

Hi-Res Maps and Forecasts of Air Quality in San Antonio

Team Jellyfish

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CIV
TECH
SA

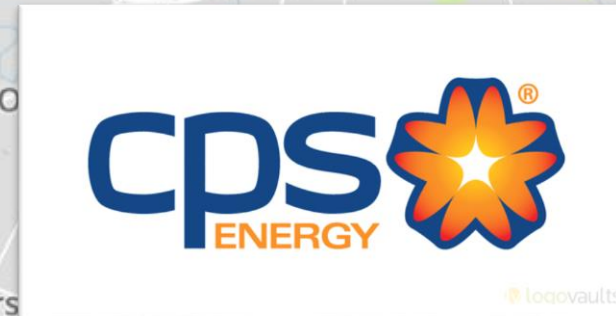
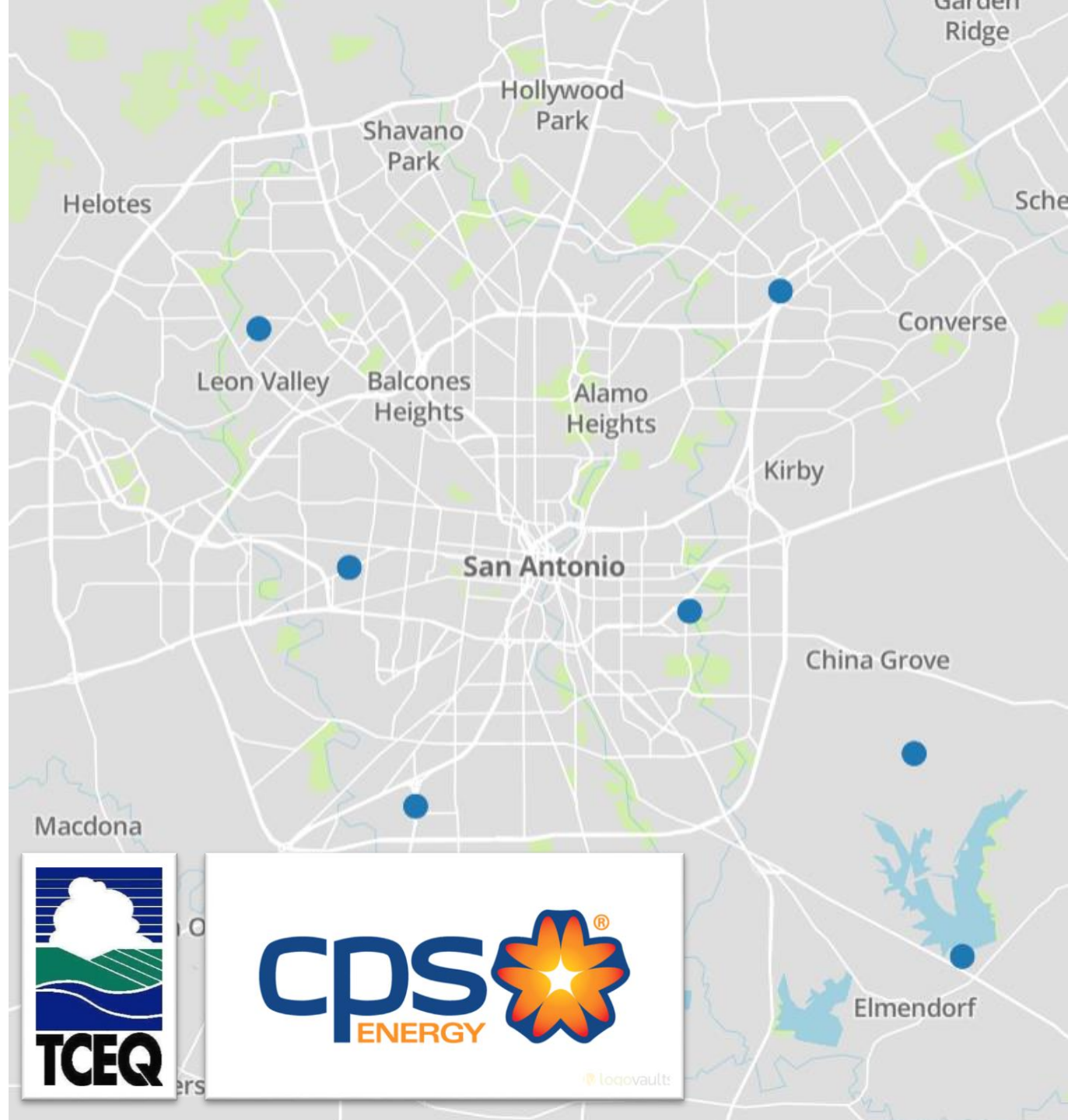
The Problem

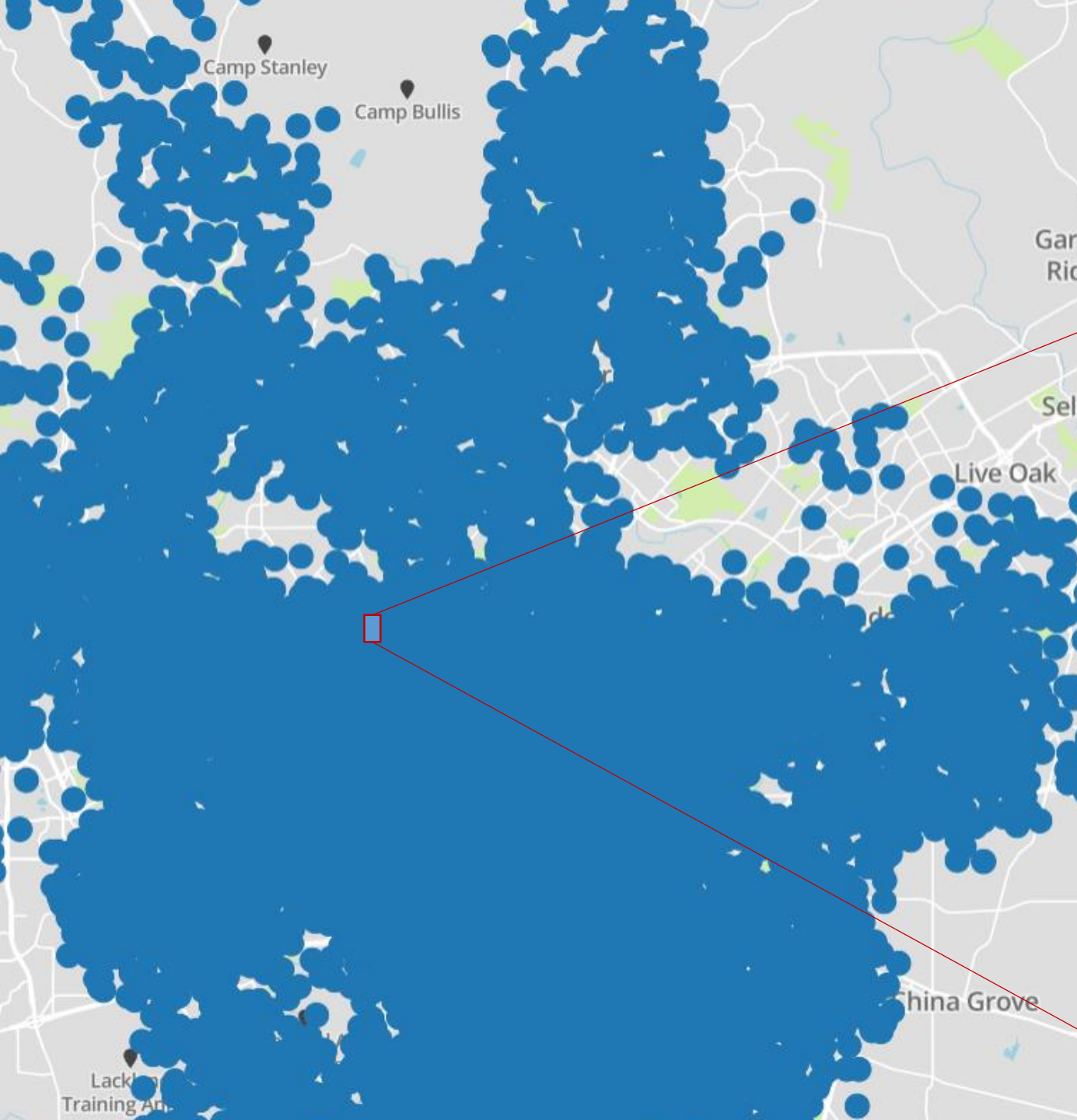
PM2.5

- General Measure for Air Quality
- Impacts Health
 - 22k to 55k Deaths/Year in US
- Impacts Climate
- Impacts Local Economy
 - \$3.2 to \$36.2 Billion!!!

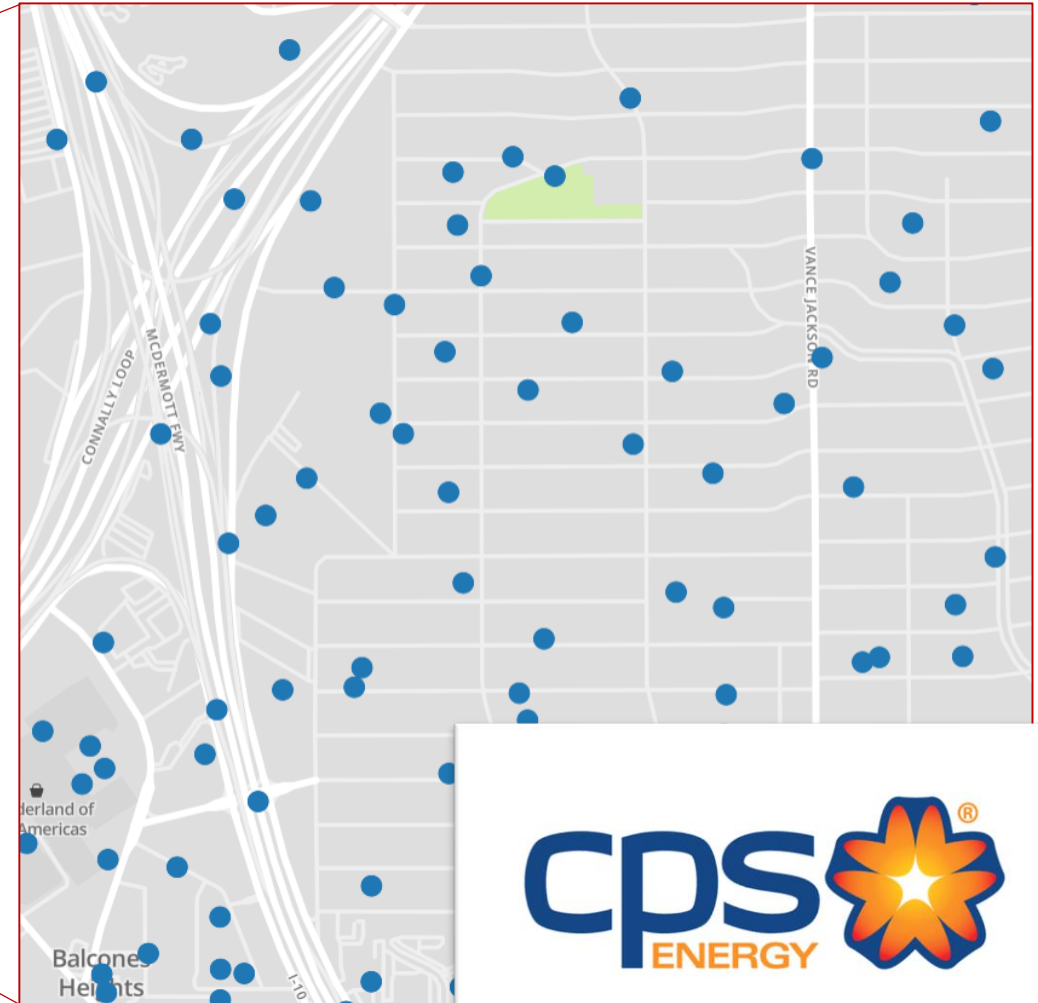
Not enough sensors

- 465 sq. miles
- Only a handful of measurement sites

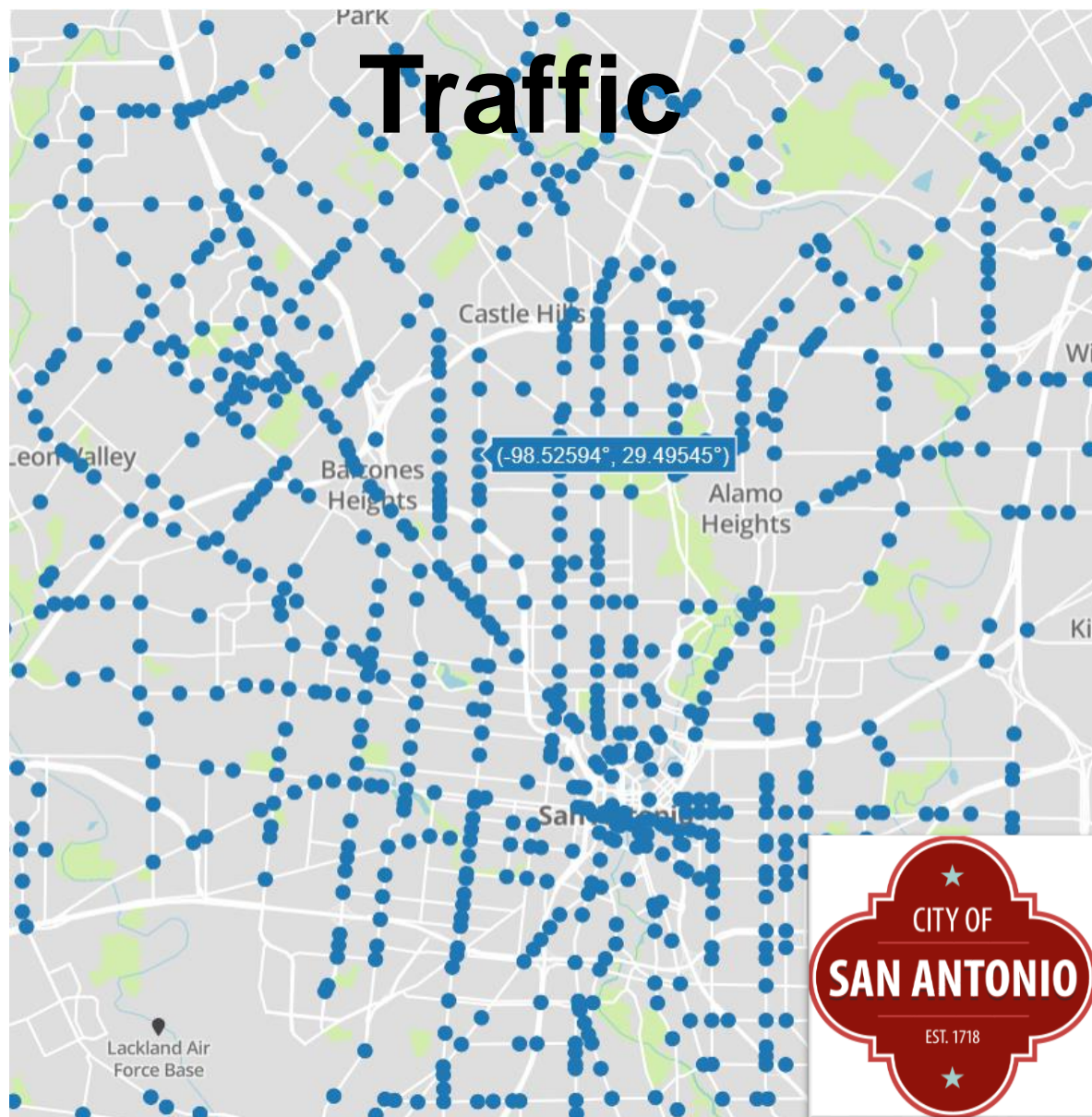




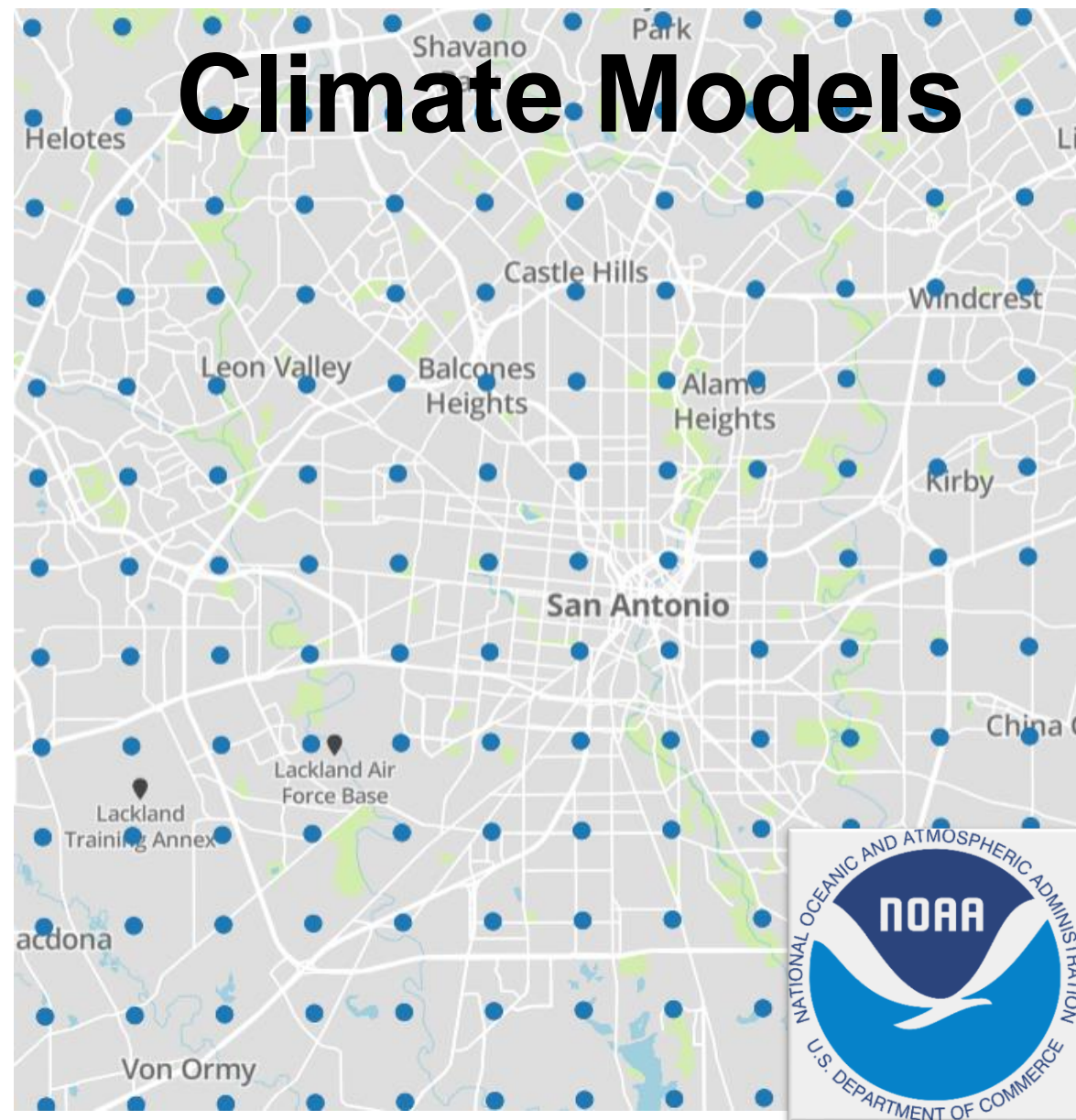
Energy Usage



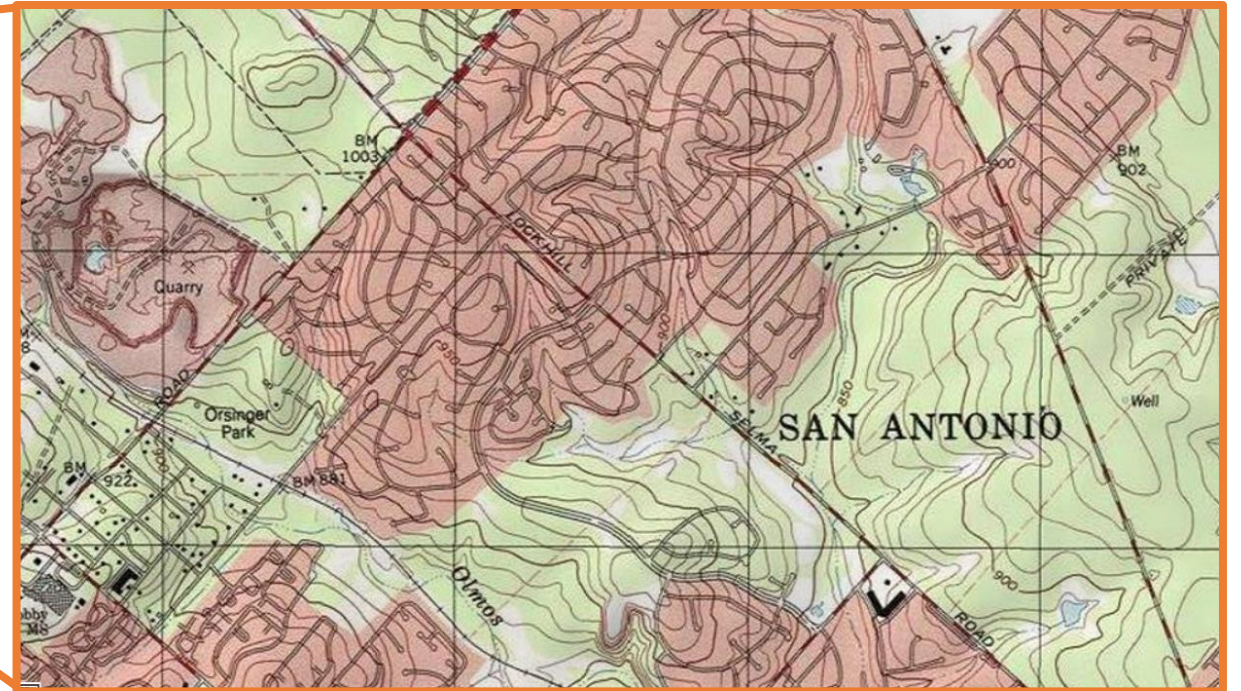
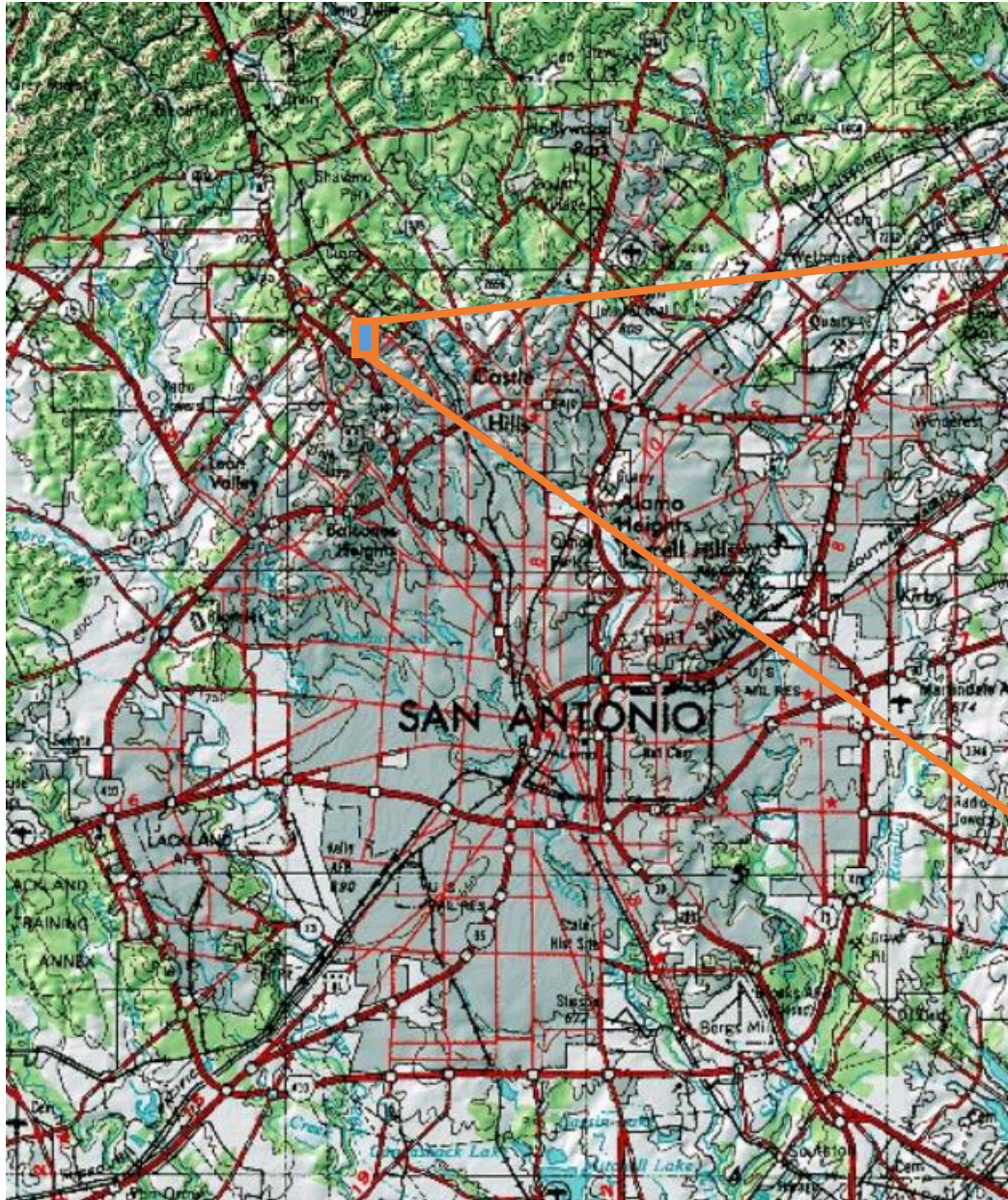
Traffic



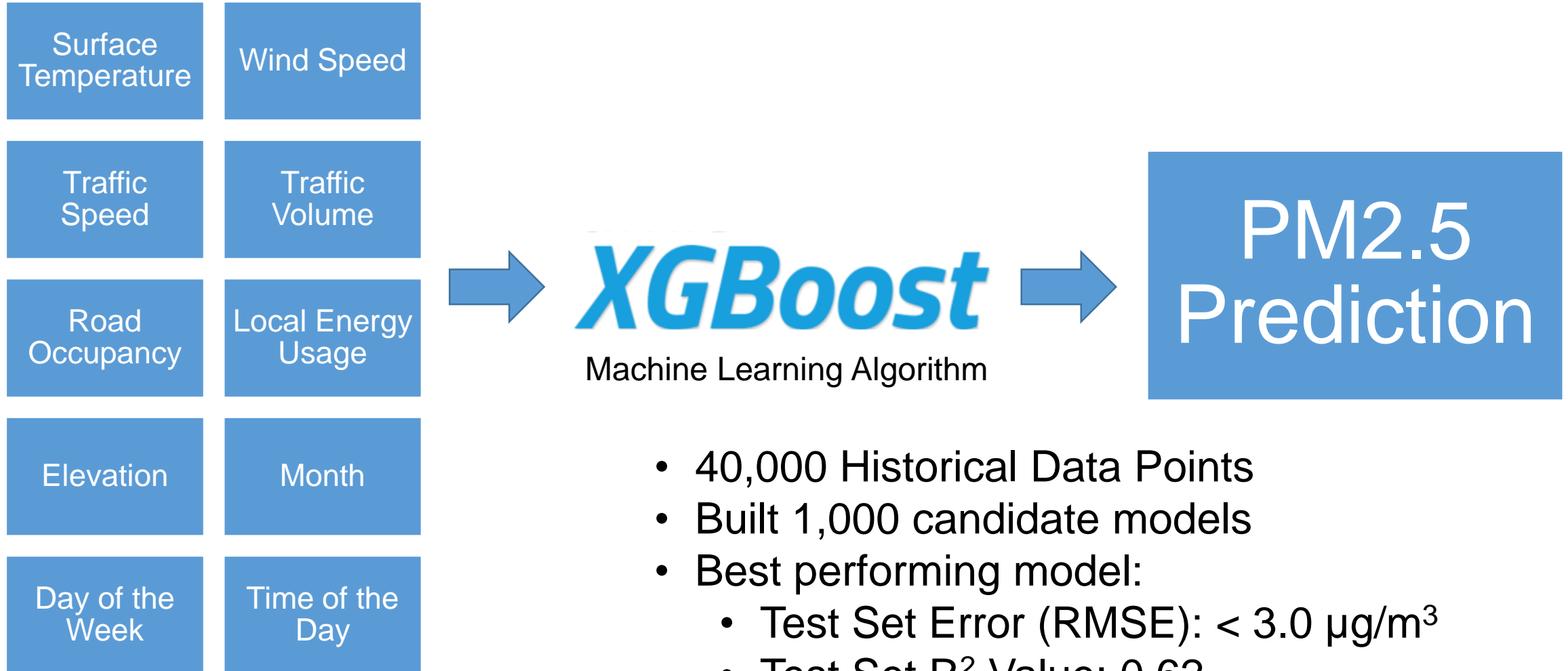
Climate Models



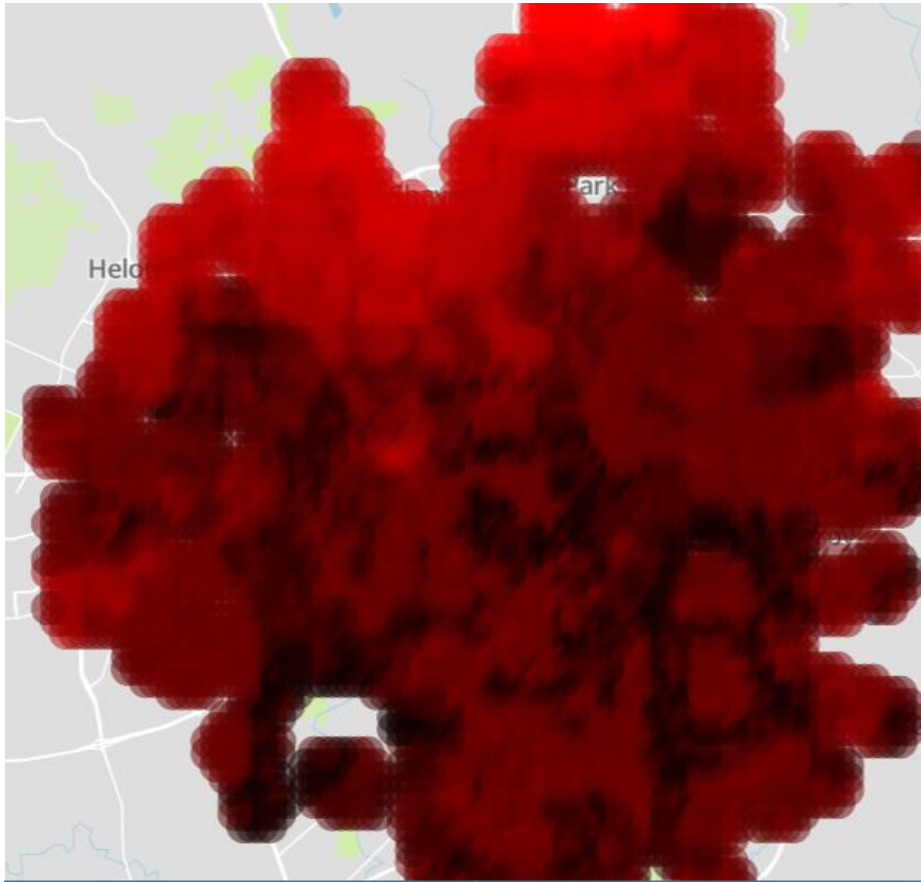
Topographical Data



Predictive Modeling

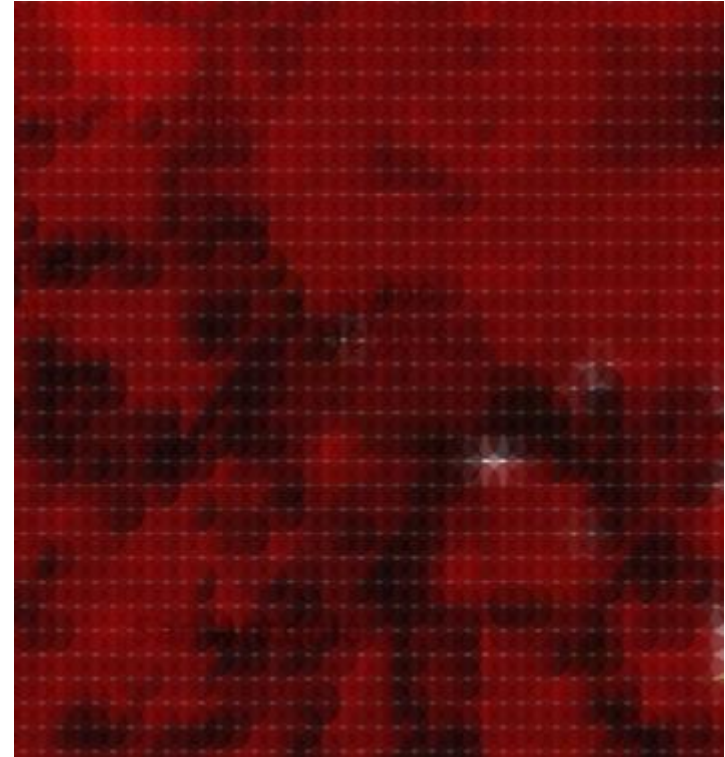


One of the Highest Resolution Depictions of Air Quality in SA Ever Created:



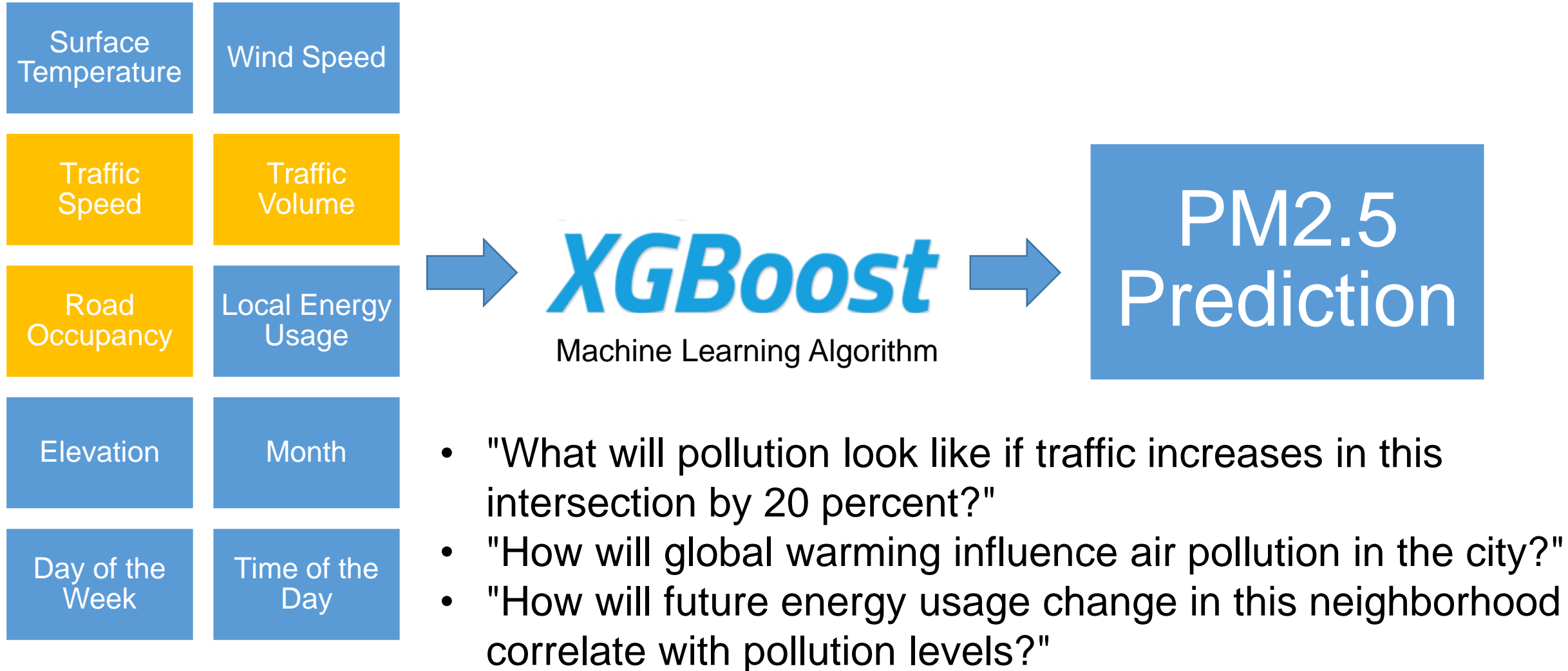
PM2.5 = 20 $\mu\text{g}/\text{m}^3$

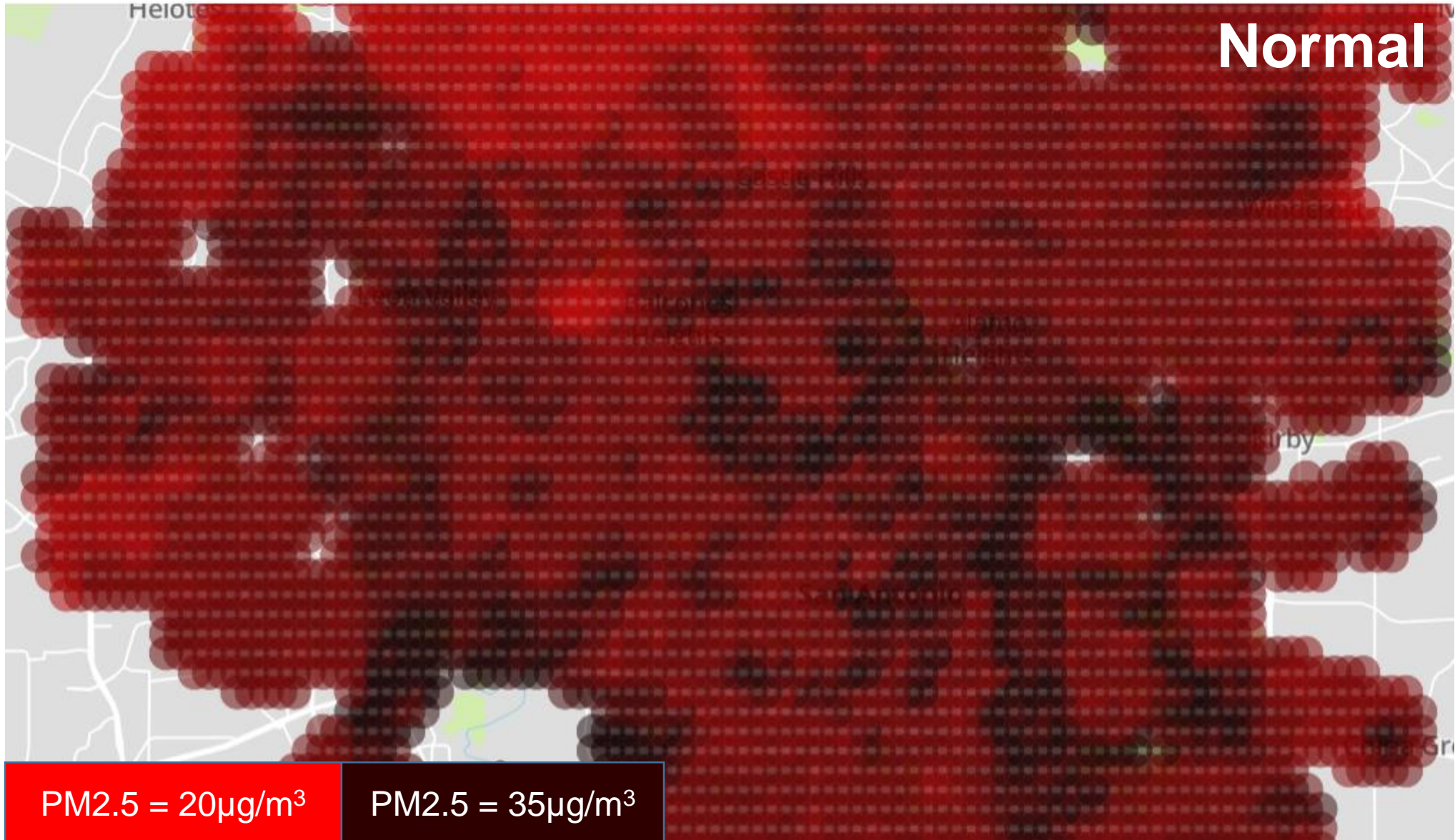
PM2.5 = 35 $\mu\text{g}/\text{m}^3$



What pollution looks like on a relatively bad day in SA

Prediction of Future Air Quality in SA





20% More Congestion

PM2.5 = 20 $\mu\text{g}/\text{m}^3$

PM2.5 = 35 $\mu\text{g}/\text{m}^3$

Air Quality Improvement Starts With Better Insight

Empower City Leadership

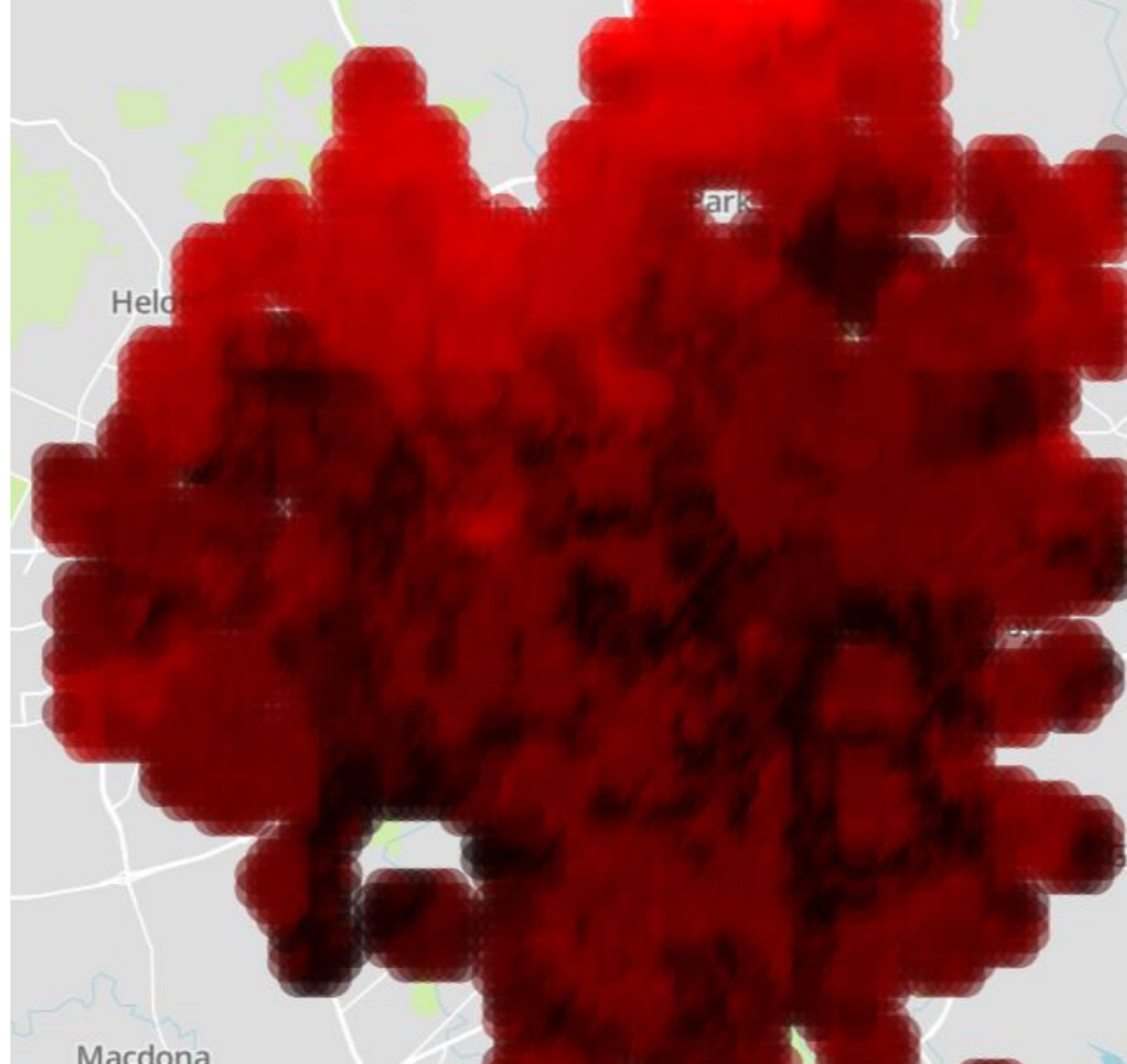
- Short term – Weather Forecast
 - Telecommuting
 - Incentivizing Alternative Travel Plans
 - Carpooling
 - Bus Traffic
- Long Term – 5 Year Predictions
 - Planning Future Green Space
 - Infrastructure Development
 - Zoning

Empower Individuals

- Plan activities based on local pollution
- Choose where to live
- More conscientious about health screening

Proof of Concept for Many More Applications

- Predict Ozone Levels
- Predict Water Quality



Try it out for yourself:

<http://fr4nk.us/air>