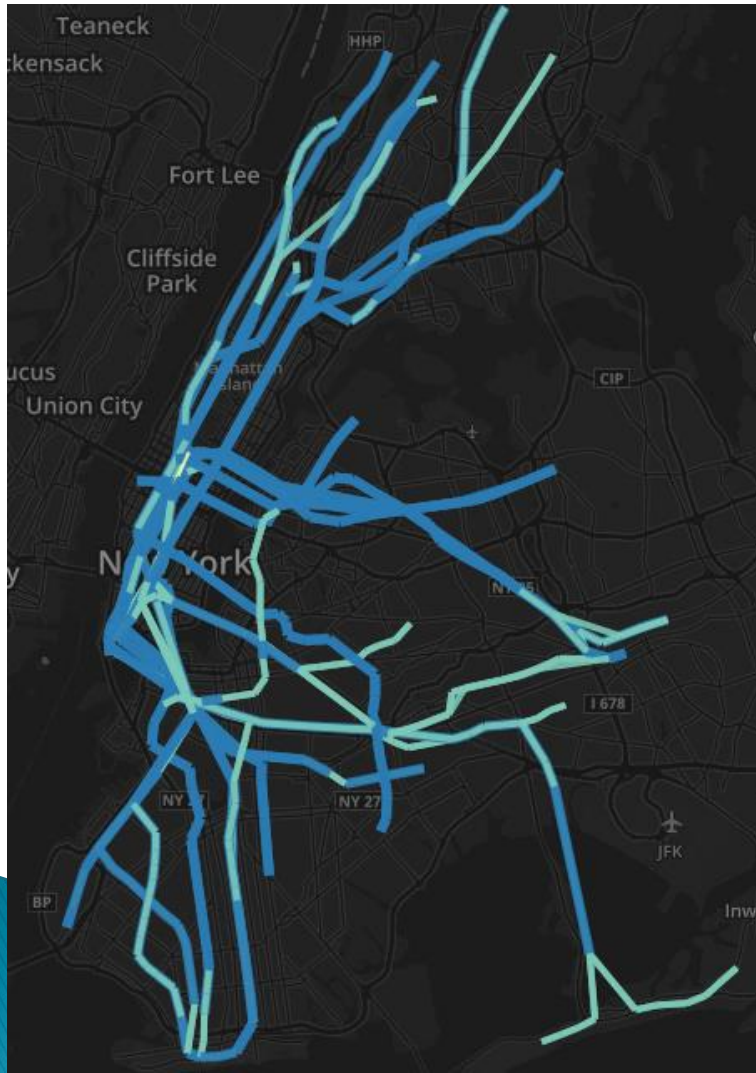
San Francisco Transit Frequency

Darker and bolder => higher frequency

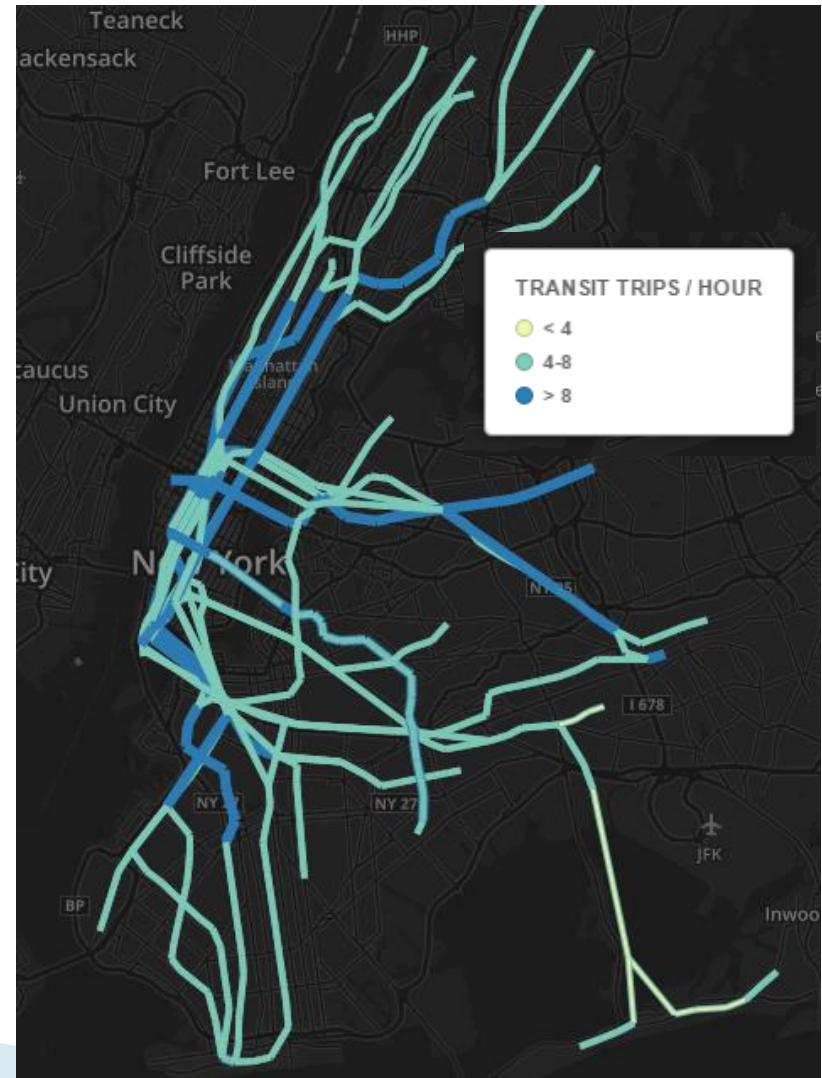


NYC Subway Frequency

Friday Morning Rush Hour



Saturday morning, same time



NYC Bus Frequency

Friday Morning Rush Hour

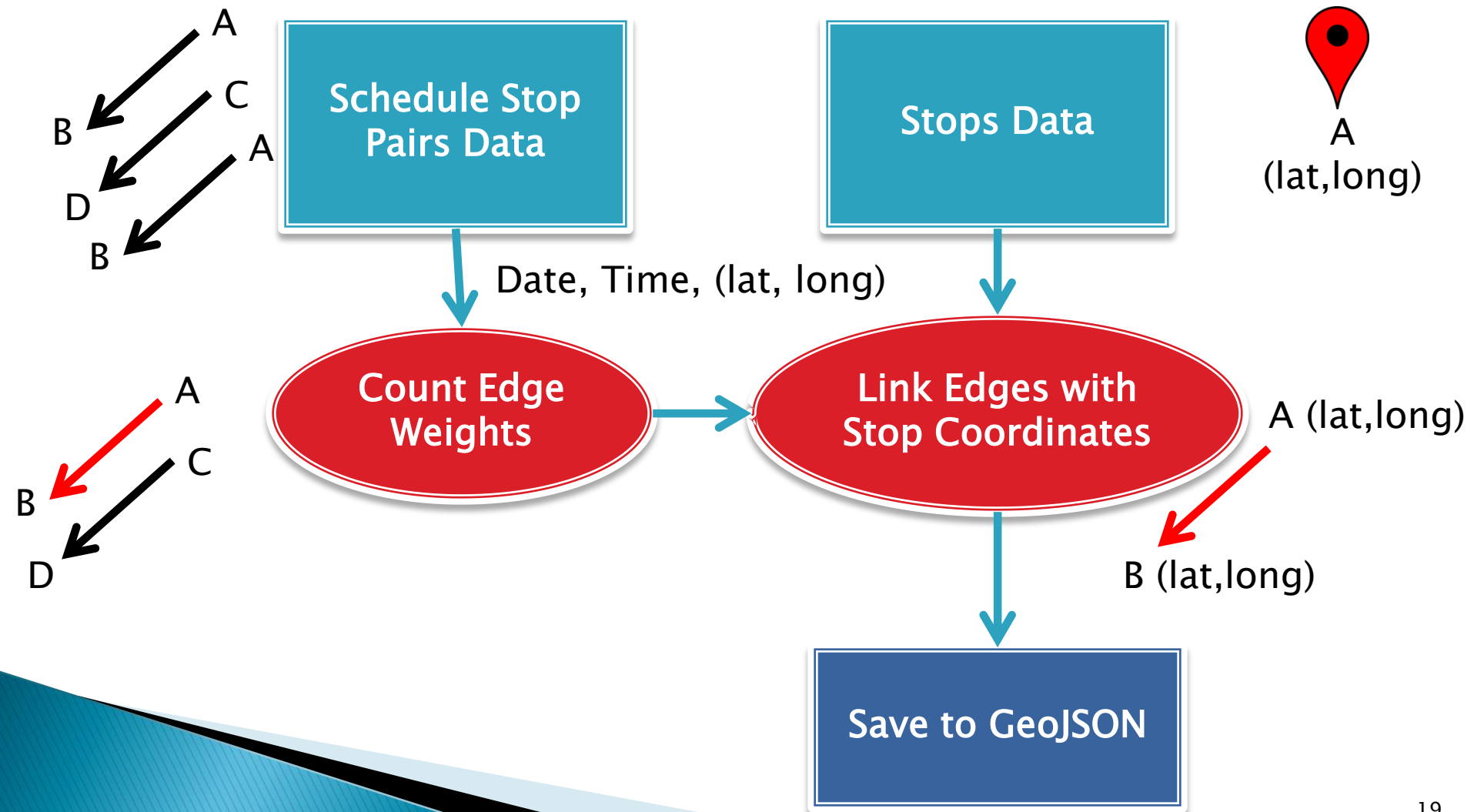


NYC Bus Frequency

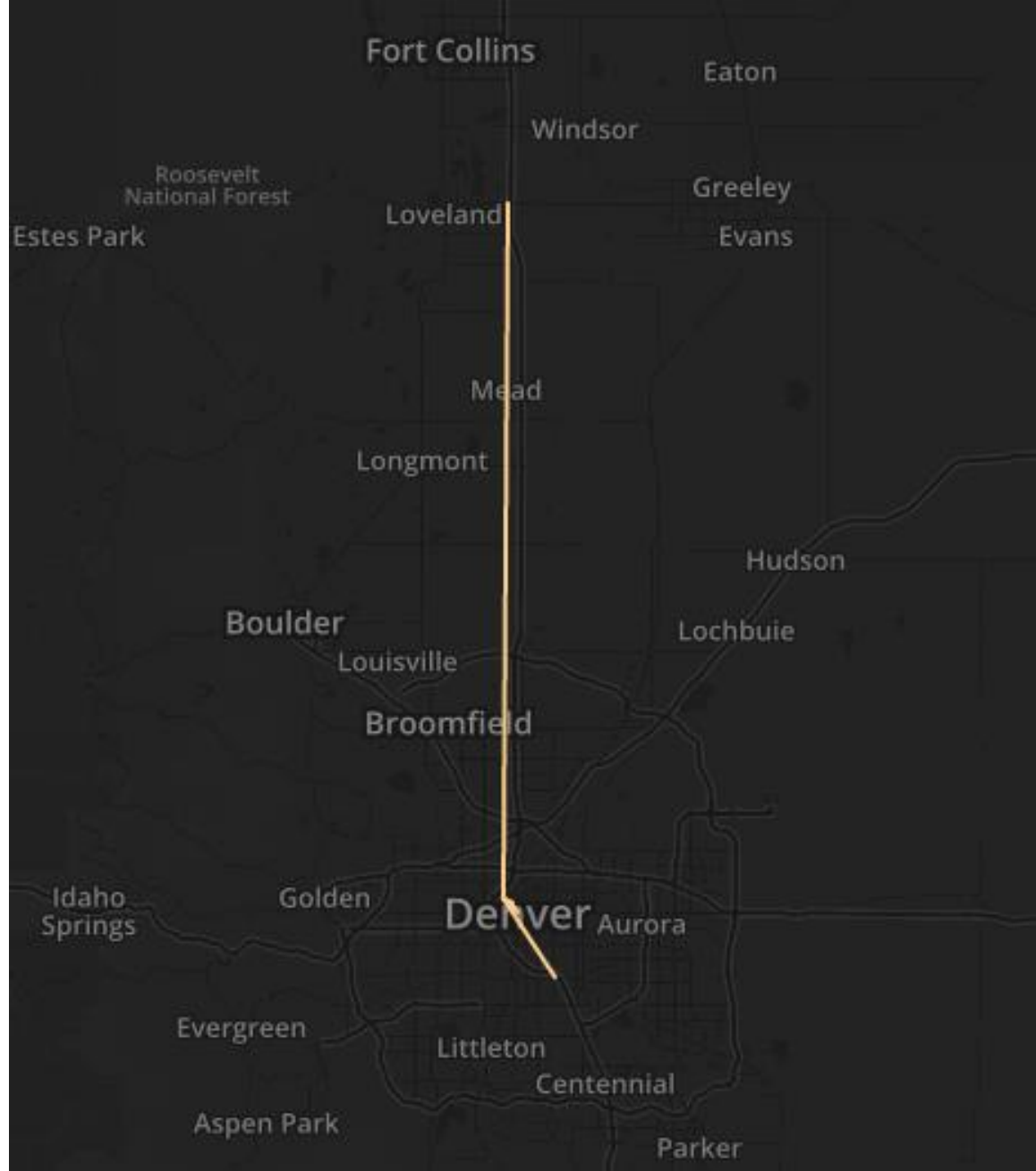
Saturday Morning, same time



Visualization Methodology



Colorado Transit Frequency



Colorado Transit Frequency

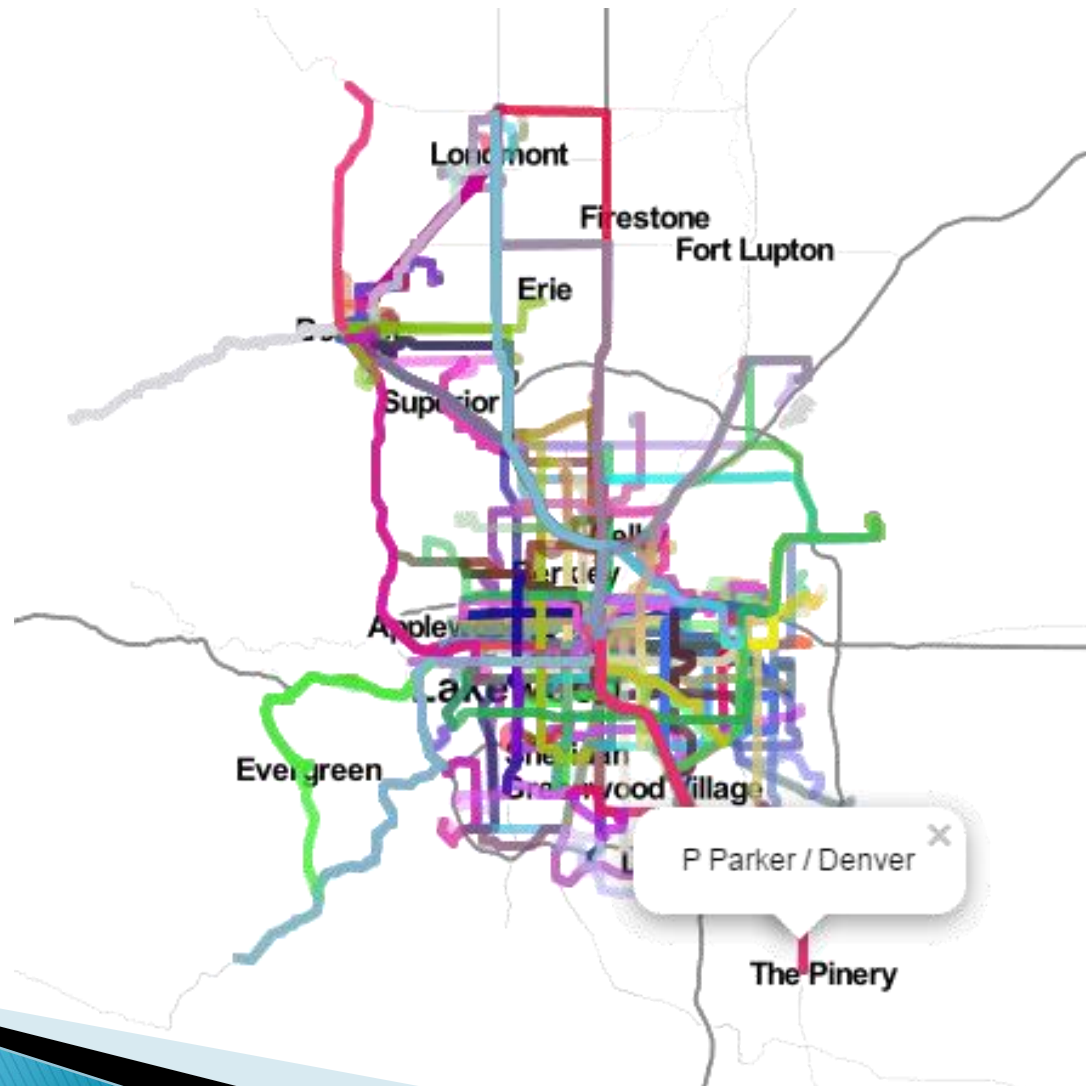


Transitland Playground

SHOW ME BY

IN

RTD Routes through Playground



Let's Contribute!

- ▶ You can submit feeds to transit.land
- ▶ The entire project is open source!

My Contribution

Ruby

```
require 'transitland_client'

bbox = '-122.35,37.668,-122.554,37.84'

ops = TransitlandClient::Operator.find_by(bbox: bbox)

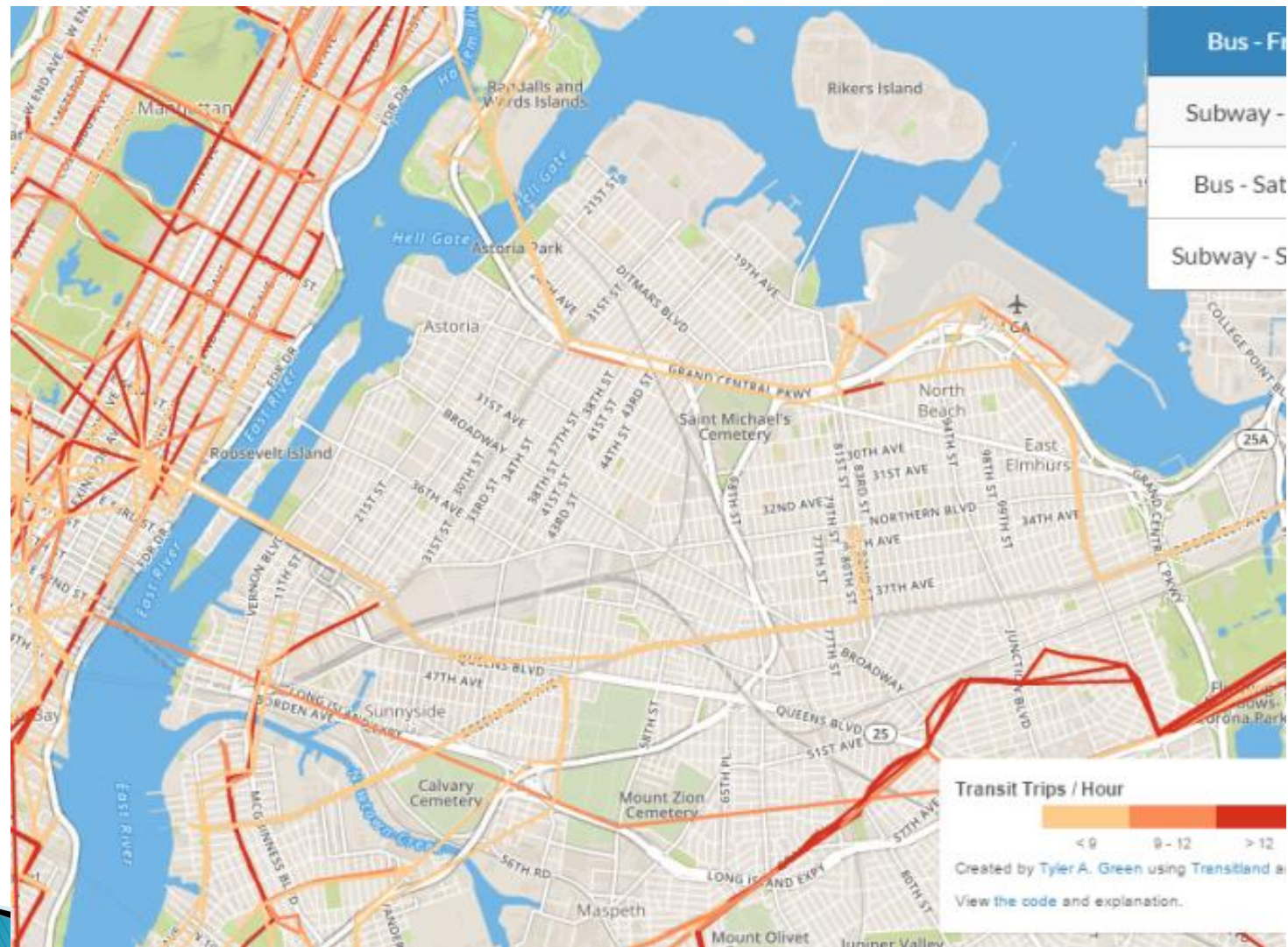
names = ops.map { |op| op.get(:name) }

puts names
```

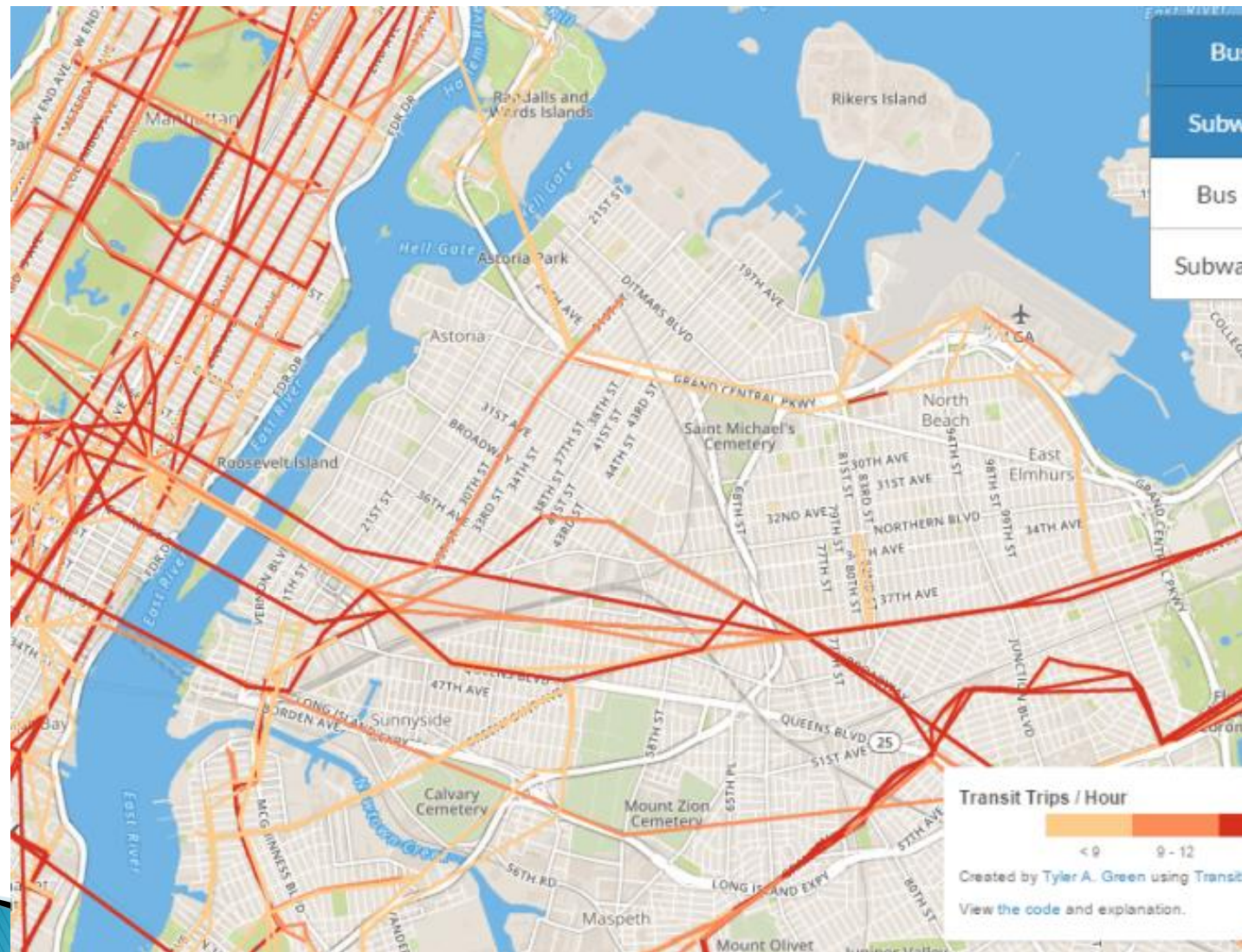


```
["Caltrain", "Bay Area Rapid Transit", "Alameda-Contra Costa  
Transit District", "San Mateo County Transit District", "San  
Francisco Municipal Transportation Agency", "Golden Gate  
Transit", "WestCat (Western Contra Costa)", "Commute.org  
Shuttles"]
```

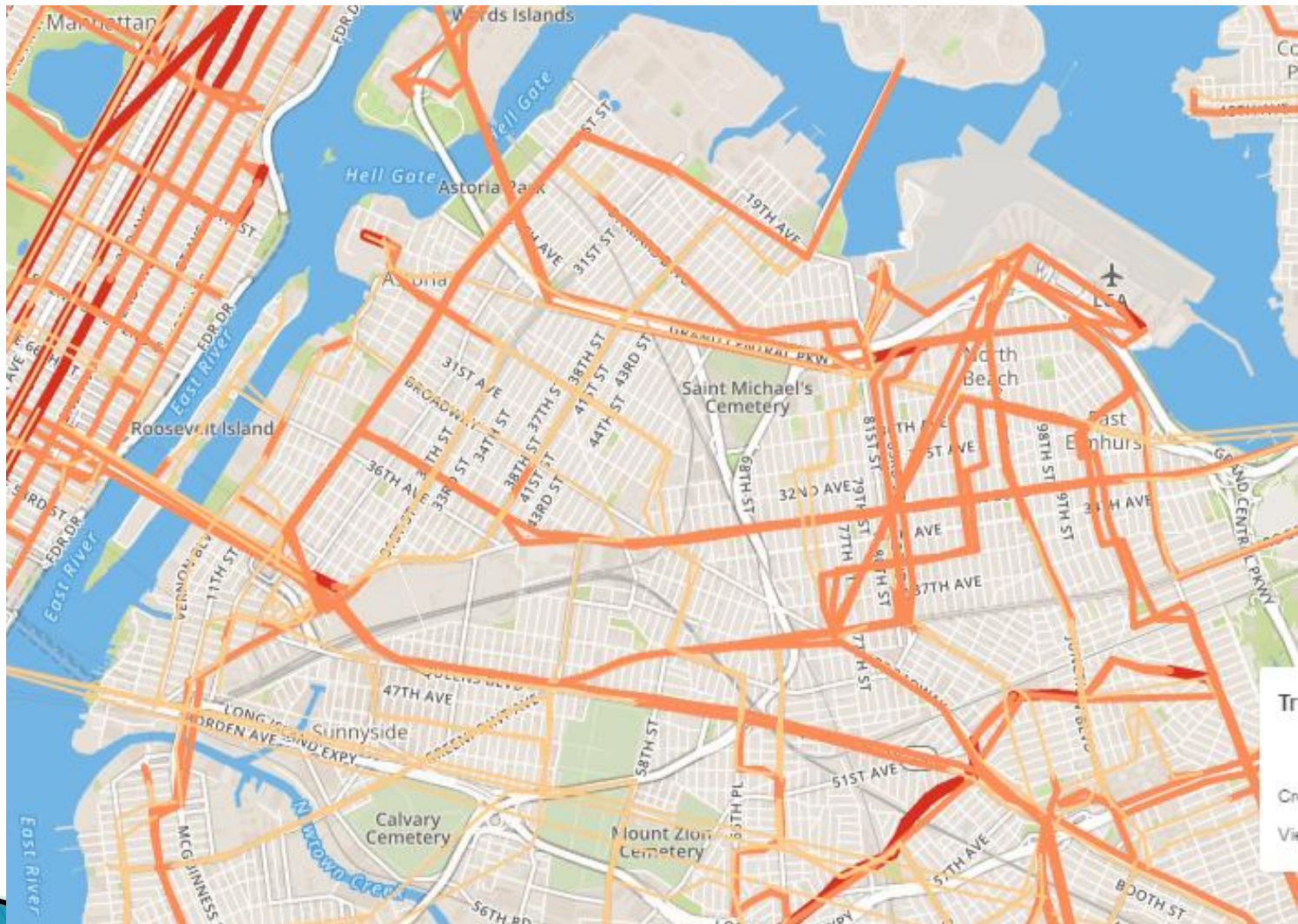
Collaboration at Work



Collaboration at Work



Collaboration at Work



It's up to us!

- ▶ It's a platform, it's up to us to employ it
- ▶ Let's brainstorm! How can we cross...
 - Operators
 - Routes
 - Stops
 - Feeds
 - Schedule Stop Pairs

Backup Slides

Onestop ID

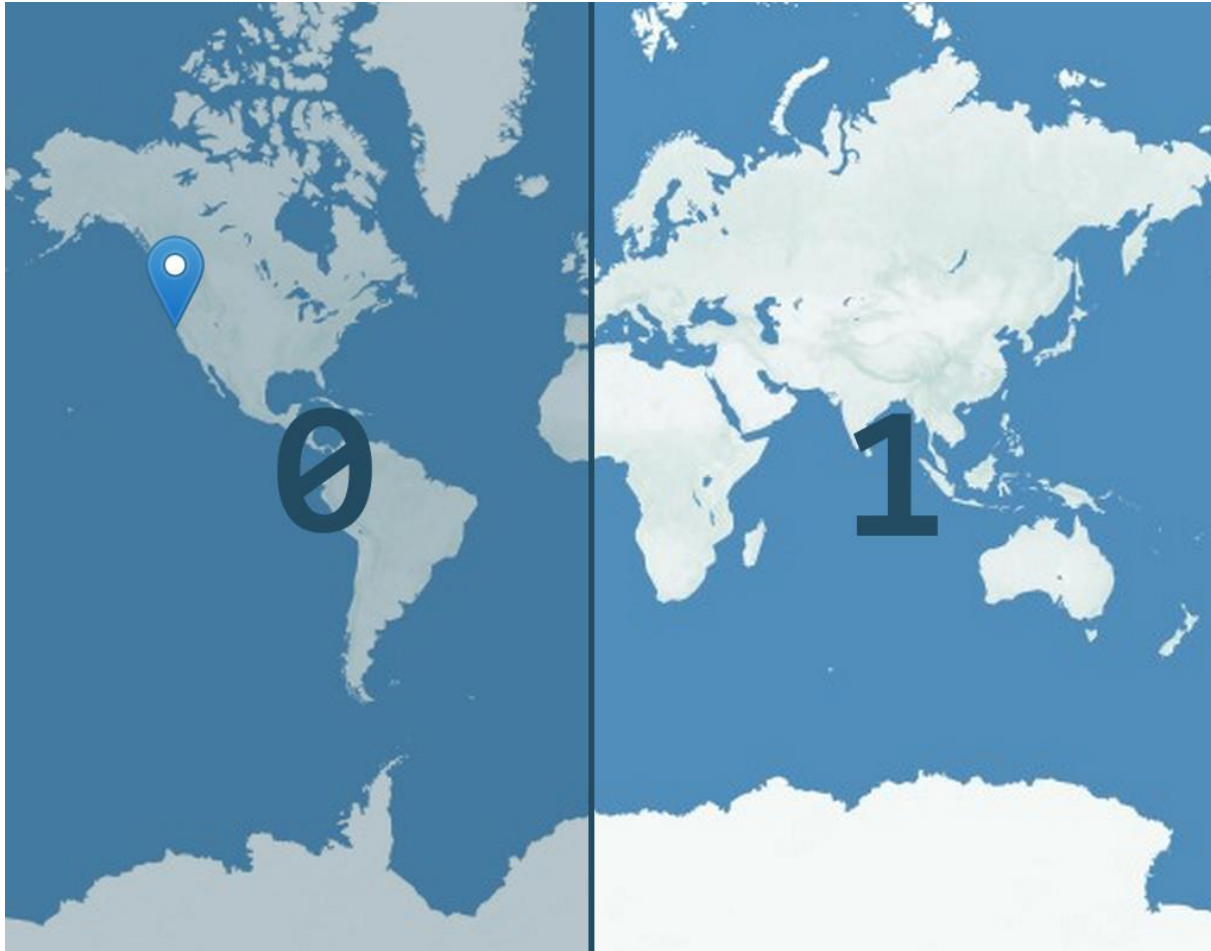
- ▶ Unique identifier for feeds, operators, stops, and routes

entity geohash name

o-9q9-BART

The diagram illustrates the structure of an Onestop ID. It shows the ID 'o-9q9-BART' with three green curly braces above it. The first brace is under the 'o' and is labeled 'entity'. The second brace is under '9q9' and is labeled 'geohash'. The third brace is under 'BART' and is labeled 'name'.

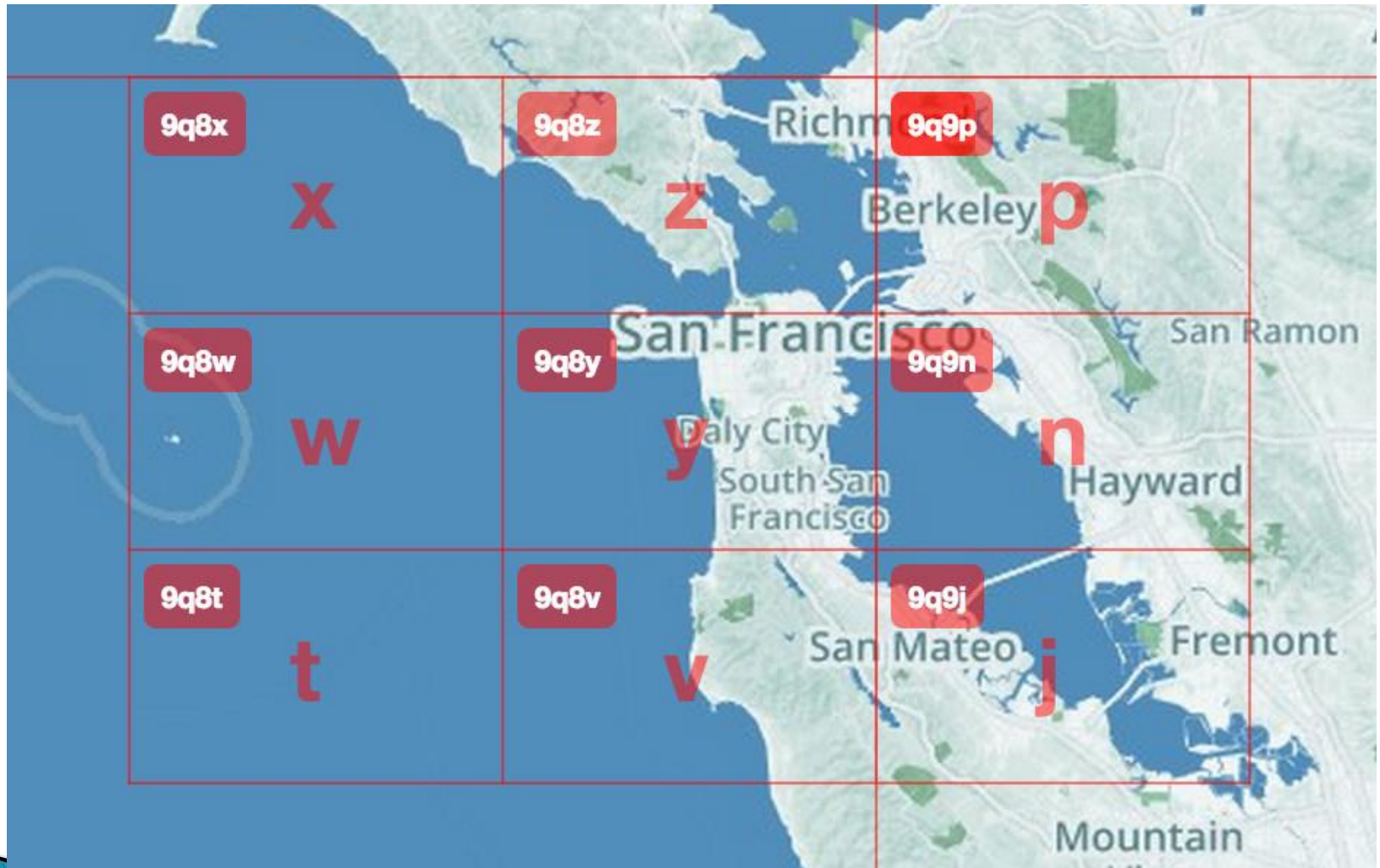
Geohashes Explained



Geohashes Explained



Geohashes Explained

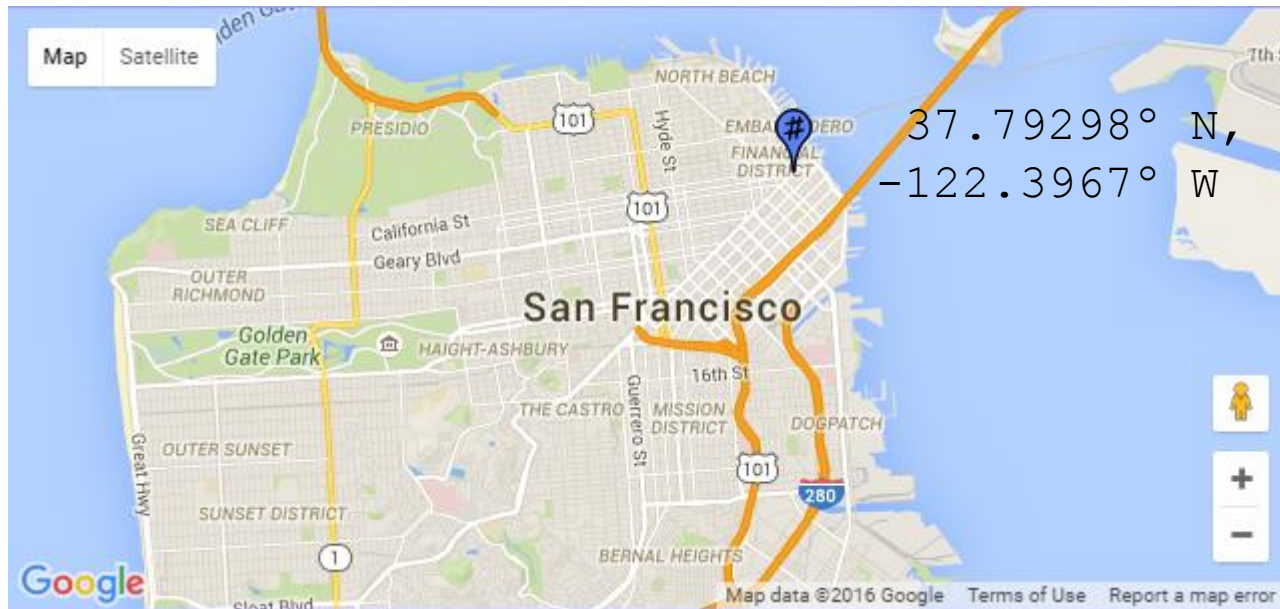


Geohashes Explained



Geohash for a Stop

- ▶ `https://transit.land/api/v1/stops/s-9q8znb12j1-embarcadero`



```
... "onestop_id": "s-9q8znb12j1-embarcadero", "geometry": { "type": "Point", "coordinates":  
  [-122.396742, 37.792976] }, "name": "Embarcadero" ...
```