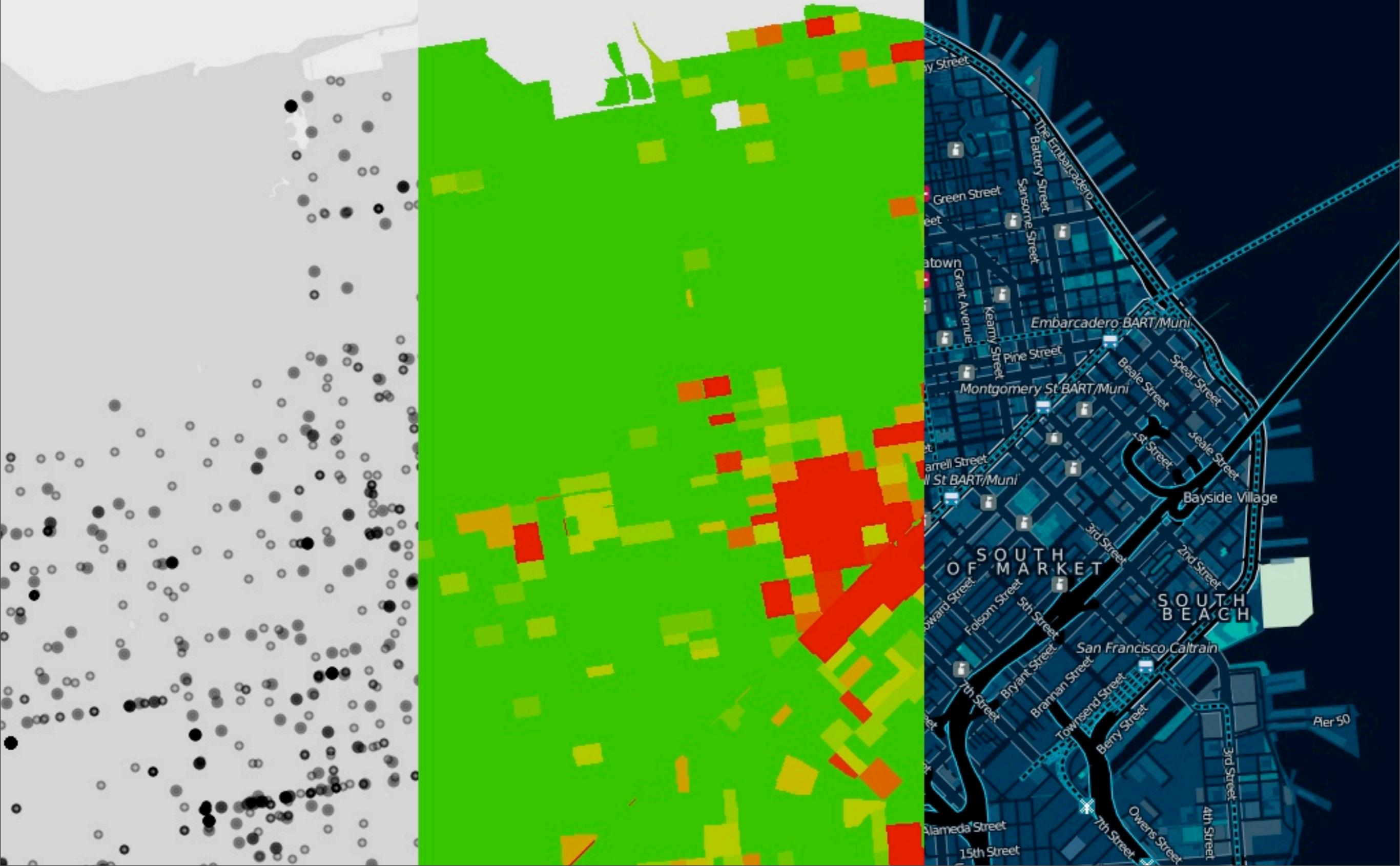


# MAKING MAPS

## with Zain Memon

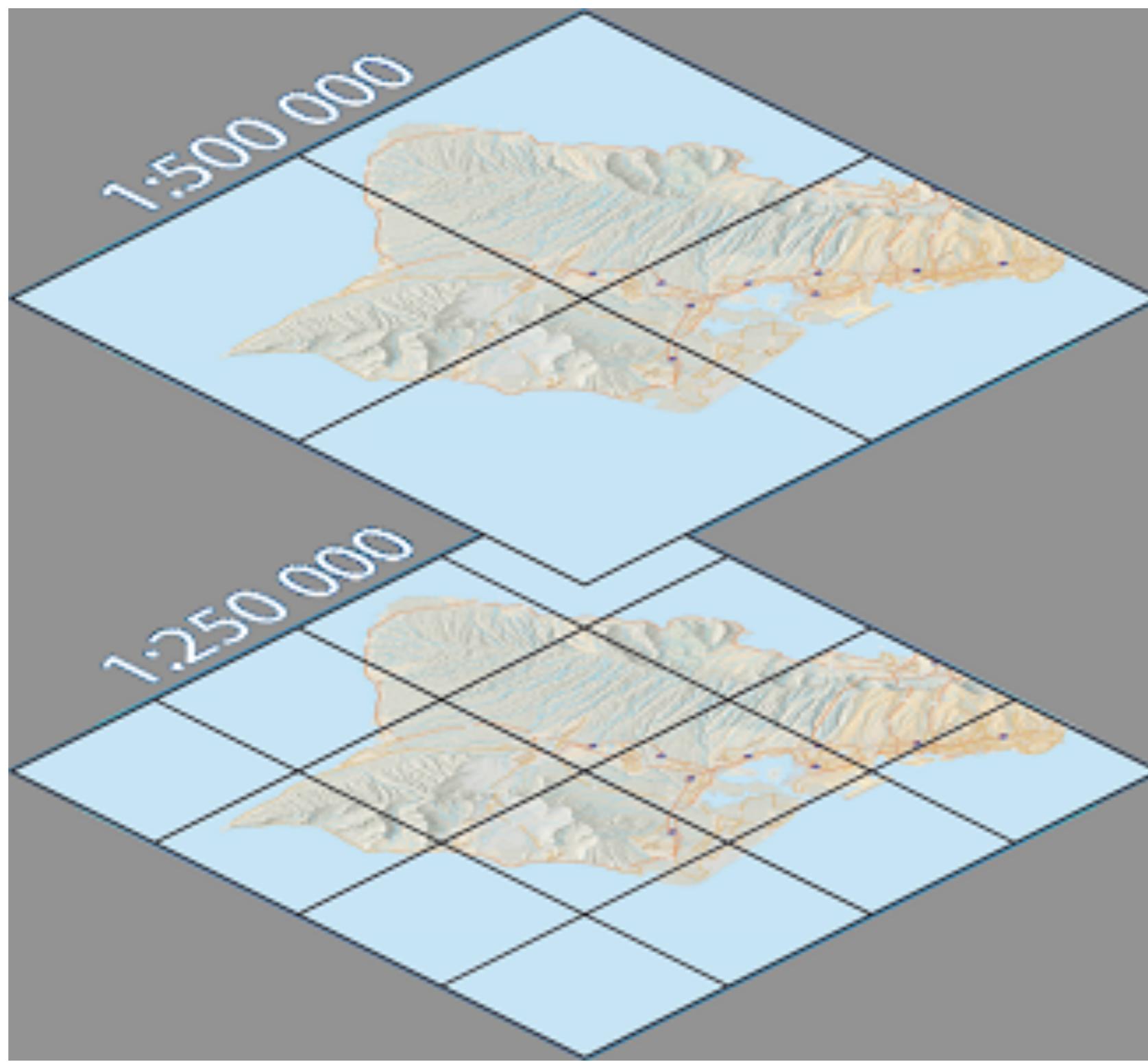


# THE MAP SANDWICH



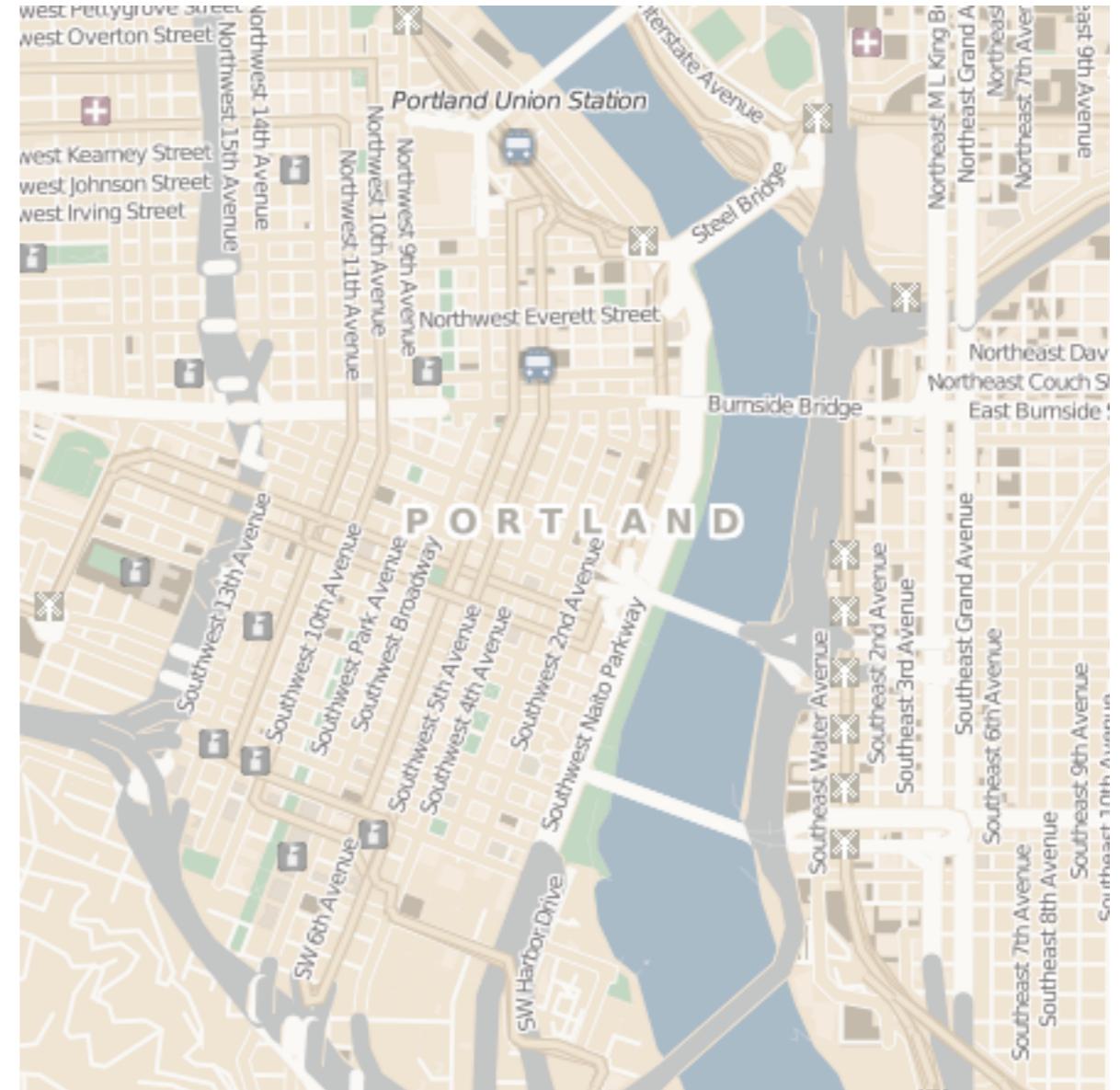
# CARTOGRAPHY 101







zoom = 14  
x = 2608  
y = 5859



.../tiles/14/2608/5859.png

.../tiles/{z}/{x}/{y}.png



**POINTS**

**LINES**

**POLYGONS**

**oh my!**

**(MULTI-)**

**POINTS**

**(MULTI-)**

**LINES**

**(MULTI-)**

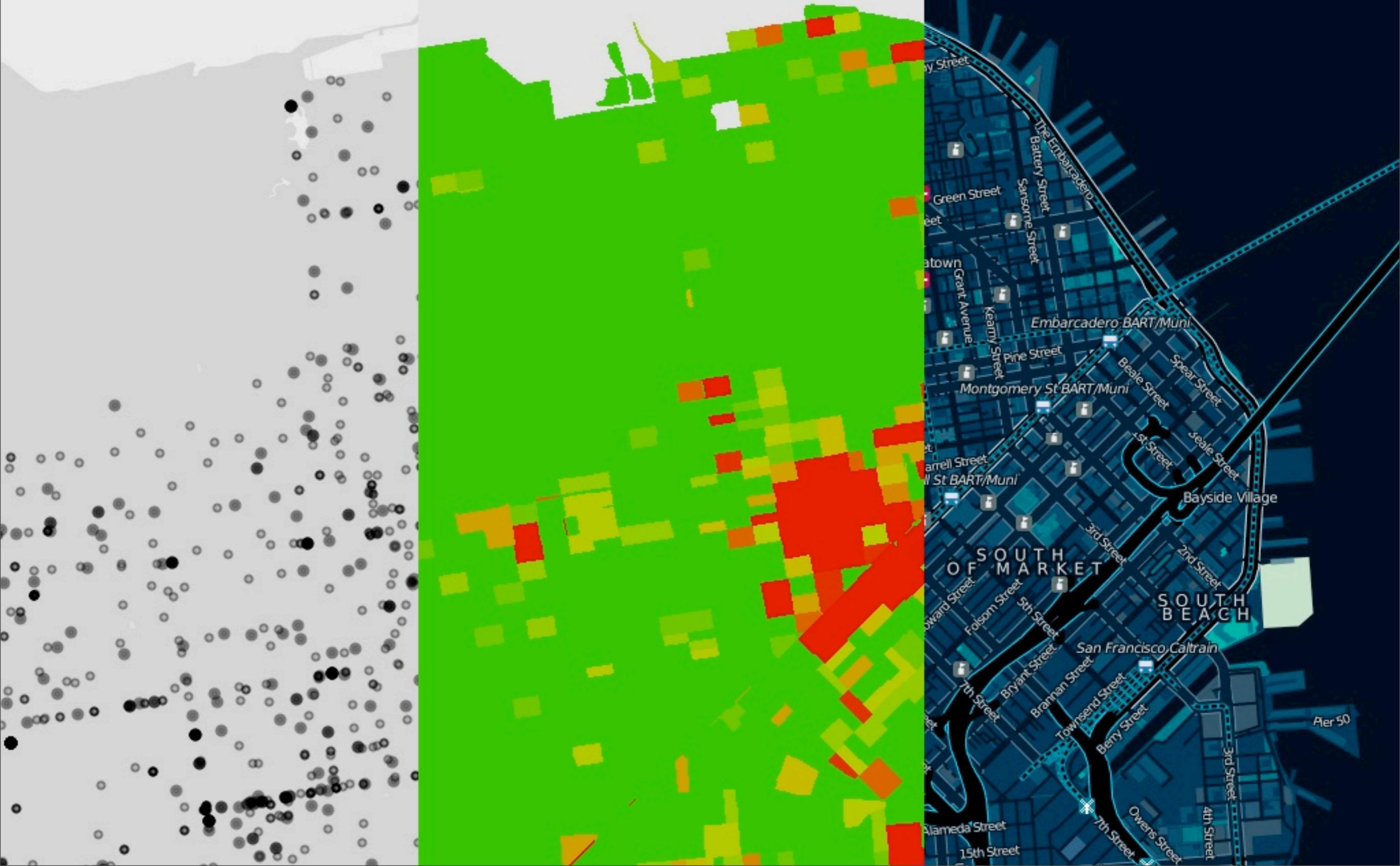
**POLYGONS**

**oh my!**

**POSTGRES**  
+  
**POSTGIS**

# JAVASCRIPT LIBRARIES

# THE MAP SANDWICH



# STEP 1: DOTS



# GEODJANGO

```
class Restaurant(models.Model):  
    name = models.CharField()  
    rating = models.IntegerField()  
    pt = models.PointField()
```

```
here = Point(-96.8763, 29.9053)  
Restaurant.objects.filter(pt=here)
```

```
here = Point(-96.8763, 29.9053)

Restaurant.objects.filter(
    pt_distance_lt=(here, D(mi=1))
)
```

```
r = Restaurant.objects.get(  
    name='Siamone Thai')  
  
zipCode.objects.get(  
    poly__contains=r.pt)
```

```
z = zipCode.objects.get(  
    code='94105')
```

```
Restaurant.objects.filter(  
    pt_within=z.poly  
)
```



# STEP 1: DOTS



[github.com/zain/pycon2012](https://github.com/zain/pycon2012)

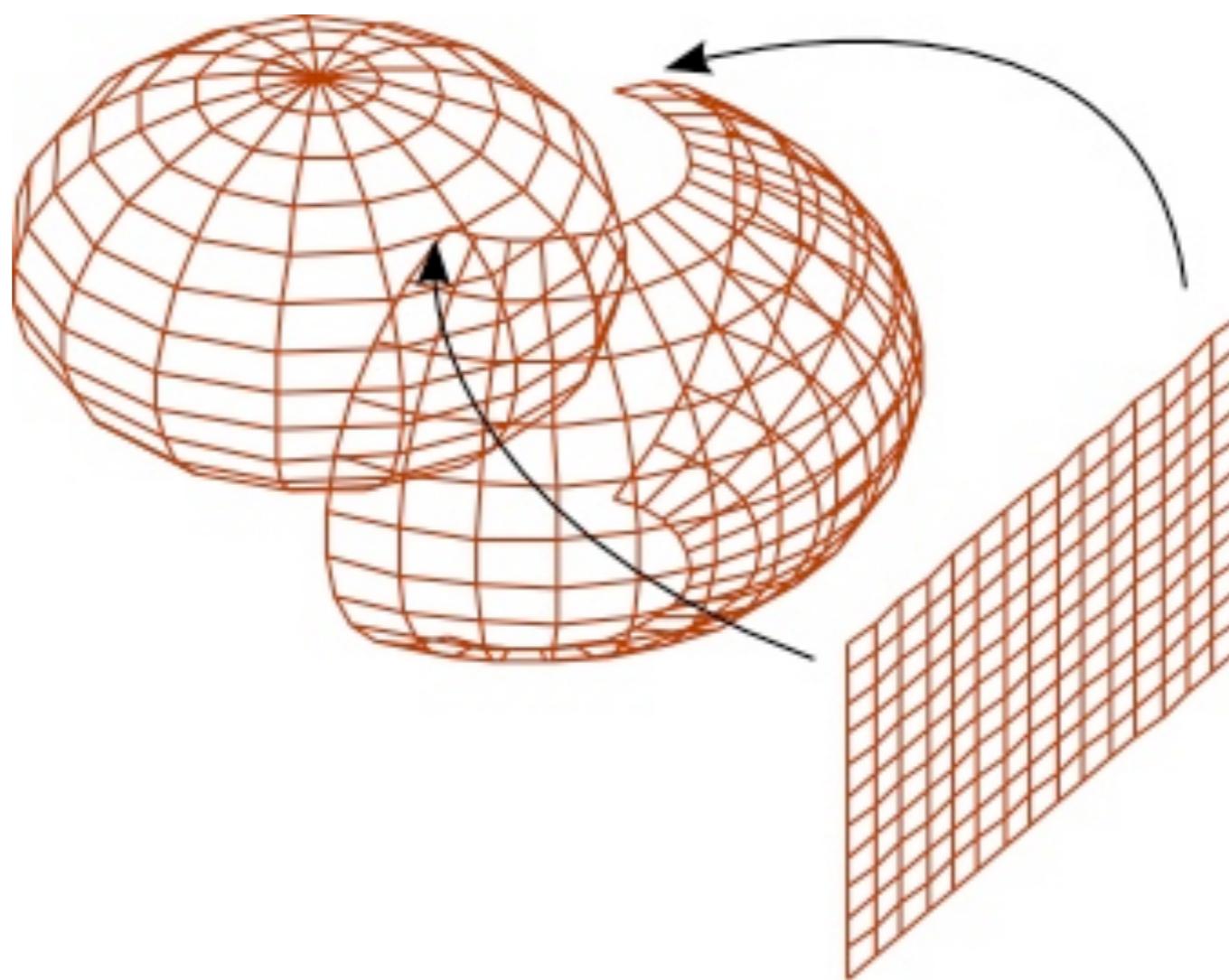
# PROJECTIONS



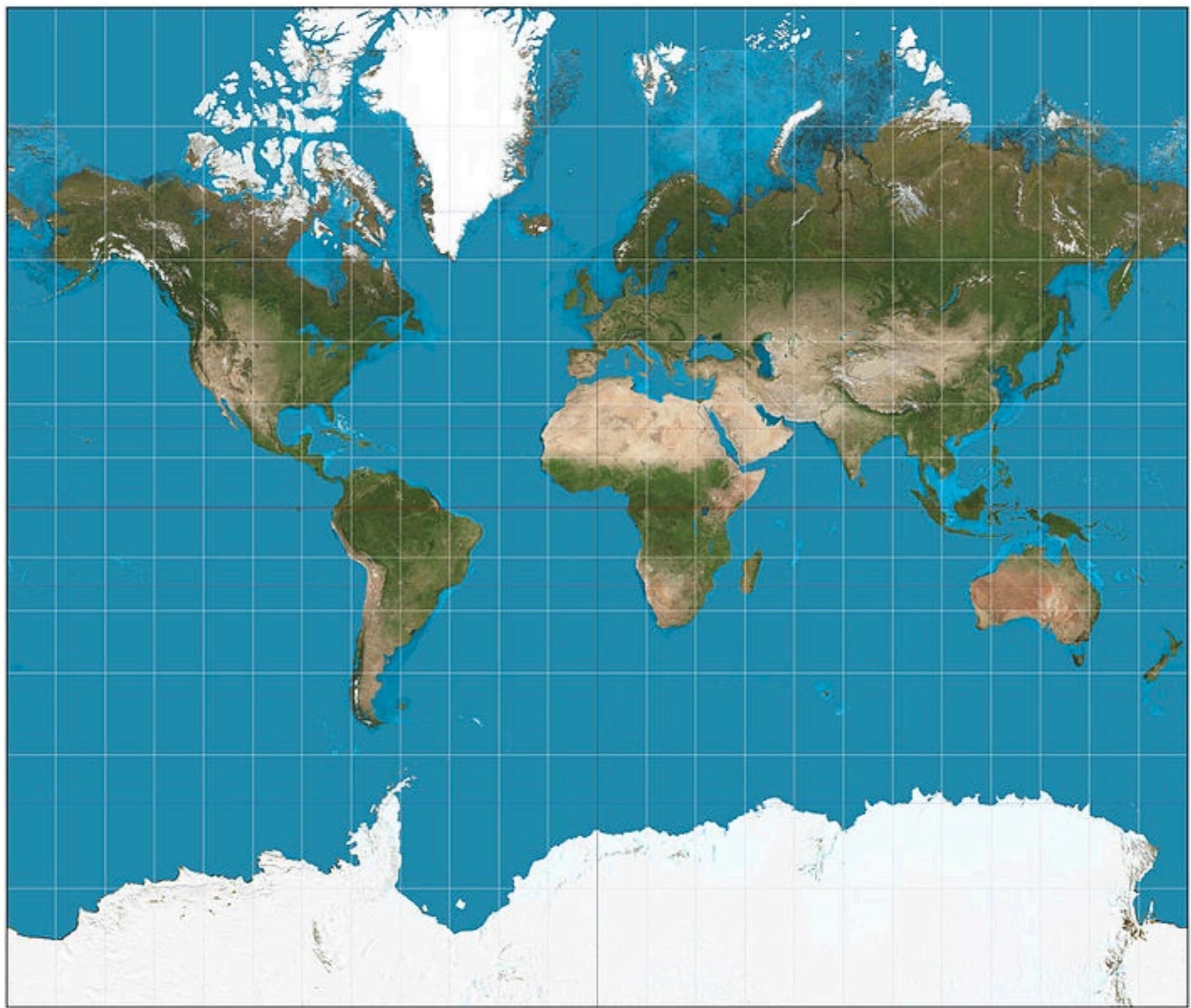


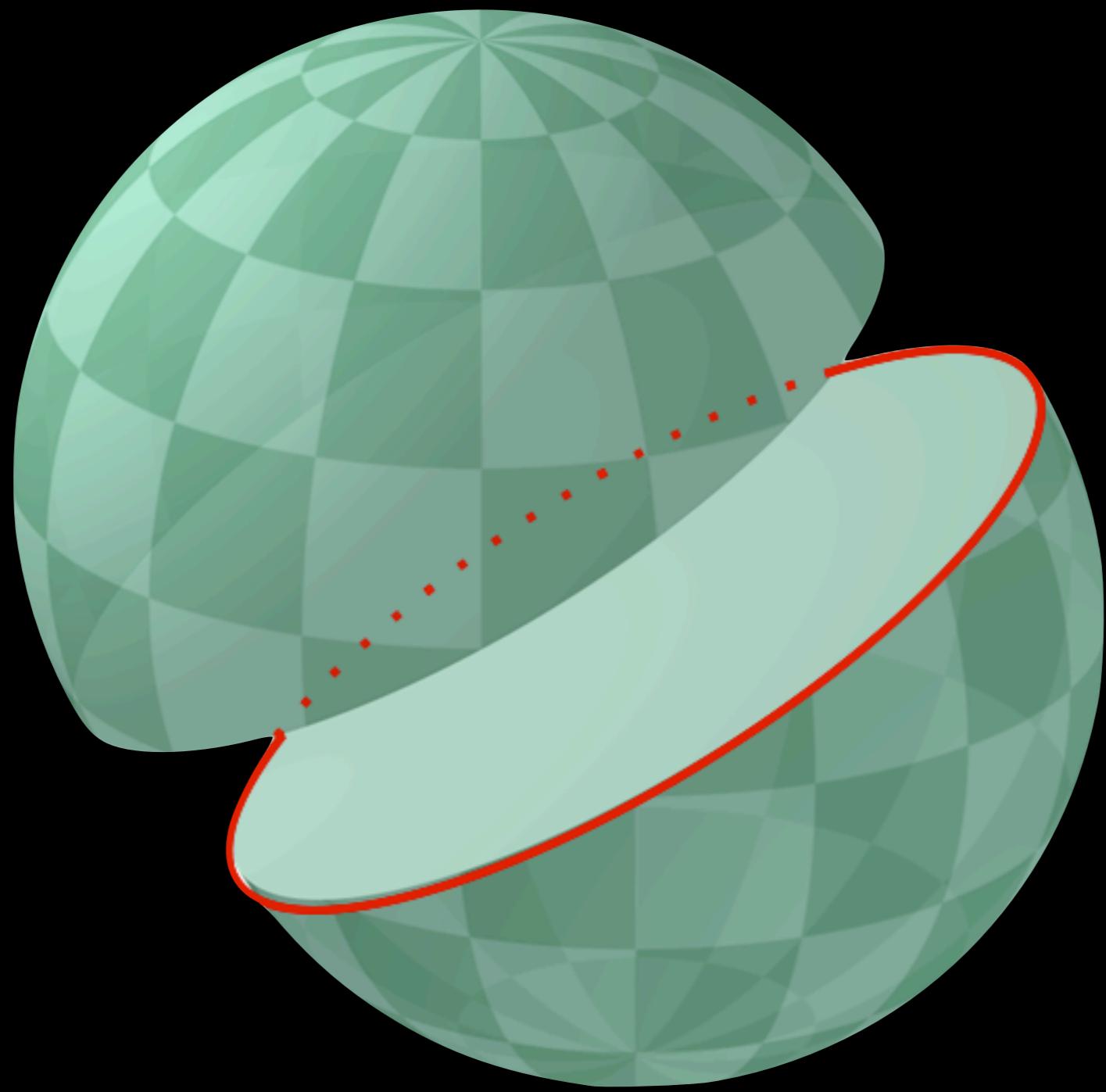




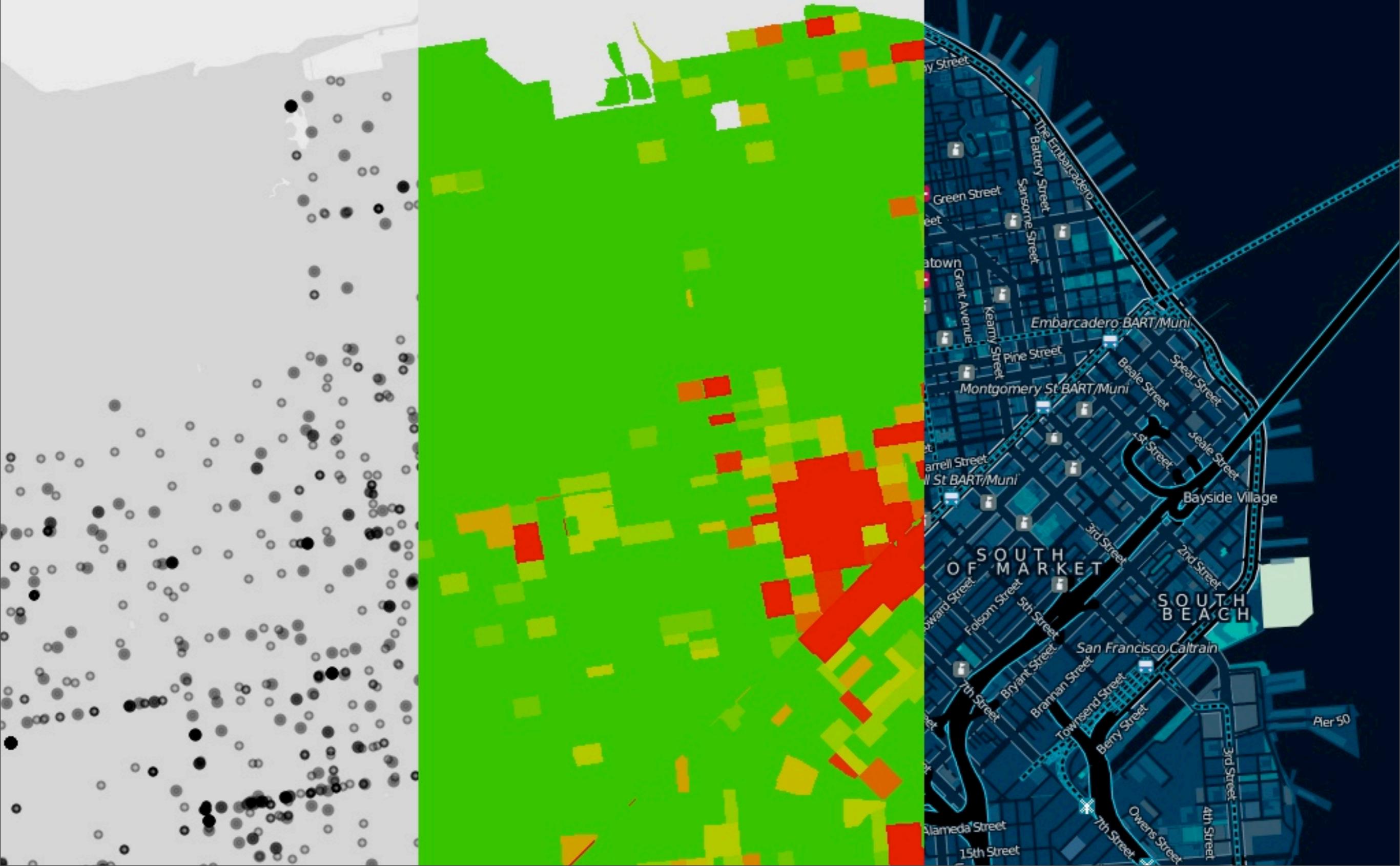


**Spherical mercator  
IS DISTORTED**





# THE MAP SANDWICH



# STEP 1: DOTS



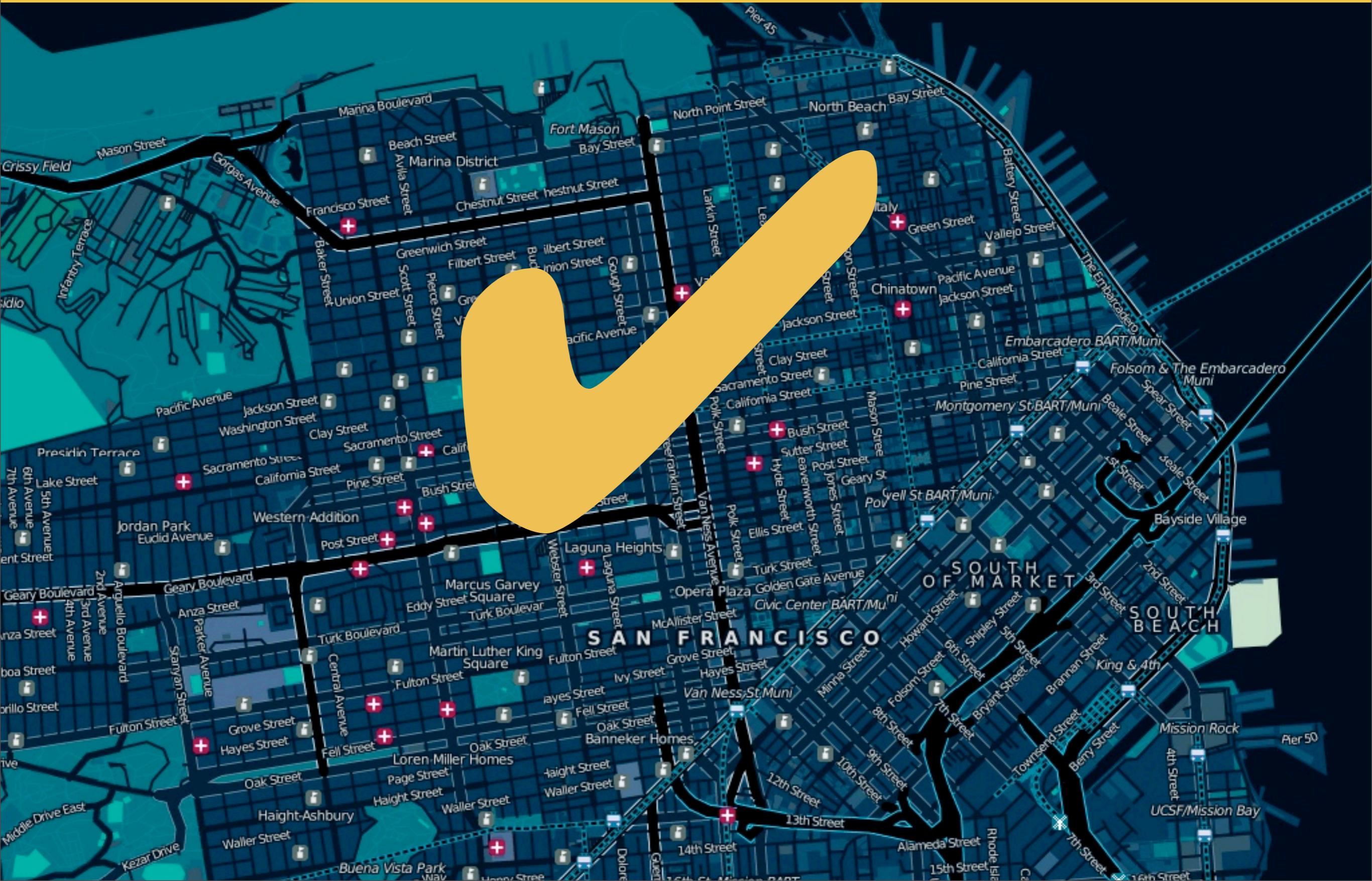
# STEP 2: BASE MAP



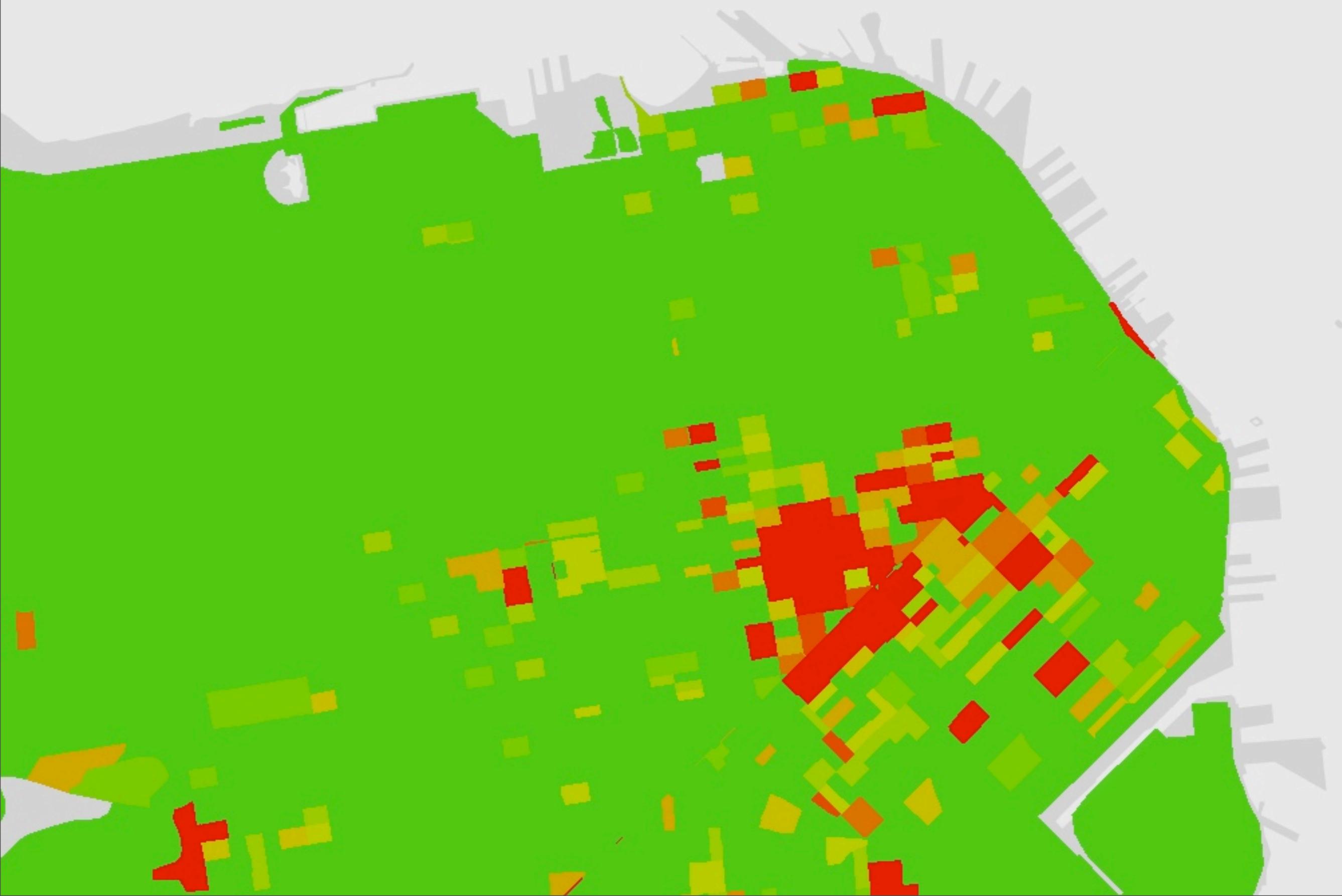
# **data sources**



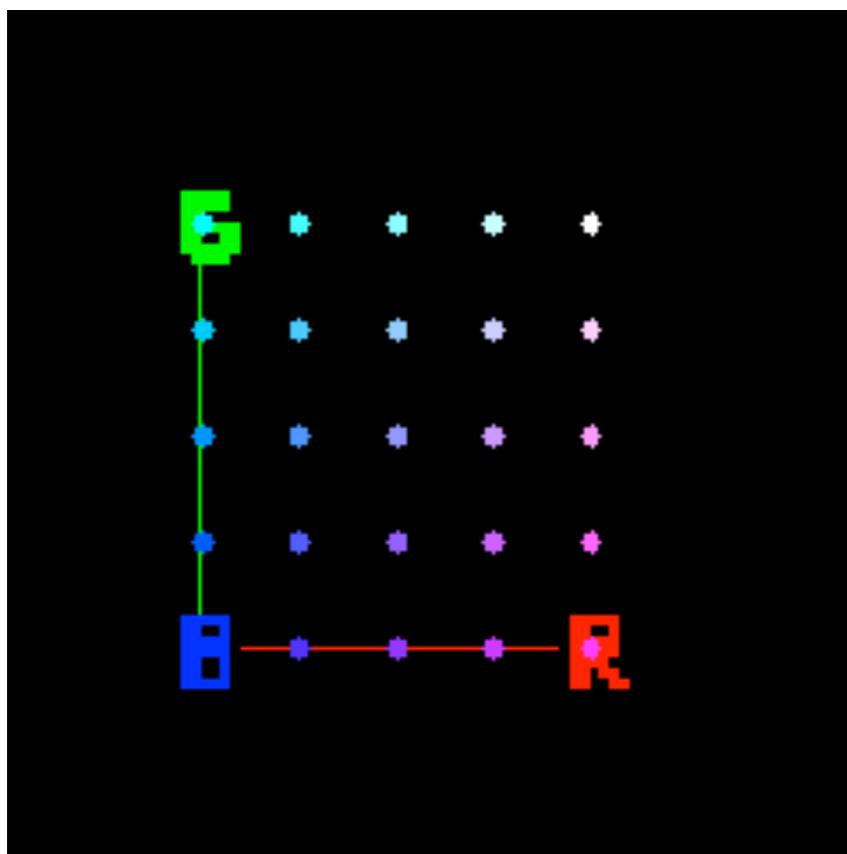
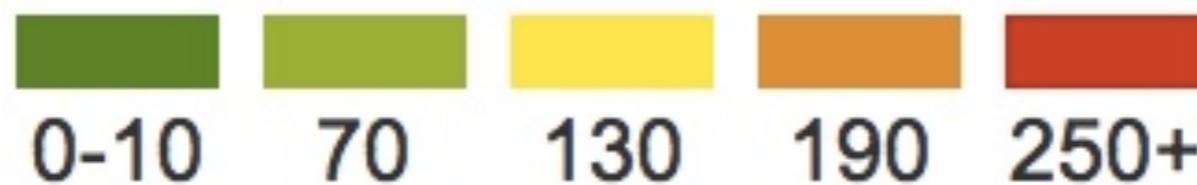
# STEP 2: BASE MAP



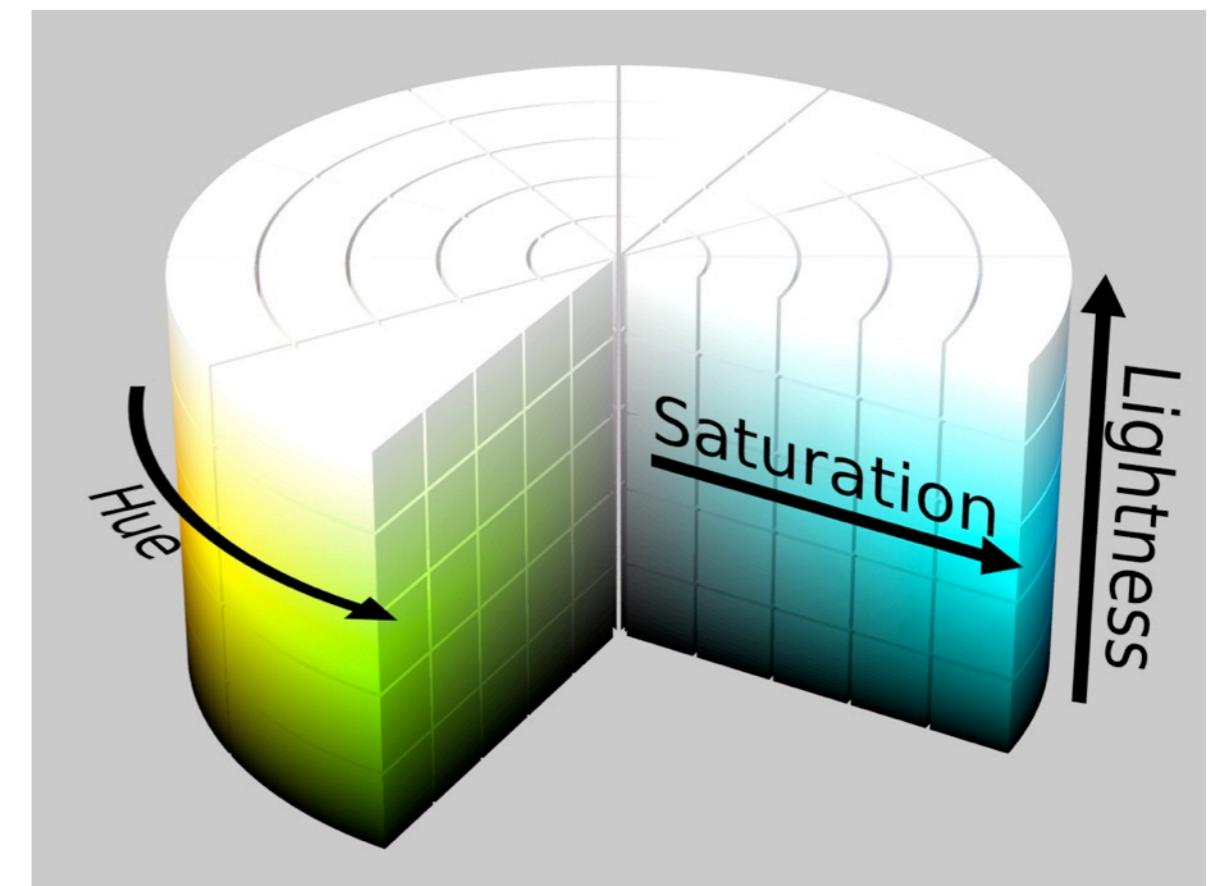
# STEP 3: HEATMAP



# HEATMAP COLOR SCALES



RGB



HSL



