Urban Heating

- Increased temperatures within urban environments
- Data from California Irrigation Management Information System (CIMIS)
- Solar irradiance, temperature, perspiration, humidity, etc.

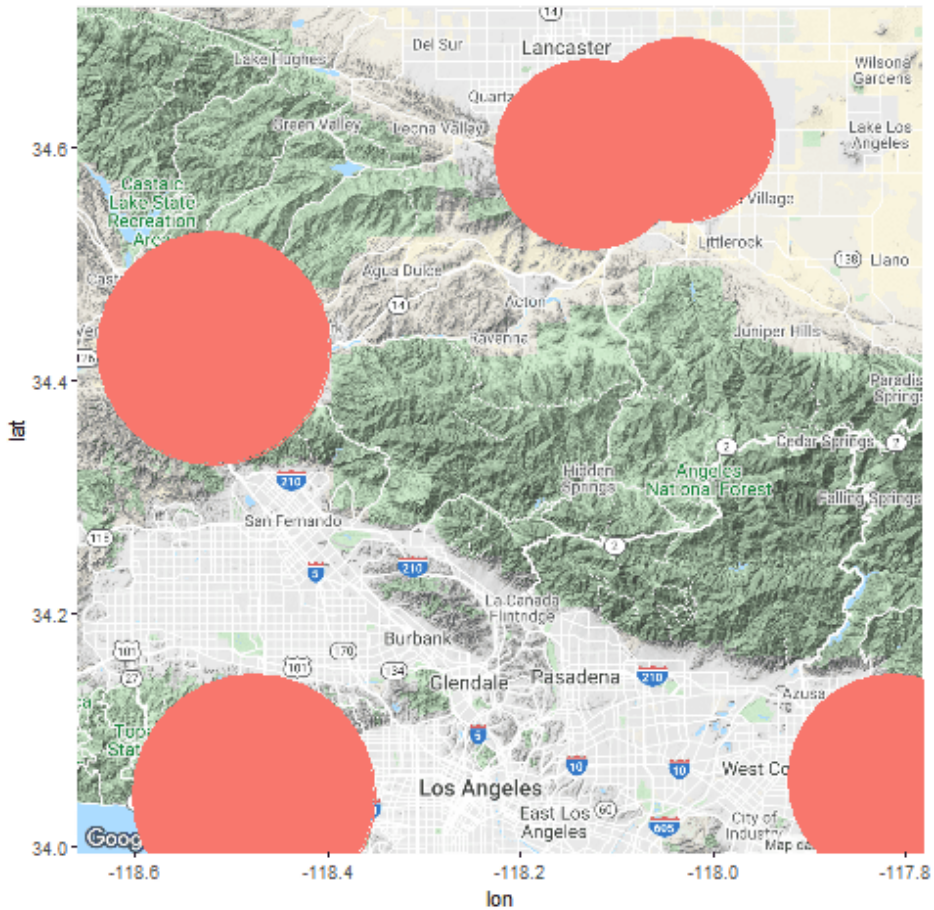
Jupyter Notebook

https://github.com/robertreny/eeb-c177-project/blob/master/analyses/Data%20for%20mapping.ipynb

R code

```
library(ggplot2)
library(ggmap)
library(gganimate)
Jan2020 <- read.csv("mapping Jan2020.csv")
la_county<-get_map(c(-118.2218,34.3582))
basemap <- ggmap(la_county)
d <- basemap +geom_point(aes(x=long,y=lat, group
= lat, colour = "red", size = Air.Temp..F.), data =
Jan2020) + scale_size("Air.Temp..F.",range = c(1,60))
+ theme(legend.position = "none") +
transition_time(Hour..PST.)
anim_save("Januaryheating.gif", d)
```

Animation


Lancaster
Del Sur
Lake Los Angeles
Littlerock
Llano
Juniper Hills
Acton
Agua Dulce
Green Valley
Leona Valley
Castaic Lake State Recreation
Cedar Springs
Angeles National Forest
San Fernando
Burbank
Glendale
Pasadena
Azusa
Los Angeles
East Los Angeles
34.6
34.4
34.2
34.0
lat
-118.6
-118.4
-118.2
-118.0
-117.8
lon

To get a map:

- Get google API key from google cloud platform by making a **new project** of a **static map**
- Enable **Billing**
- Set Geolocation, Geocoding, Directions, and Maps Static API to **enabled**
- in R: register_google(key = "your key looks like ALKJiolkjASDMZXCOPlp")