



# TEAM URBANX

## HACKACITY 6<sup>TH</sup> EDITION - PORTO 2023

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Sustainable Mobility



# INTRODUCTION

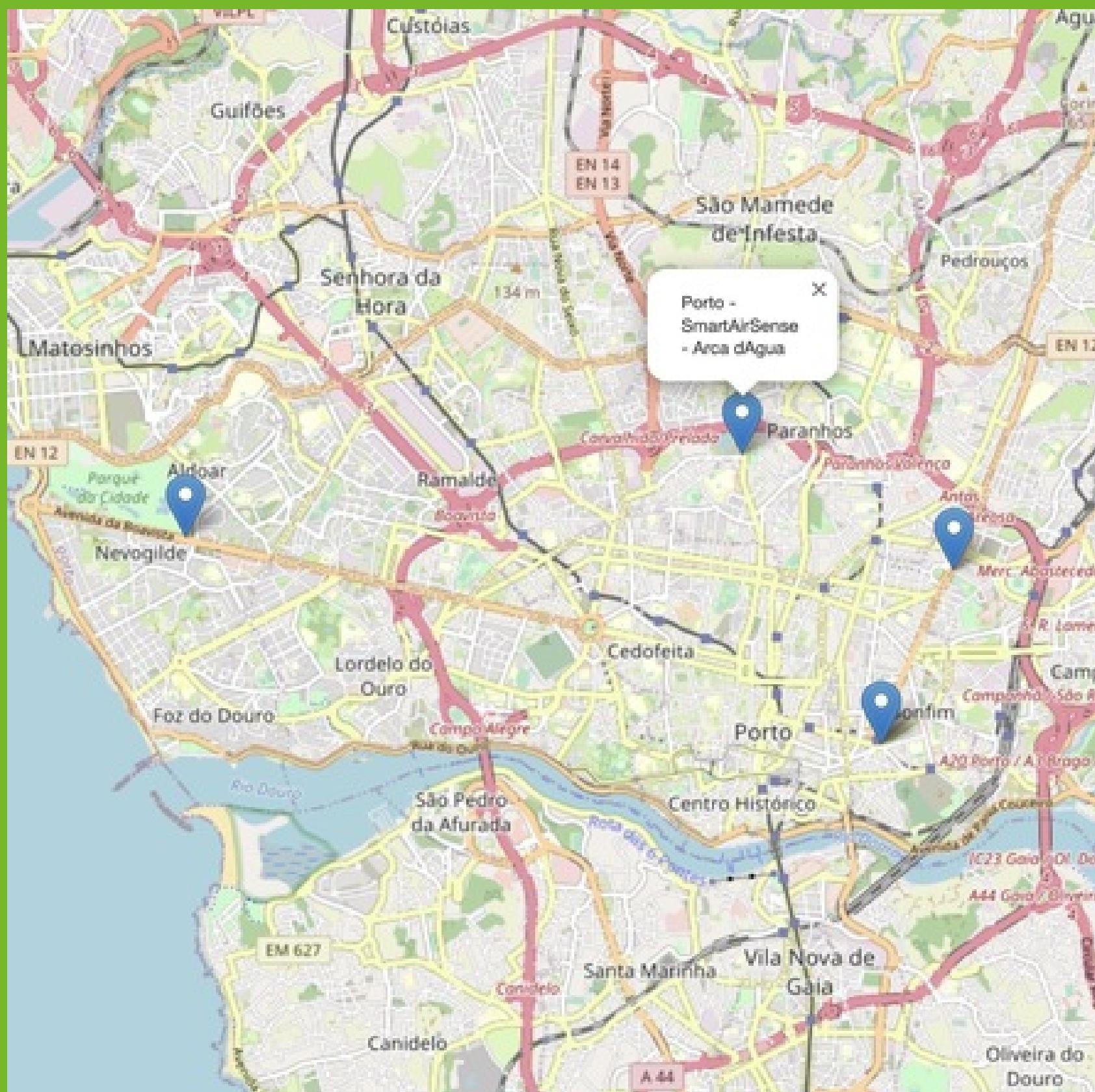
**Empowering municipalities with environmental intelligence!**

Our platform unveils the CO<sub>2</sub> emissions impact caused by road constraints such as events, accidents, or construction.

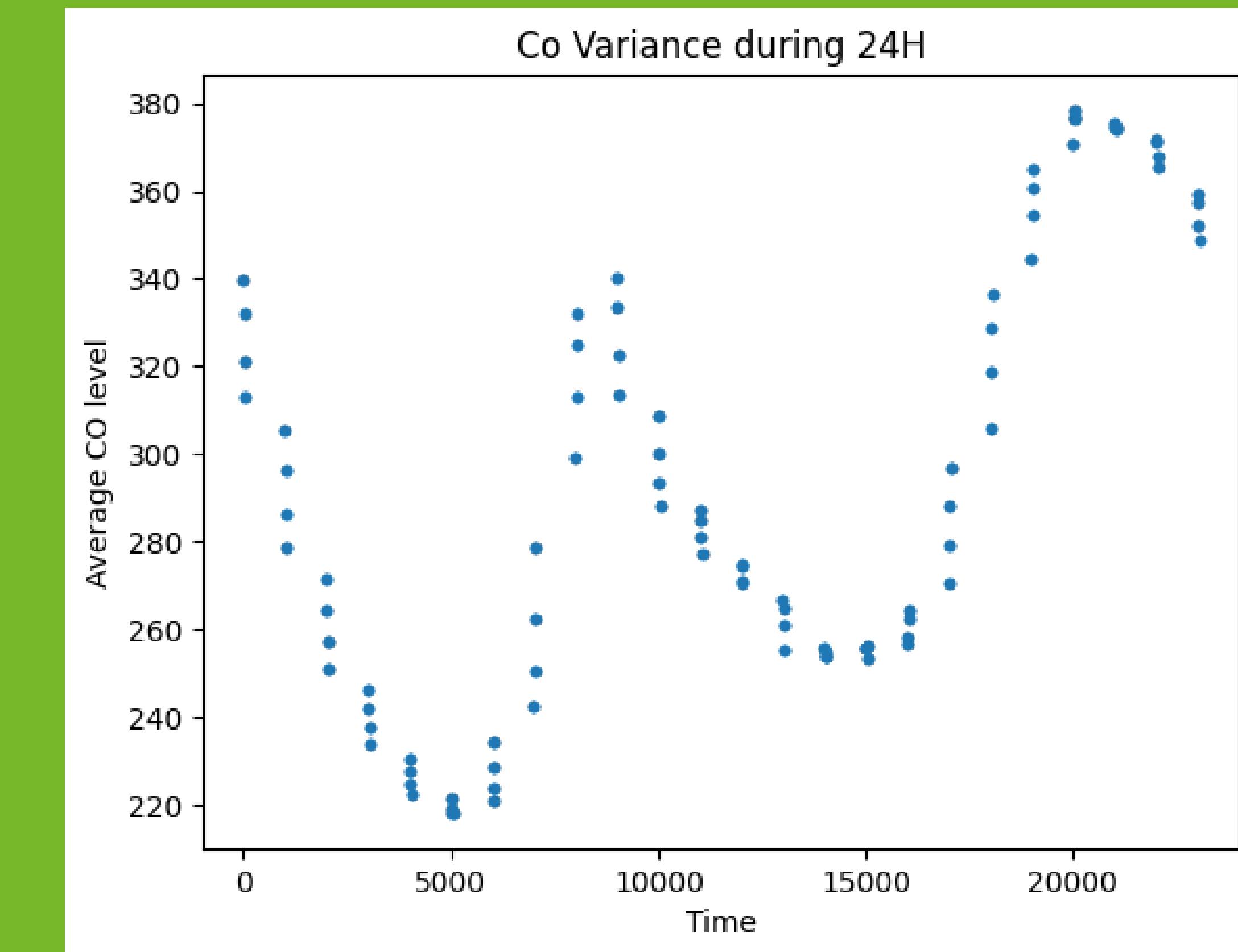
By providing real-time data, we enable cities to make smart decisions in resource allocation, strategically addressing issues and optimizing infrastructure projects for a greener future.

# MODELING

## Air Quality Sensors Location

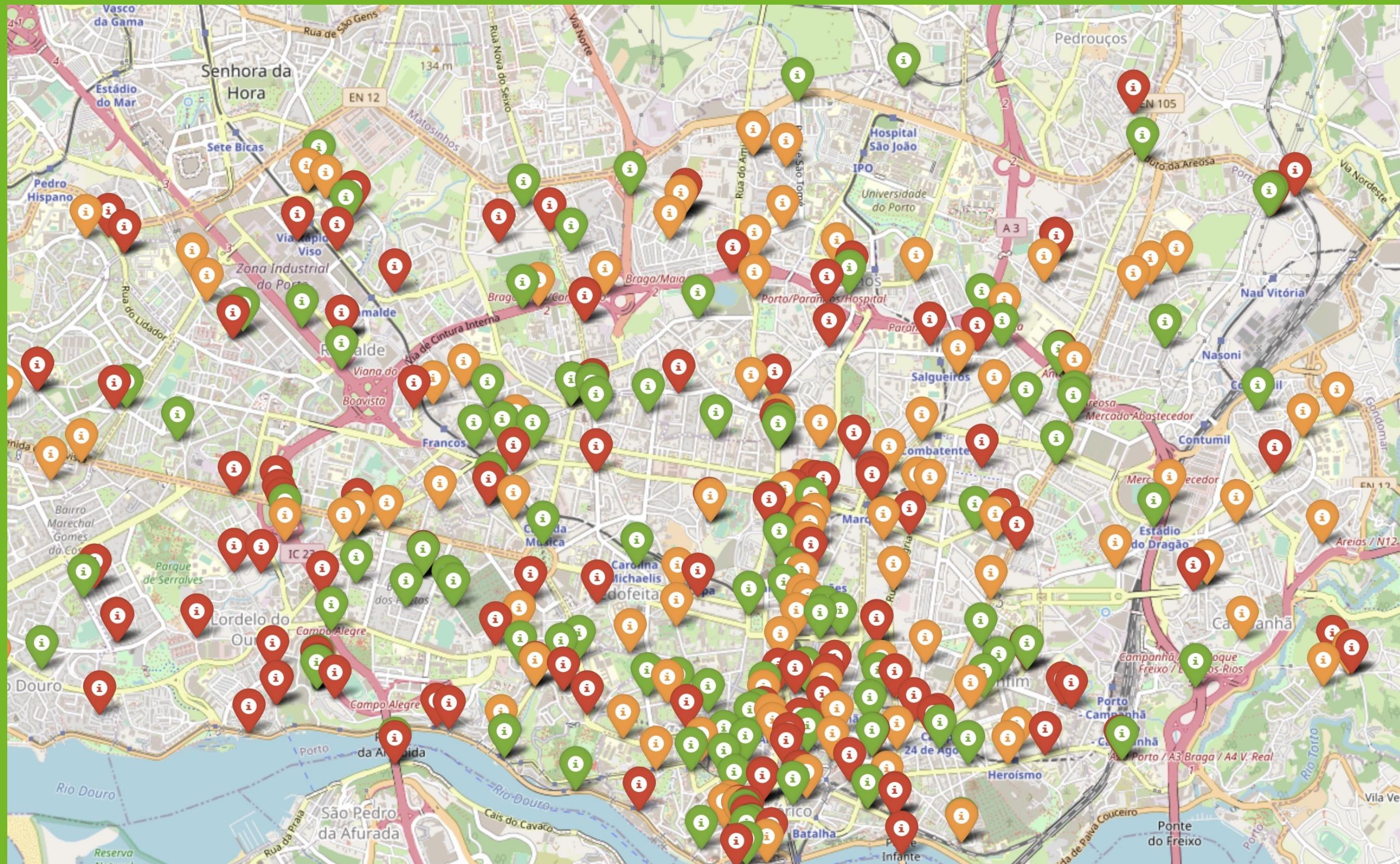


## CO variance during 24H

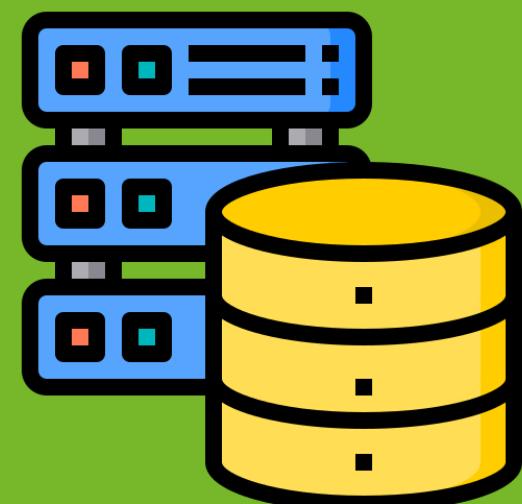


# MODELING

## Impact Waves Graph



# SOLUTION IMPLEMENTATION



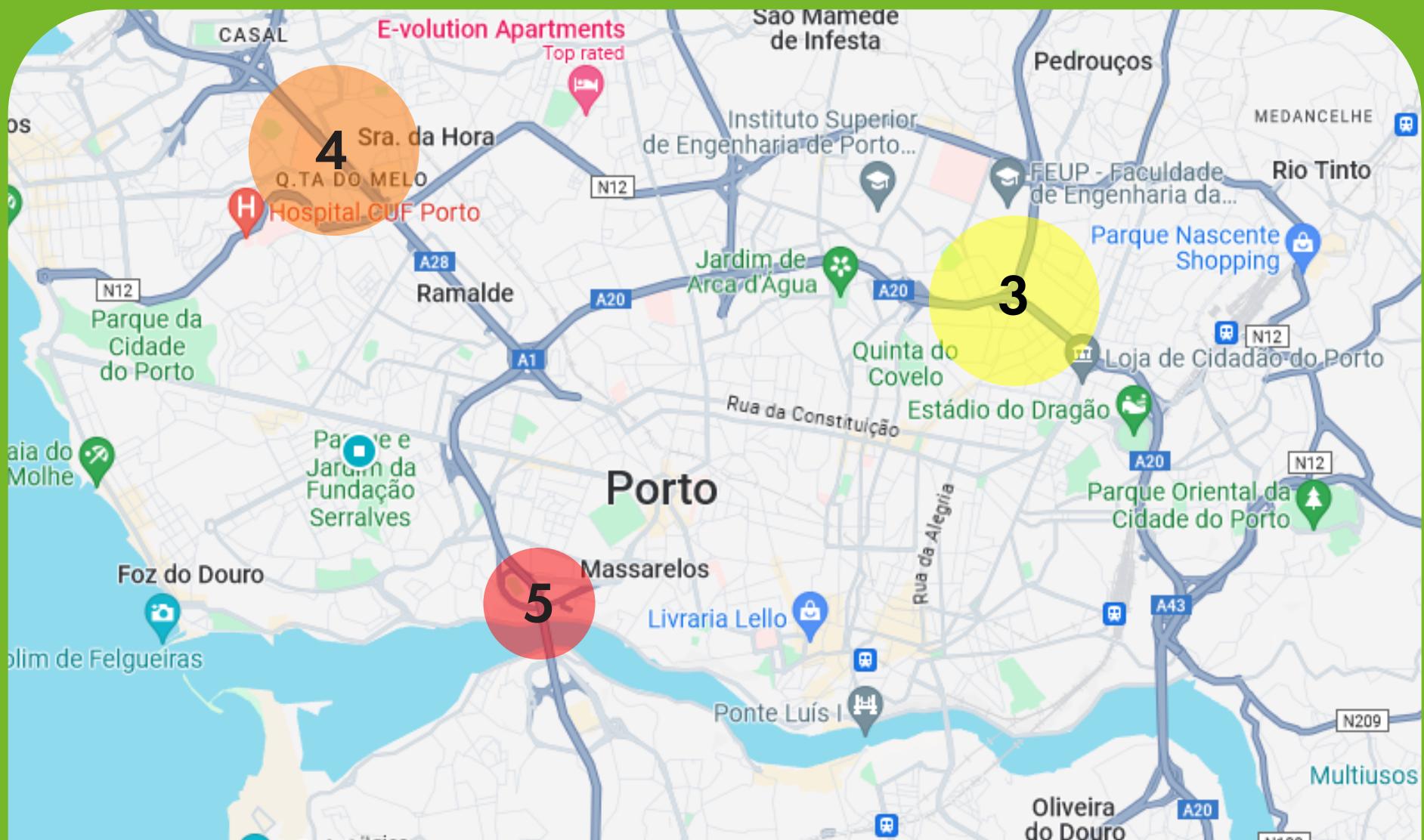
Database or direct connection with an API that will include or request the air quality dataset and road constraints dataset in real time and do a correlation between them.

Create a dashboard in python indicating each request (road constraint) and give a indice level 0-5 (0 no impact - 5 extreme impact).



The city wall would have access to the dashboard, analyze those requests, and manage accordingly and effectively based on that index level. Those records will be useful to better plan future road interchanges in strategic areas.

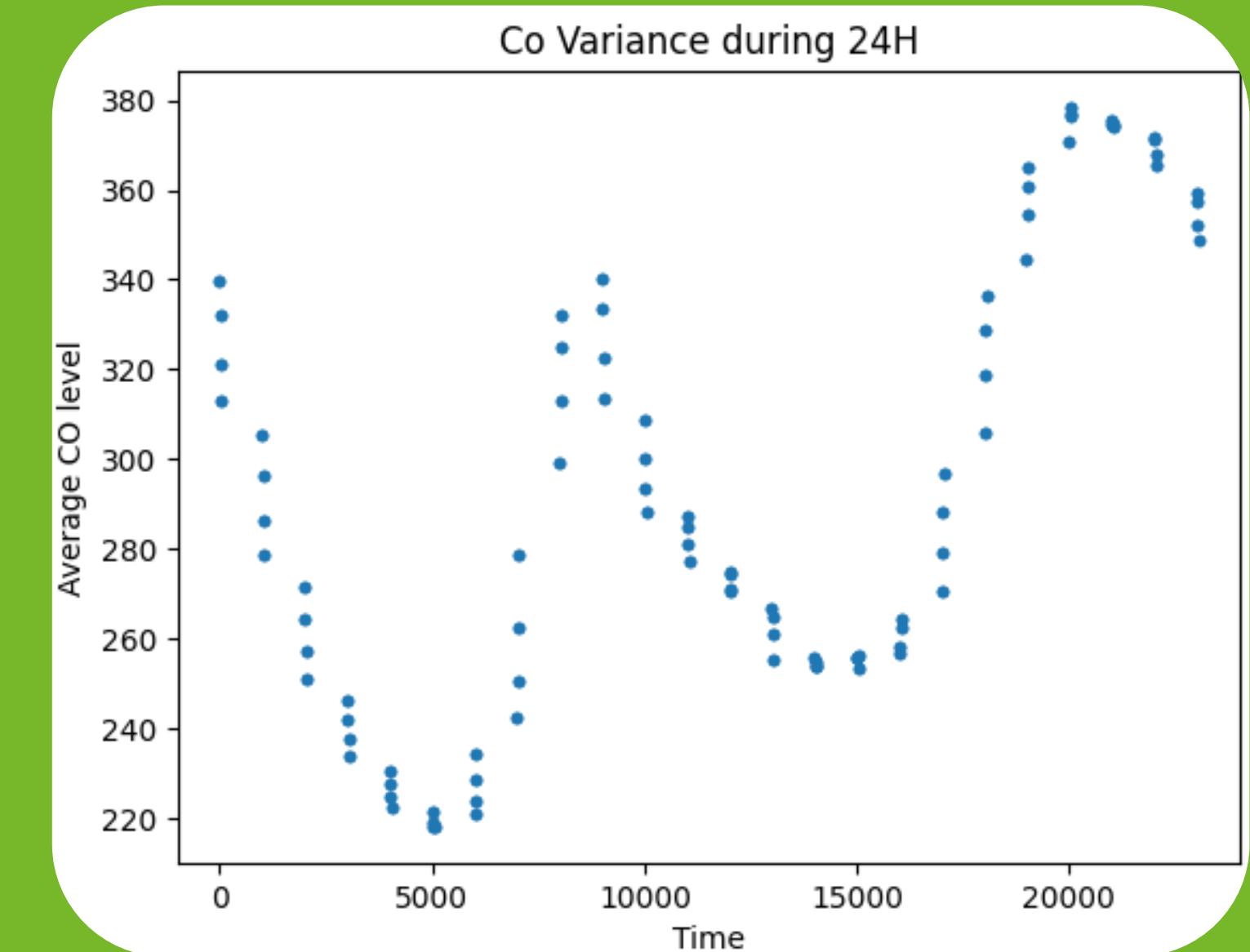
# HOW WILL THE STAKEHOLDERS USE THE MODEL?



## Impact Index Section

Impact Levels (0–5), in accordance with the increase in carbon emissions and location.

## Air Quality Overview



## Recommendations and Actions

Suggestions based on correlation & importance

# INNOVATION

## Real-time Data Integration

This integration could provide valuable insights into how air quality might correlate with road conditions.

## Dynamic Decision-Making Dashboard

Giving more power to the city to manage their resources and act in a more efficiently way.

# DATA QUALITY

**What can be done to improve the data provided by the city?**

- Noise sensors in the wrong location (near a subway for example).

**Solution:** Change location not near places with noise problems.

- Sensors reading second to second when its not needed.

**Solution:** Read less times.

- The lack of air quality sensors hinders the establishment of a specific metric for the environmental impact of a road constraint in a particular area of the city.

**Solution:** Implement more sensors across the city.