

Mapbox GL: What?

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\$23,000

FINAL
WHEEL

\$300

What is
The Terminator?
\$4500

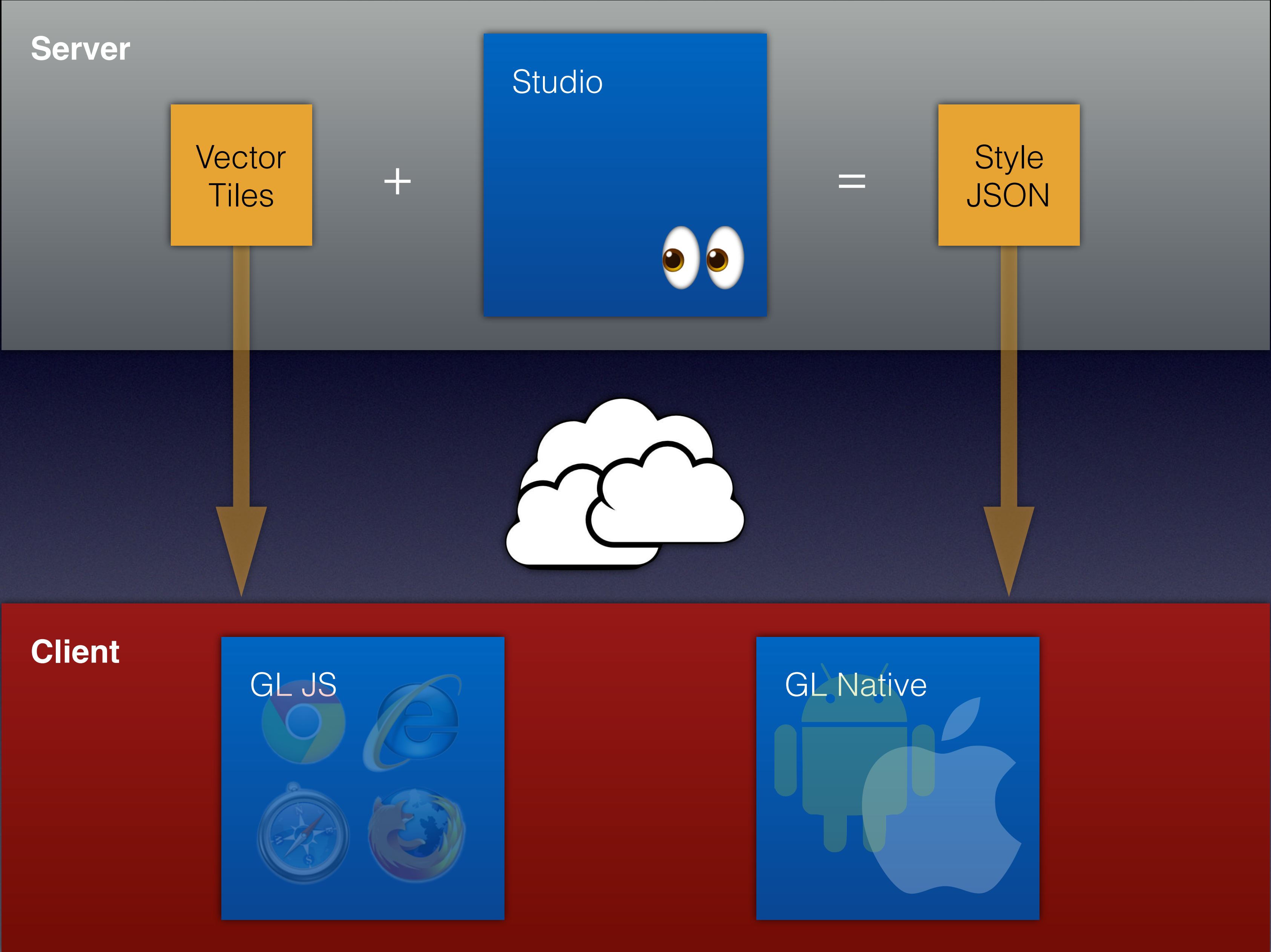
\$8,400

FINAL
WHEEL



Terms

- Vector data & rendering
- Mapbox Studio
- Mapbox GL
- Mapbox Vector Tile Spec
- Mapbox GL Style Spec
- Mapbox GL JS
- Mapbox GL Native
- Mapbox Mobile SDKs

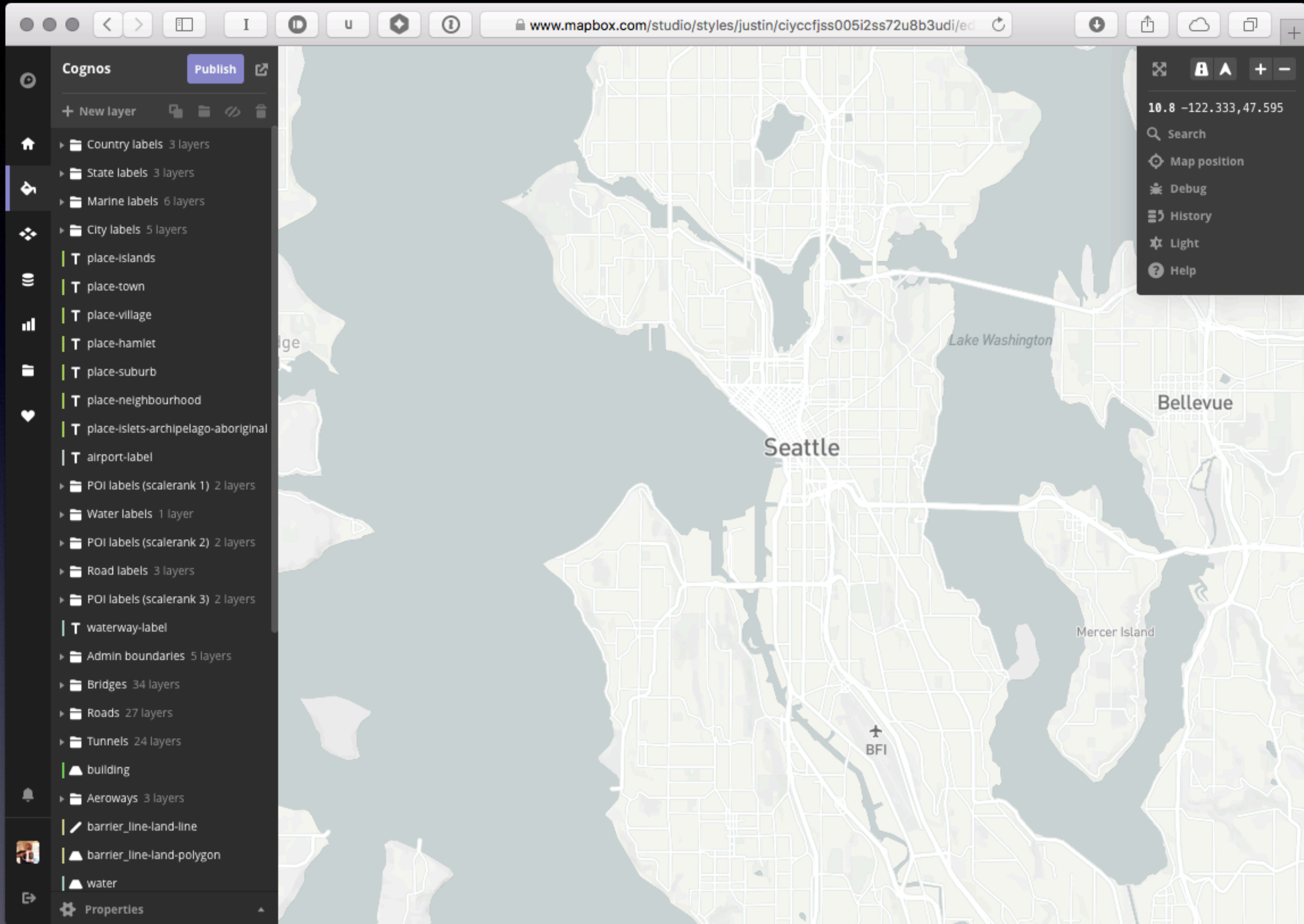


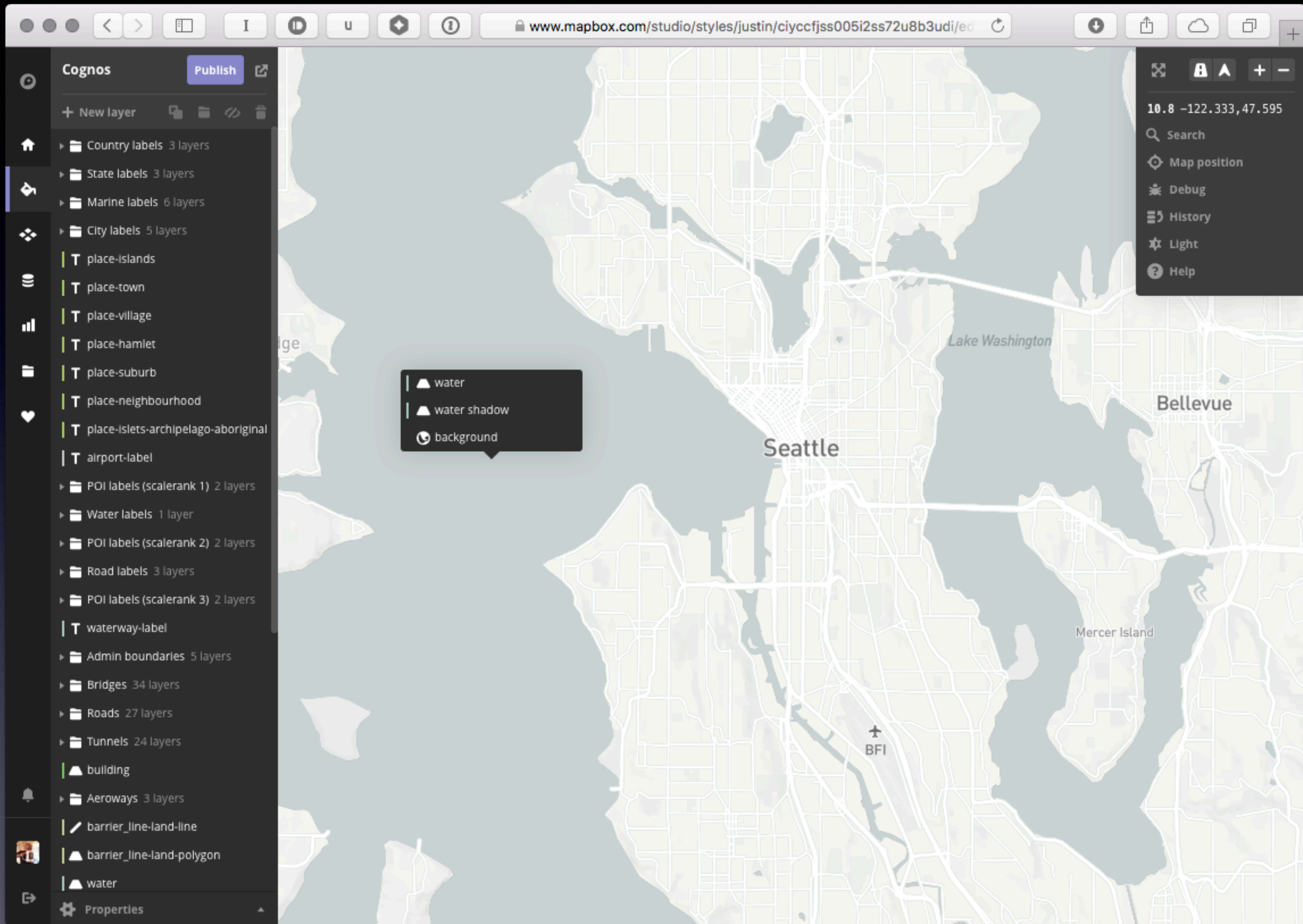
GL as OS Projects

- GL JS: Javascript for web apps
- GL Native: C++ for many platforms
 - Pulls in spec from GL JS project
 - Builds out to iOS, Android, Node, QT, Unity, pure C++, ...
 - Bindings: Objective-C/Swift, Java, Node.js

Mapbox Studio:

For Building & Editing Styles (Among Other Things)





www.mapbox.com/studio/styles/justin/ciyccfjss005i2ss72u8b3udi/ec

Cognos Publish

+ New layer

- Country labels 3 layers
- State labels 3 layers
- Marine labels 6 layers
- City labels 5 layers
 - place-islands
 - place-town
 - place-village
 - place-hamlet
 - place-suburb
 - place-neighbourhood
 - place-islets-archipelago-aboriginal
 - airport-label
- POI labels (scalerank 1) 2 layers
- Water labels 1 layer
- POI labels (scalerank 2) 2 layers
- Road labels 3 layers
- POI labels (scalerank 3) 2 layers
- waterway-label
- Admin boundaries 5 layers
- Bridges 34 layers
- Roads 27 layers
- Tunnels 24 layers
- building
- Aeroways 3 layers
- barrier_line-land-line
- barrier_line-land-polygon
- water
- Properties

water

Style Select data

Basics

Color hsl(185, 9%, 81%)

Pattern none

Opacity 1

Antialias

1px stroke hsl(185, 9%, 81%)

Translate 0 px x 0 px y

Translate anchor

Edit Values

RGB HSV

H 185

S 4

V 83

α 100

10.8 -122.333, 47.595

Search

Map position

Debug

History

Light

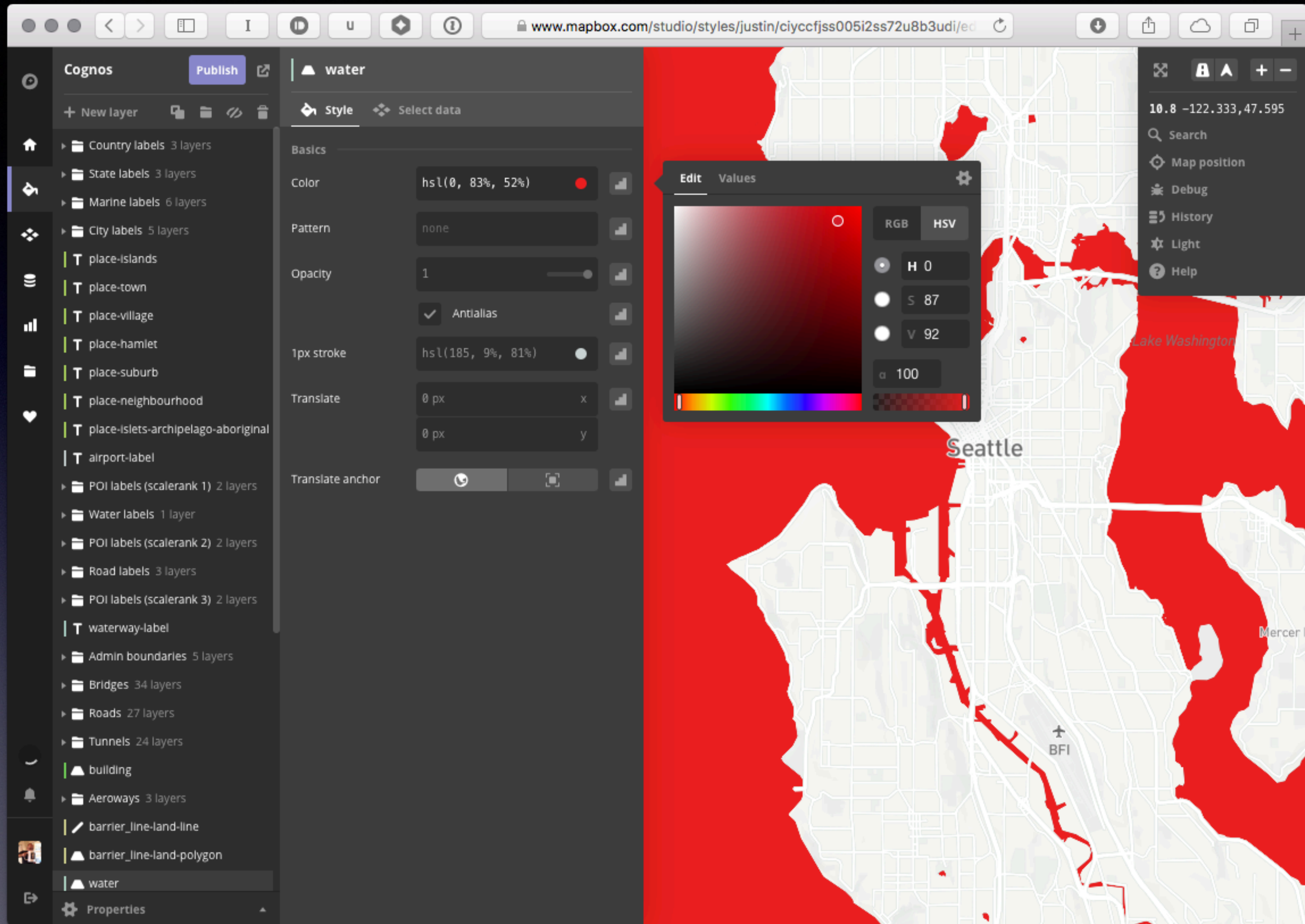
Help

Seattle

Lake Washington

BFI

Mercer I



Styling Model Allows For Client-Side Changes

- Studio: For design iteration
- GL-based tools: For display/modification/consumption
- (Yes, technically Studio embeds GL JS; that's how you actually see your map during design)

Style Layers

- Sources: Vector tiles, raster tiles, GeoJSON
- Layer types: Fill, line, symbol, circle
- Filters: **depth > 100, type == lake**
- Style properties: Fill color, line width, symbol icon, circle opacity

Runtime Styling

- Like Studio, but in code at runtime
- Kind of a bigger deal on native/mobile
- Same building blocks



Pseudo-Code

1. Give me the layer called **water**
2. I expect it to be a **fill** layer
3. Set its **fill-color** to red
4. But animate it over **2.0s**



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Data-Driven Styling

- Subset of Runtime Styling
- Broadly style layer properties based on feature properties
- Frees you up from interpolation, categorization, fine-tuning, etc.

Pseudo-Code

1. Give me the layer called **water**
2. Set its **fill-color** between light and dark blue based on the **depth** property (exponential)
3. Or set its **fill-color** based directly on the value of the **precolored** property (identity)
4. Or set its **fill-color** to one of five values based on **depth** (categorical)

Mobile Context

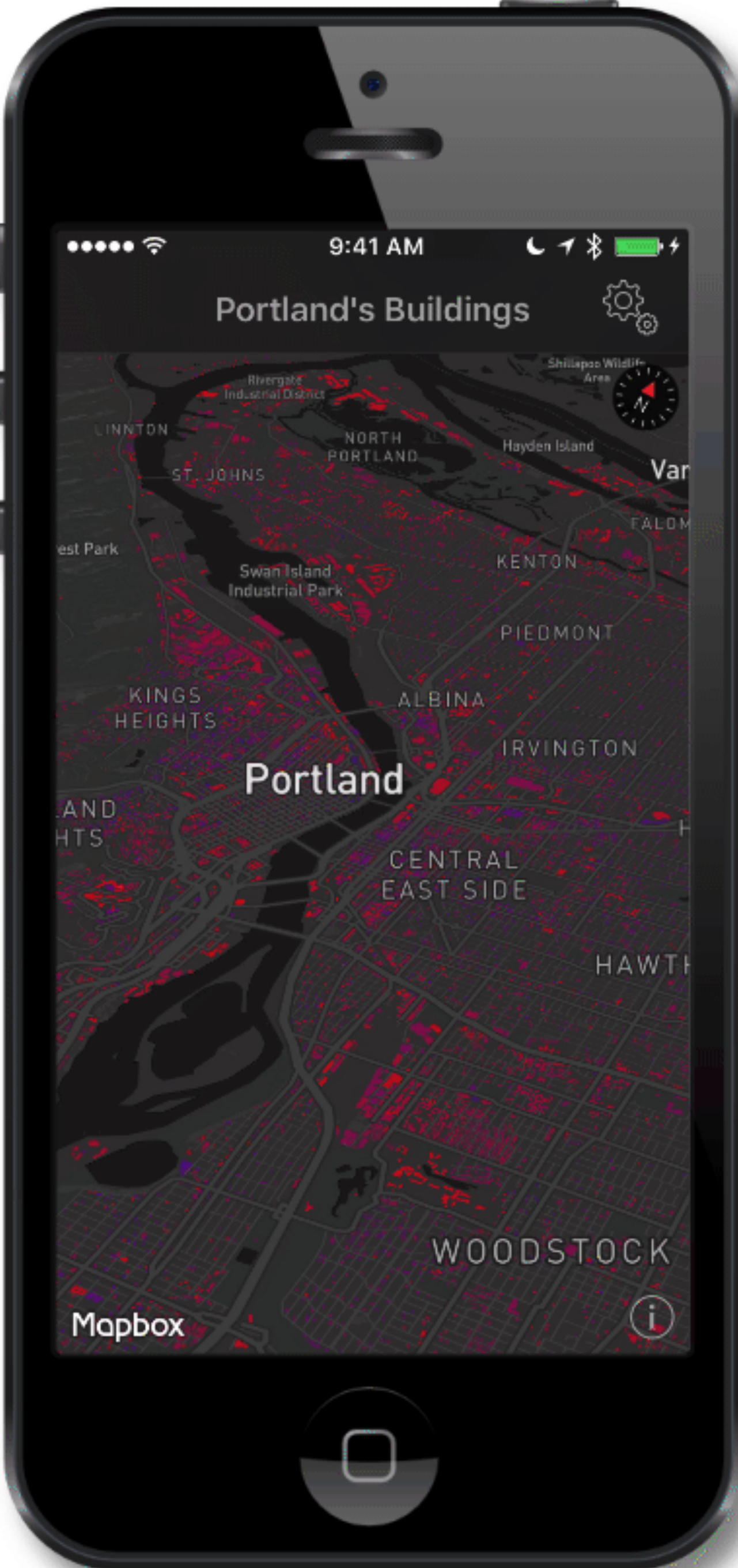
- Interesting in light of things like:
 - Local-to-device/user data
 - Field-generated data
 - Runtime conditions
 - e.g. Mobile sensor input



Portland Buildings

- I wanted to test the scale of the tools
- So I added 650,000 polygons at runtime
- And then I runtime styled them









Portland's Buildings

Weinhard
Brewery Complex

1921

Mapbox



Portland's Buildings

1957

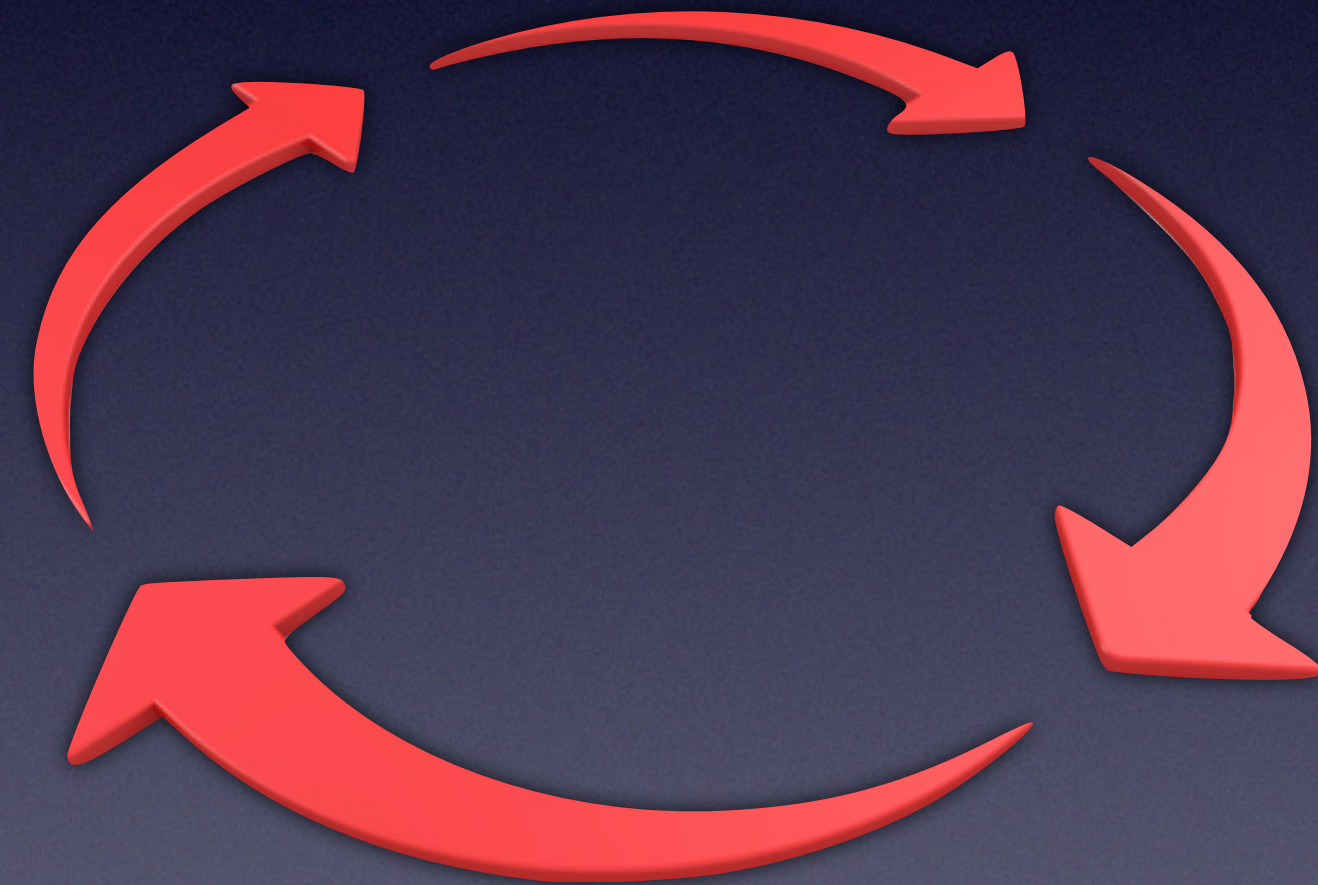


Mapbox



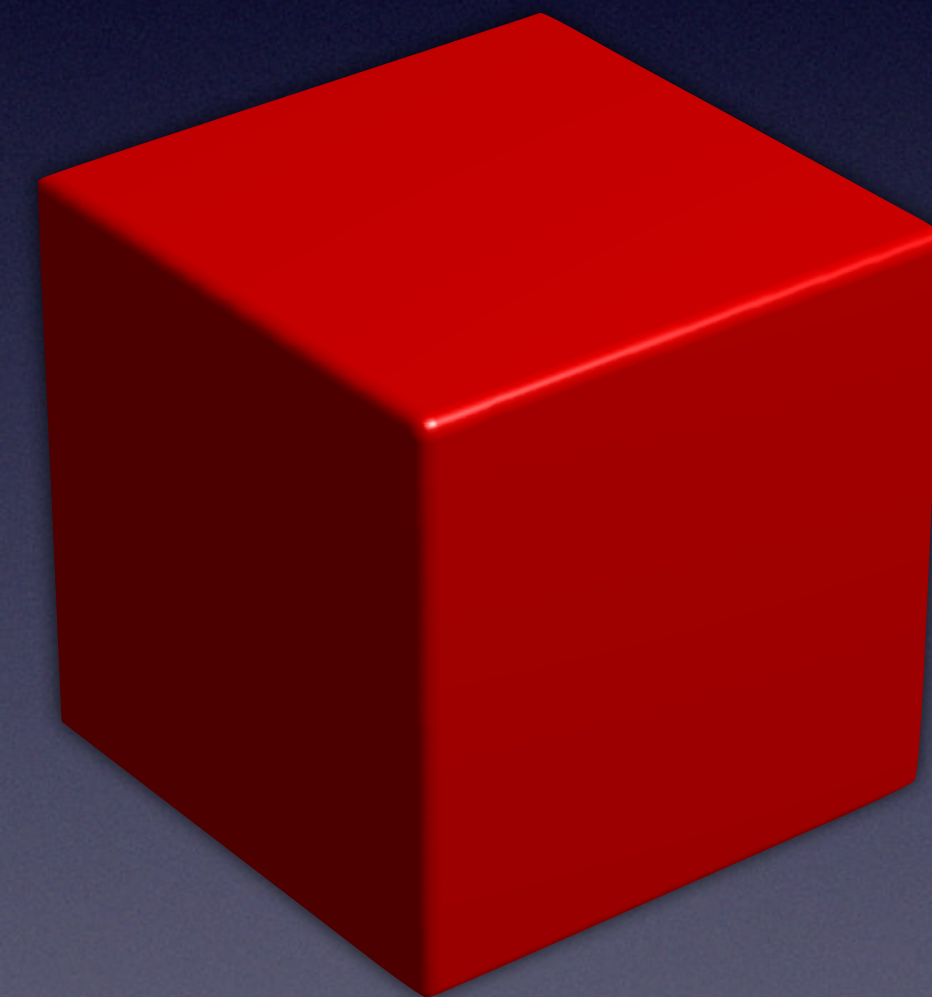
It's The Same Stuff!

1. Get the **buildings** layer
2. Apply a filter
3. Set its **fill-color**



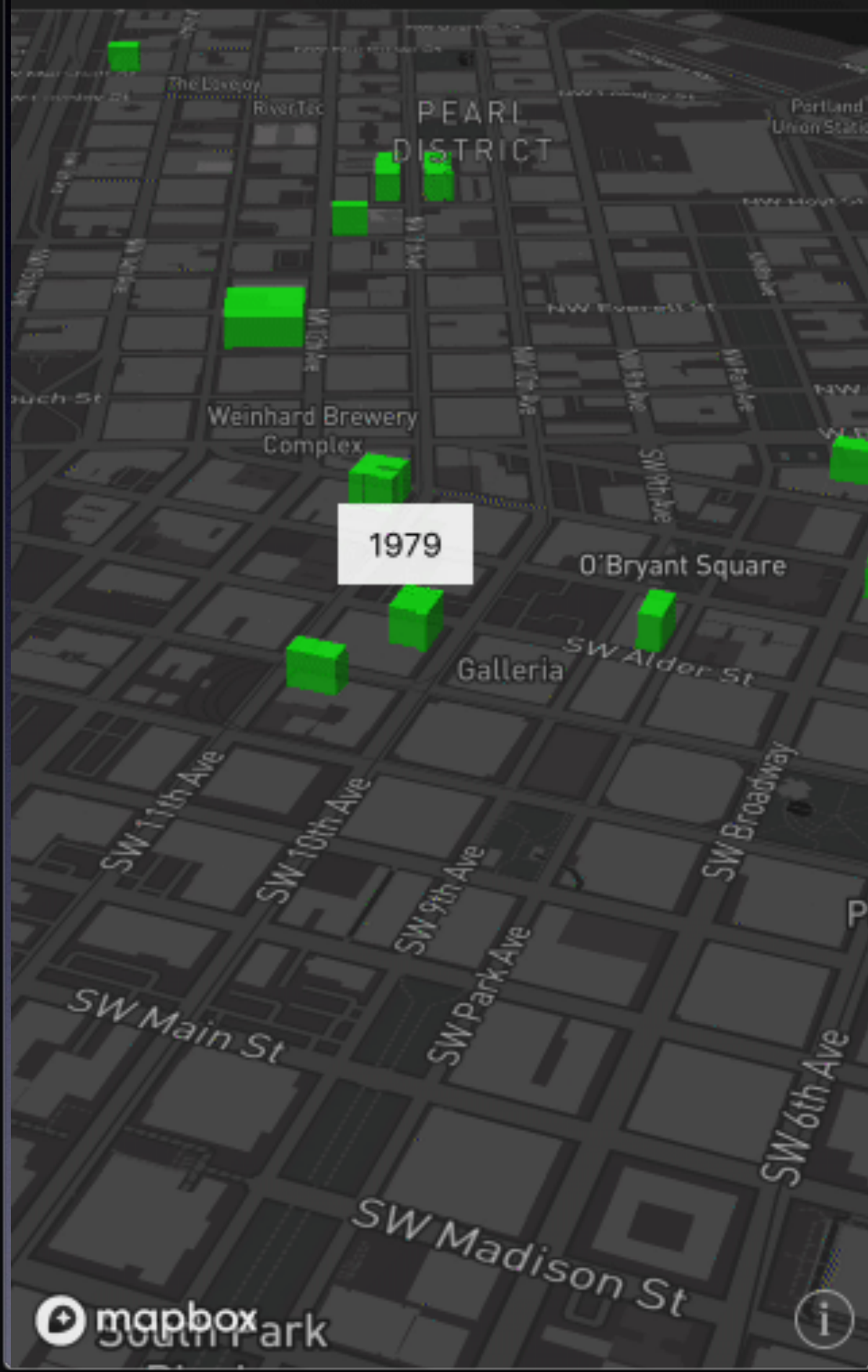
Sneak Peek: 3D Extrusions

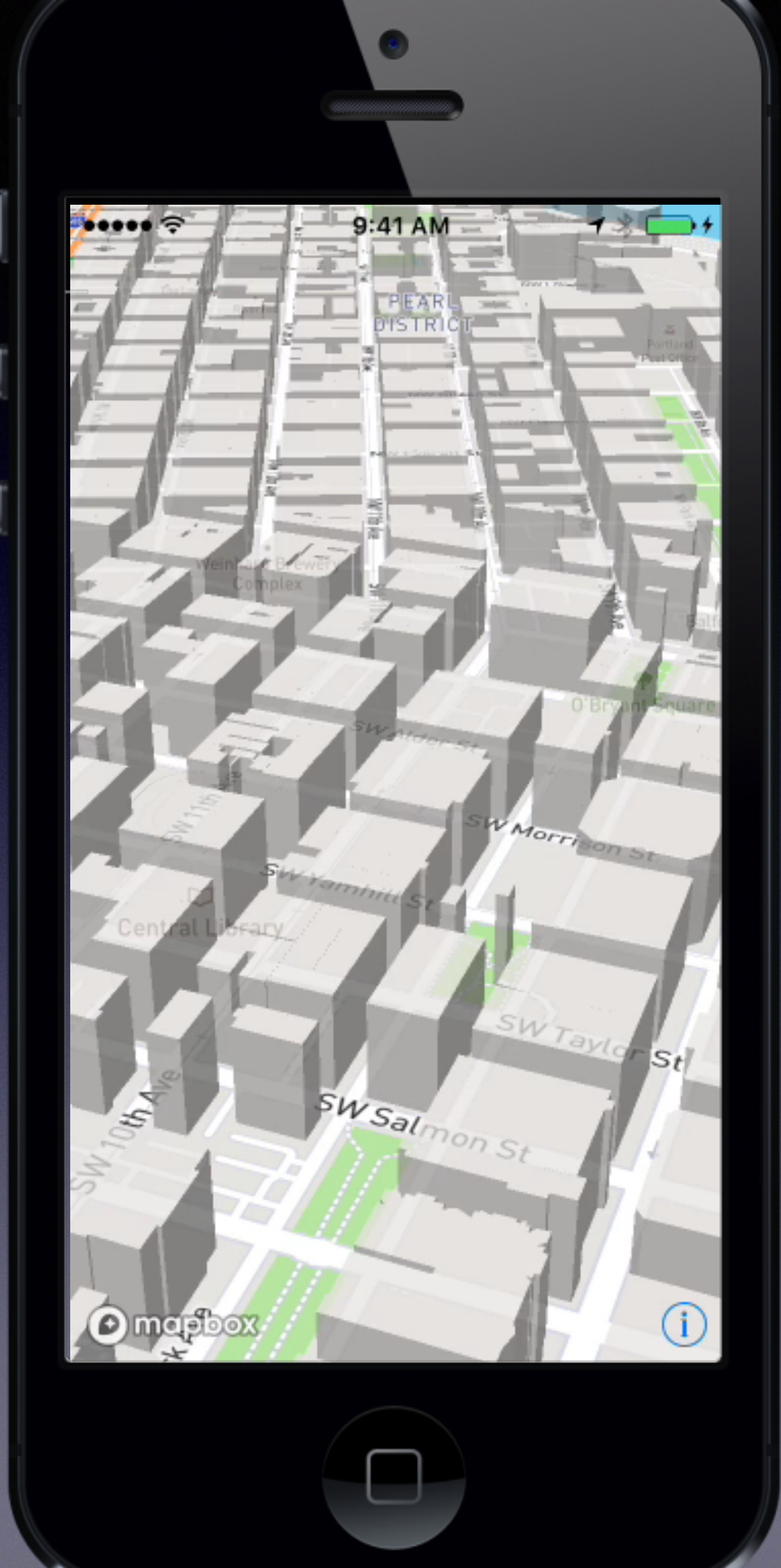
- Yes, we have this on GL JS already
- But now its on mobile! (in alpha)
- New layer type: **fill-extrusion**





Portland's Buildings









Conclusion

- Mapbox GL data/style/renderer ecosystem
- Runtime styling & data-driven styling
- 3D Extrusions
- Inspired?



Thank You & Questions

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- mapbox.com/blog

