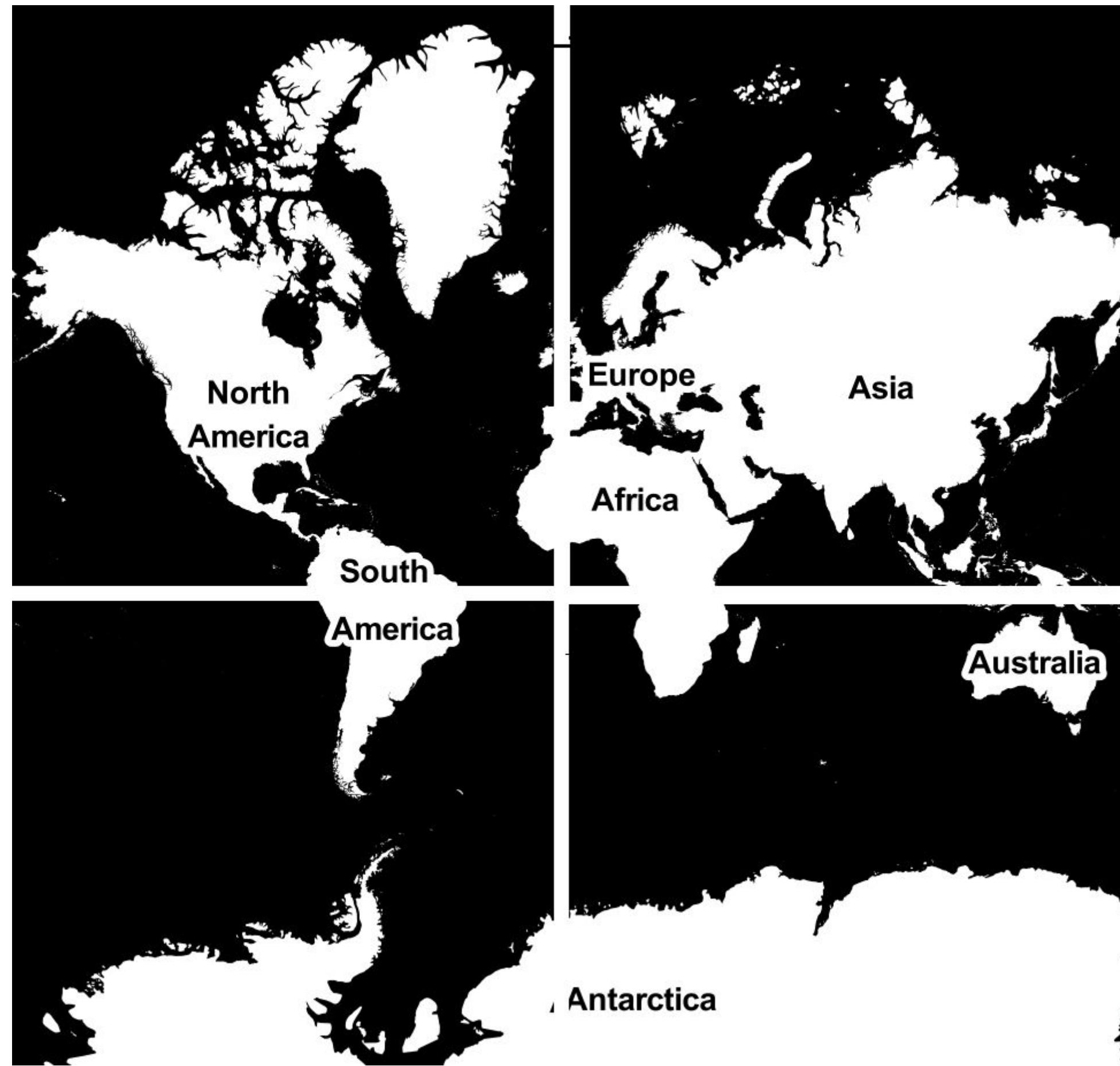


Breaking up with Raster and Going Steady with Vector Tiles

Katie Kowalsky // @KatieKowalsky
Mapzen // NACIS 2016

breaking up with raster

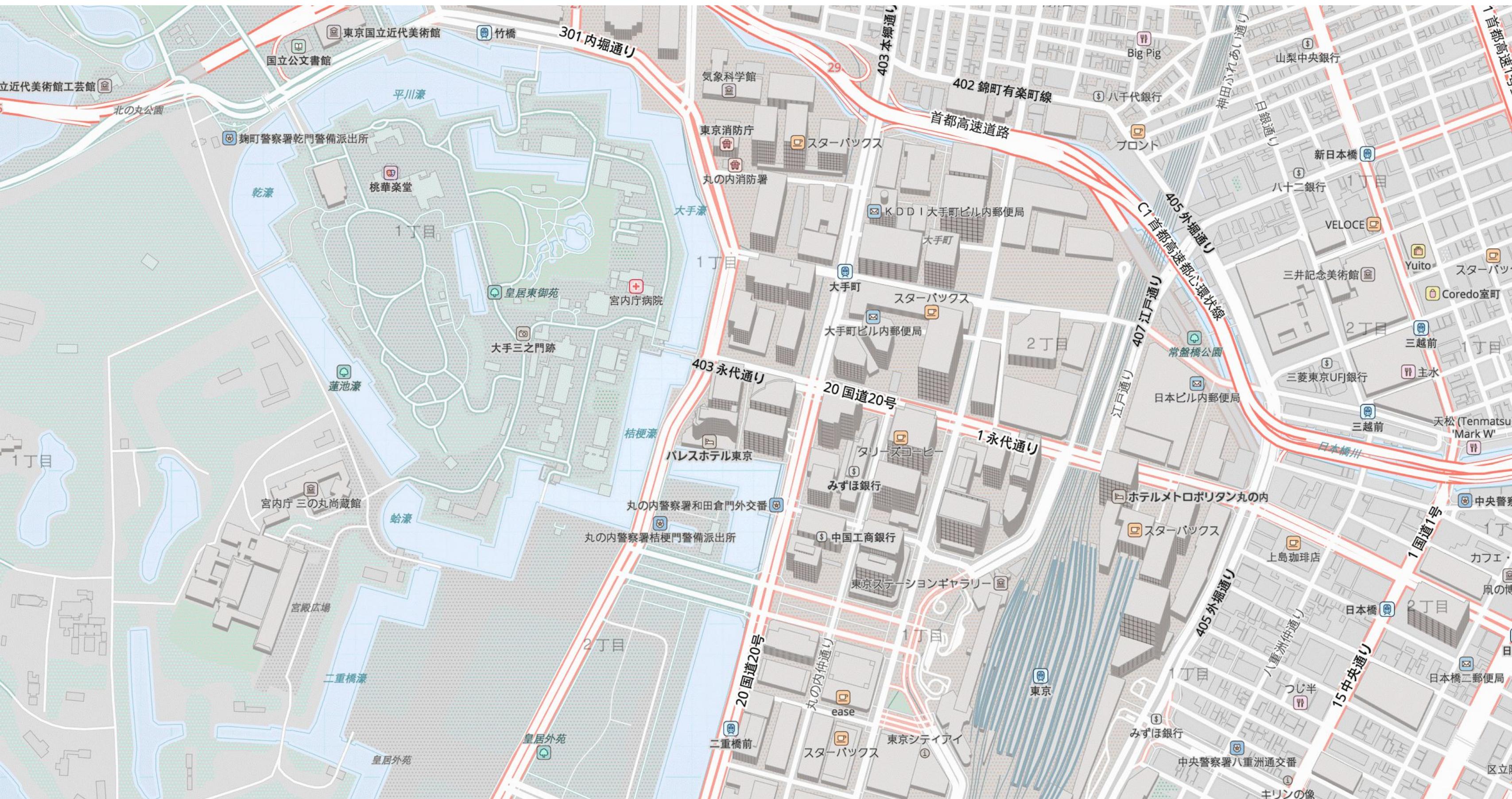




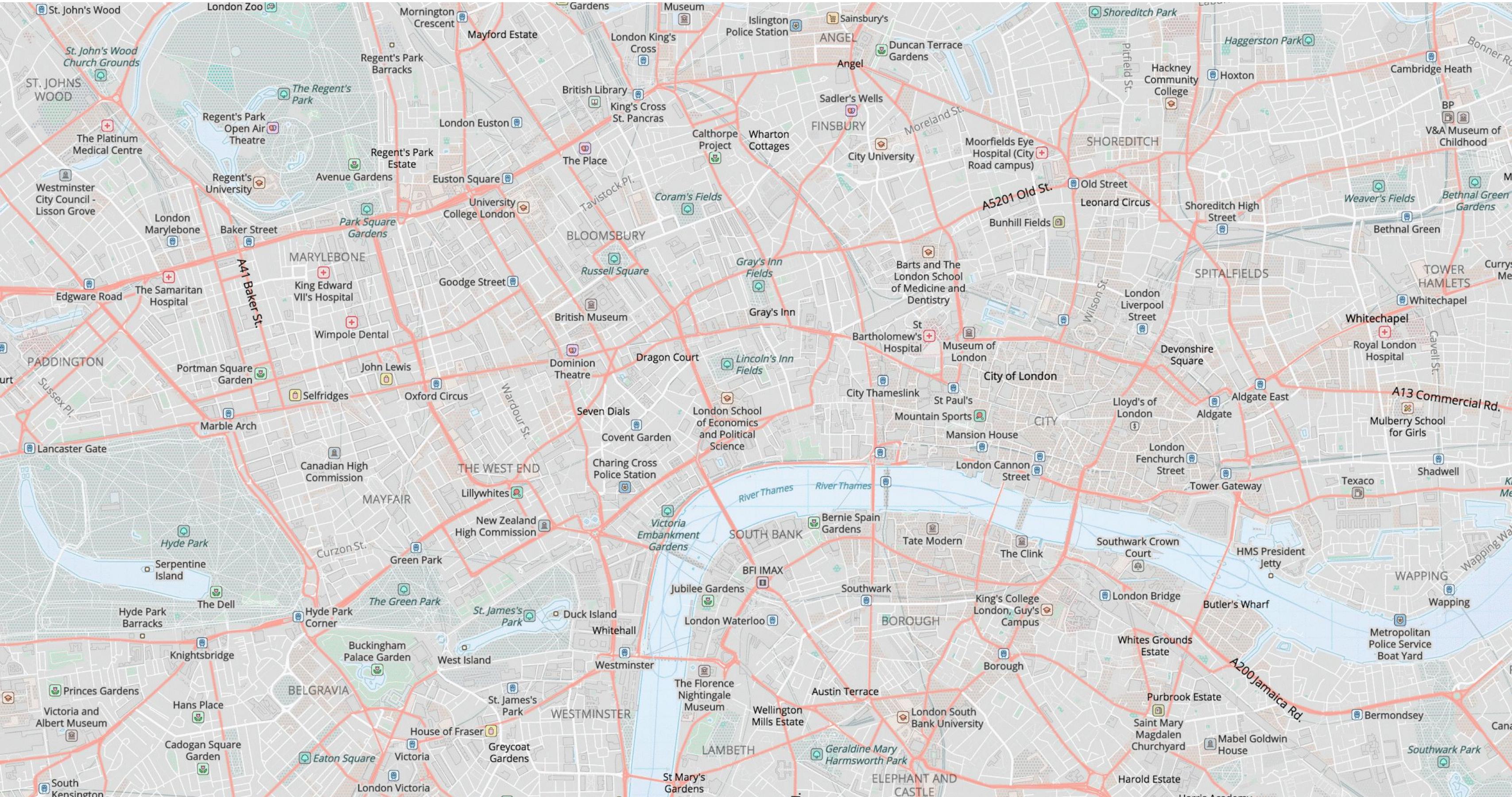
vector
tiles are
super
smart.

vector tiles are *fast* &
lightweight which
changes things.

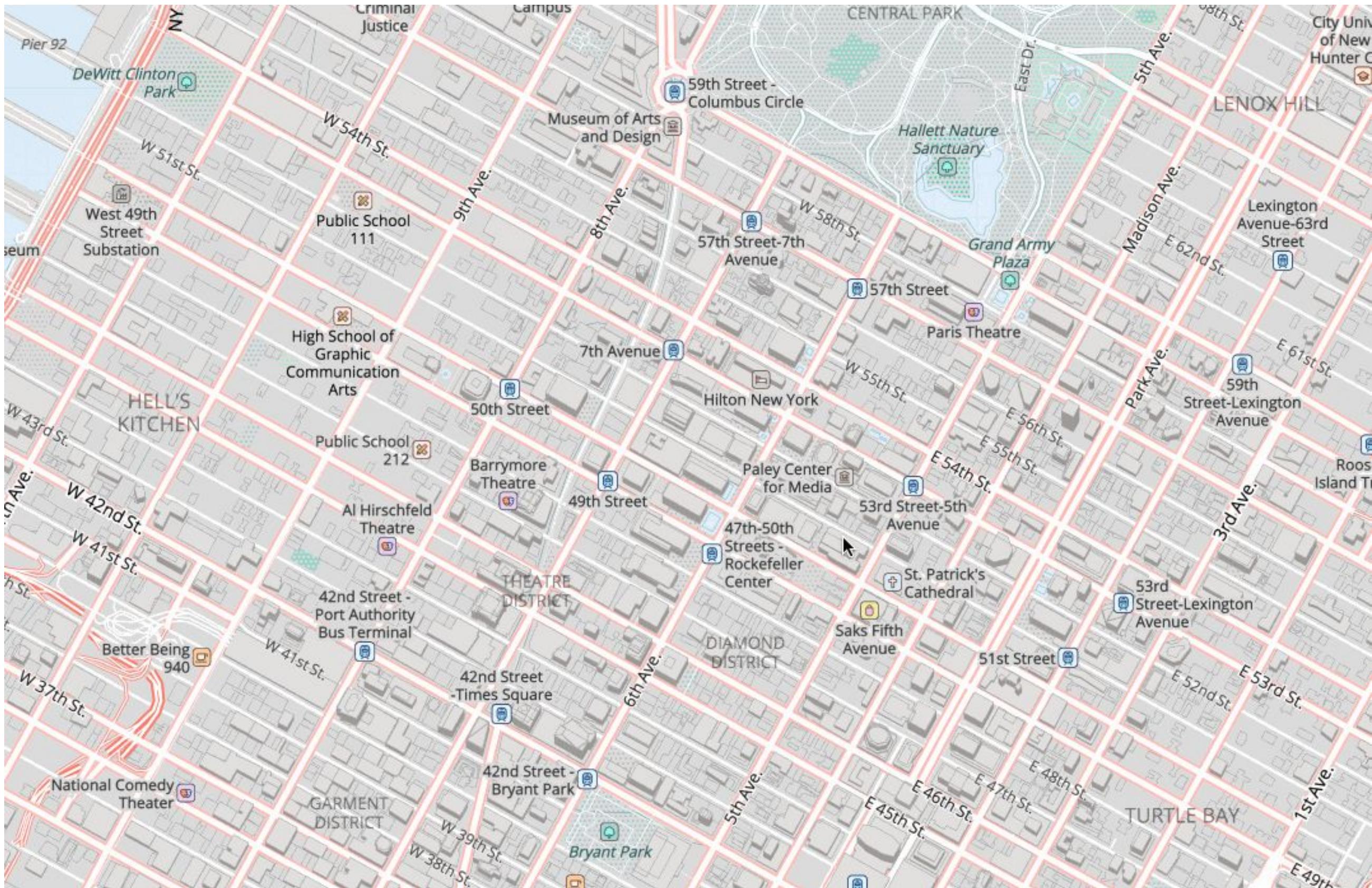
flexible features



flexible features



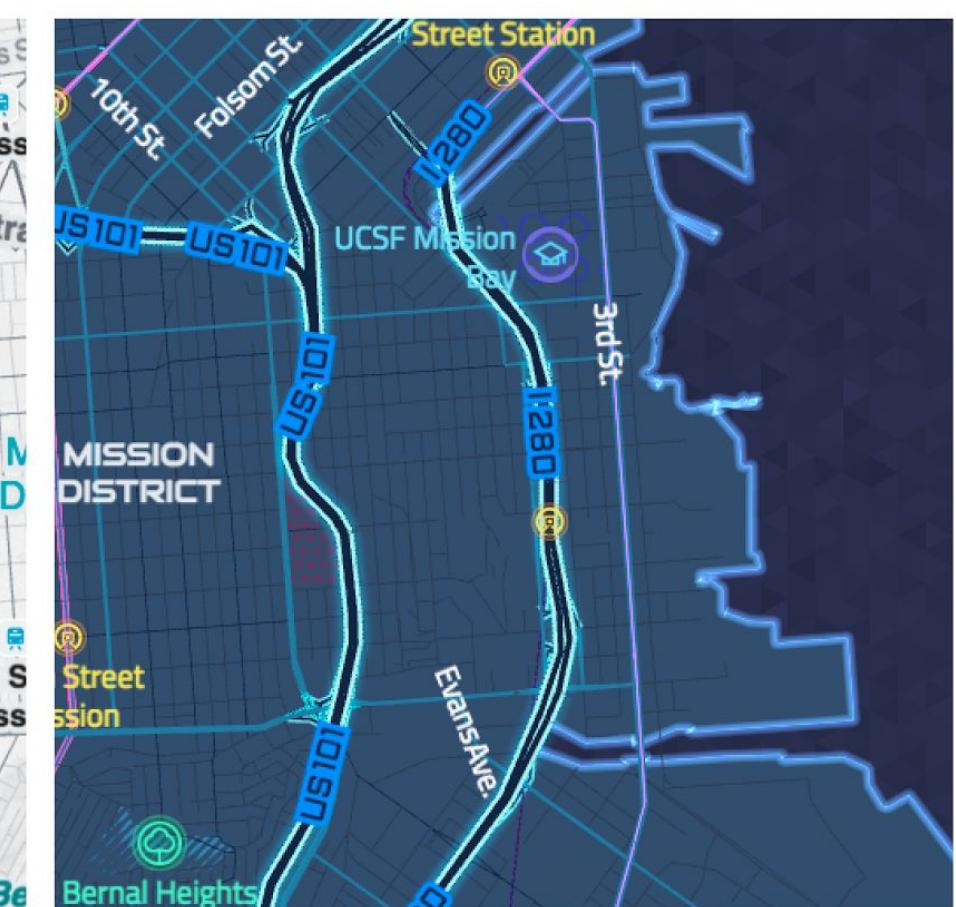
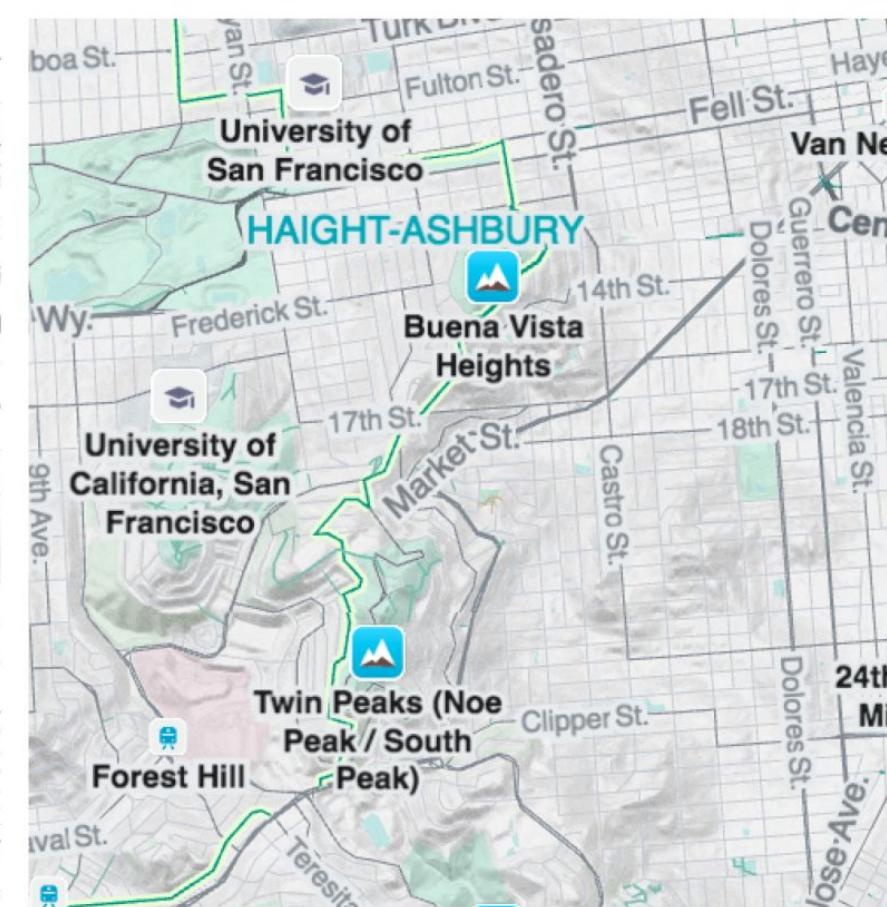
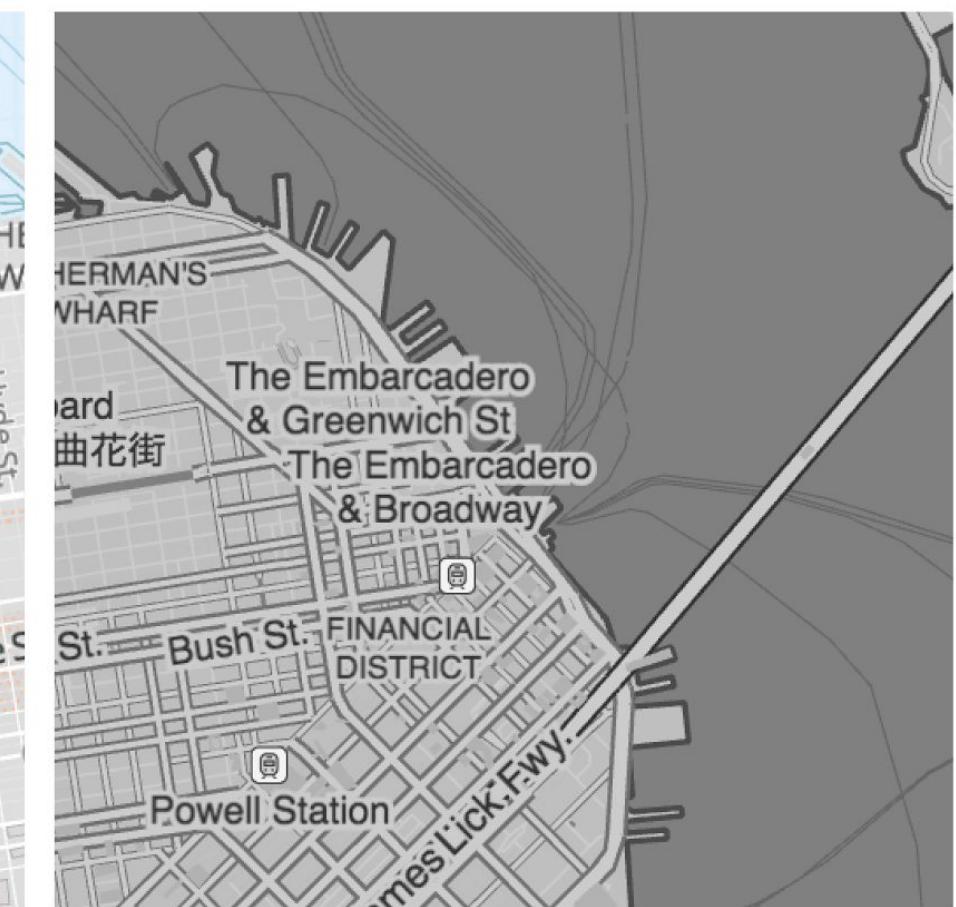
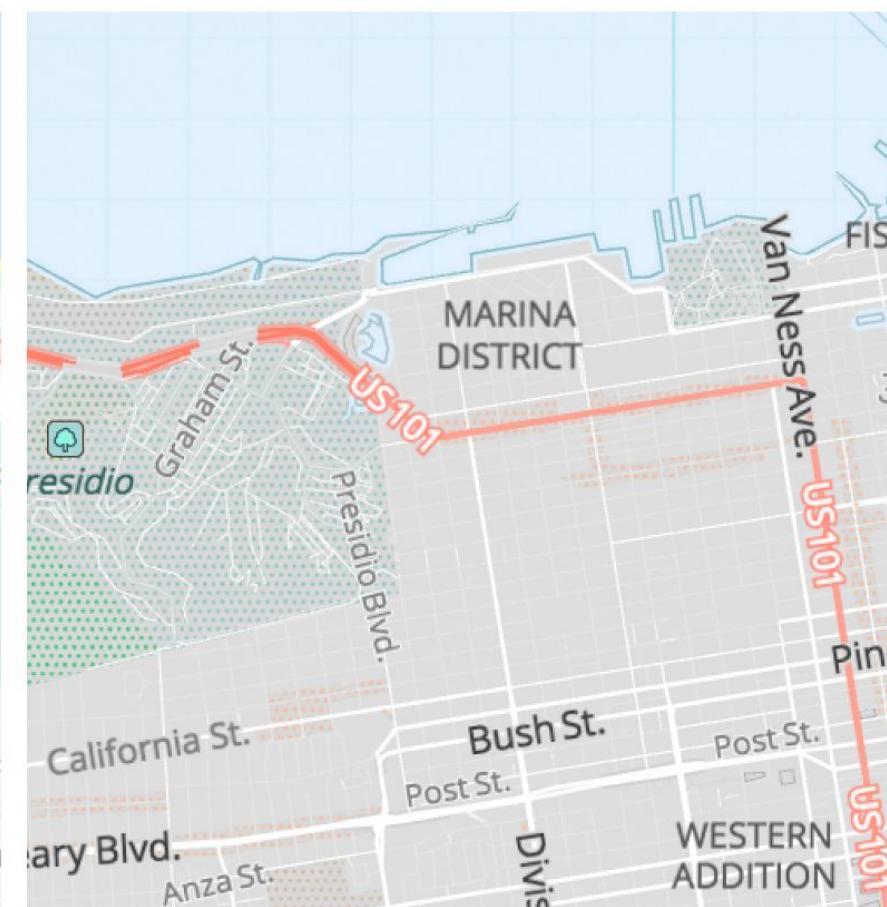
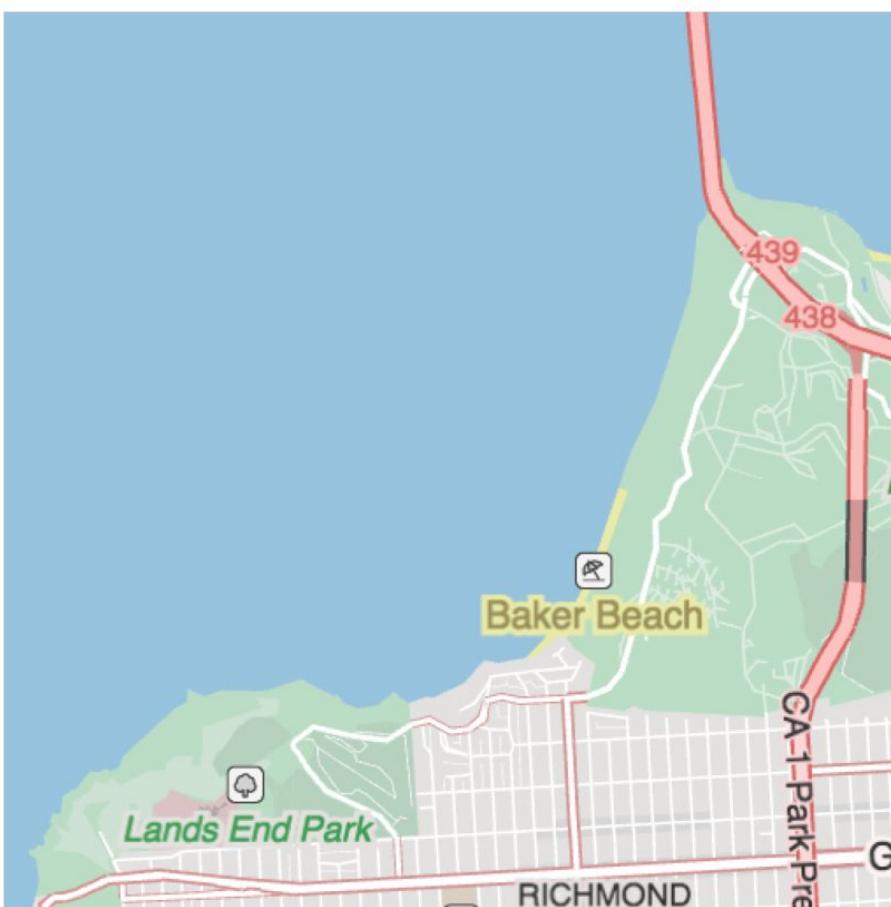
flexible features



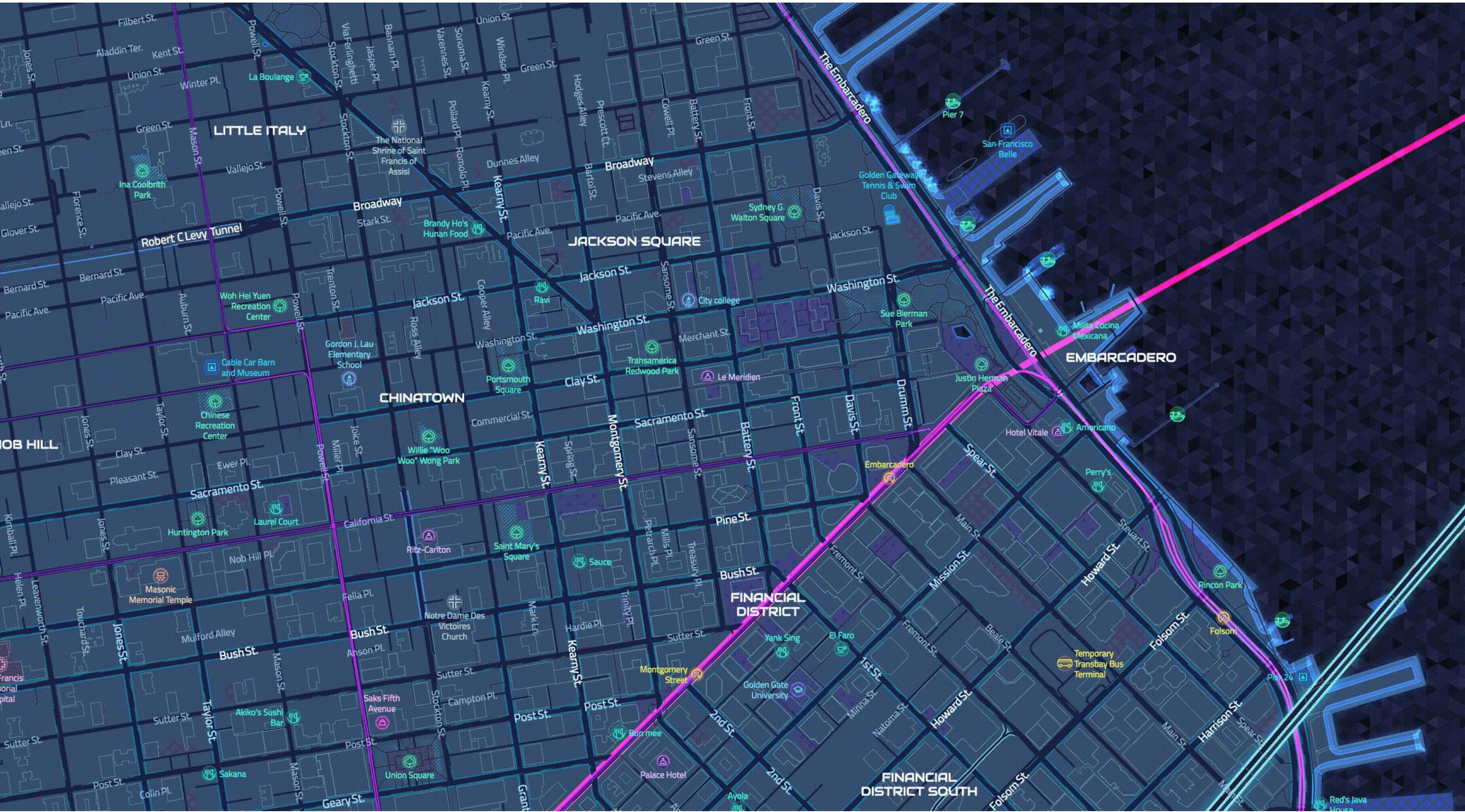
start where you are.



MAPZEN



mapzen.com/maps



Tangram Play New Open Save Camera Inspect Fullscreen Help kkowalsky

BETA

z12.4 + - Q Old Colorado City, Colorado Springs, CO, USA 38.8372,-104.8541 star book undo redo

Park

DATA SOURCE
NAME mapzen
LAYER landuse

PROPERTIES
area 5995140
kind park
min_zoom 10
sort_rank 24

LAYERS
landuse:tier1
landuse:tier2:parks-and-national-forests-not-natio...
landuse:tier3
landuse:tier4
landuse:tier5
Eagle Mountain
landuse:tier6

Garden of the Gods Park
Red Rock Canyon Open Space
Bear Creek Cañon Park
North Cheyenne Cañon Park
Stove Mountain

UCCS-University of Colorado Colorado Springs
Colorado College
Fountain Creek
Pikes Peak Community College - Centennial College

walkabout-style.yaml

```

filter:
  all:
    - kind: forest
  any:
    - protect_class: ['6']
    - operator: ['United States Forest Service']
  draw:
    terrain:
      color: [0.945,0.995,0.945] #*green7
      visible: true ✓

parks-and-national-forests-not-national-park:
  filter:
    all:
      - $zoom: { min: 4 }
      - kind: [park, national_park]
    any:
      - not: { operator: [ "United States National Park Service", "United States Forest Service" ] }
      - not: { protect_class: ['2','3','5','6'] }
    # default for national forests and more?
  draw:
    terrain:
      color: [0.706, 0.859, 0.737, 1.00]
      visible: true ✓

national_park:
  filter:
    function() { return true; } // feature.name.indexOf('National') >= 0
    all:
      - kind: national_park
      - not: [ protect_class: 6 ]
        operator: [ "United States Forest Service" ]
  draw:
    terrain:
      color: [0.890,1.00,1.00]
      visible: true ✓

# gotta be a protected area to draw green, not just a landcover type
farm:
  filter:
    kind: [farm, farmland]

```

B4DBBC 180 219 188 1.00
HEX R G B A

mapzen.com/tangram/play



```
1 <!DOCTYPE html>
2 <meta charset="utf-8">
3 <meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.0">
4 <link rel="stylesheet" href="styles.css" />
5 <body>
6 <script src="d3.v3.min.js"></script>
7 <script src="d3.geo.tile.v0.min.js"></script>
8 <script src="https://cdn.rawgit.com/mbostock/topojson/3ed6ee9e04d4/topojson.js"></script>
9 <script src='//s3.amazonaws.com/assets-staging.mapzen.com/ui/components/bug/bug.min.js'></script>
10 <script type='text/javascript'>
11   window.bugTitle = 'Map using d3 and topojson';
12
13   var layers = ['water', 'landuse', 'roads', 'buildings'];
14   window.renderTiles = function(d) {
15     var svg = d3.select(this);
16     var zoom = d[2];
17     this._xhr = d3.json("https://tile.dev.mapzen.com/mapzen/vector/v1/all/" + zoom);
18     var k = Math.pow(2, d[2]) * 256; // size of the world in pixels
19
20     tilePath.projection()
21       .translate([k / 2 - d[0] * 256, k / 2 - d[1] * 256]) // [0°,0°] in pixels
22       .scale(k / 2 / Math.PI)
23       .precision(0);
24
25     var data = {};
26     for (var key in json.objects) {
27       data[key] = topojson.feature(json, json.objects[key]);
28     }
29
30     // build up a single concatenated array of all tile features from all tile layers
31     var features = [];
32     layers.forEach(function(layer){
33       if(data[layer])
34       {
35         for(var i in data[layer].features)
36         {
37           // Don't include any label placement points
38           if(data[layer].features[i].properties.label_placement) { continue }
39
40           // Don't show large buildings at z13 or below.
41           if(zoom <= 13 && layer == 'buildings') { continue }
42
43           // Don't show small buildings at z14 or below.
44           if(zoom <= 14 && layer == 'buildings' && data[layer].features[i].properties.size < 10000) { continue }
45
46           features.push(data[layer].features[i]);
47         }
48       }
49     });
50
51     tilePath.features(features);
52   }
53 }
```

[EXPORT TO SVG](#) Q type in a place

Choose what to display:

- boundaries
- buildings
- earth
- landuse
- park
- beach
- wetland
- forest
- parking
- grass
- picnic site
- national park
- college
- pier
- retail
- natural wood
- attraction
- breakwater
- meadow
- school
- pedestrian
- fuel
- scrub
- retaining wall
- bridge
- common
- places
- pois
- roads
- path
- major road
- minor road
- rail
- highway
- ferry



Mike Bostock | © OpenStreetMap contributors | Mapzen

<http://mapzen.github.io/svg-export>

love!



thanks NACIS!

Katie Kowalsky //
@KatieKowalsky

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