

Analysis of Viennese Traffic Counts

FINAL PRESENTATION

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AGENDA

- Traffic Heatmap Analysis
- Covid19 Analysis
- Cluster
- Public Transportation ~ Traffic Count
- Traffic Trends - City Centre vs. Suburbs
- Forecasting
- Visualization Dashboard

GOALS OF THIS PROJECT

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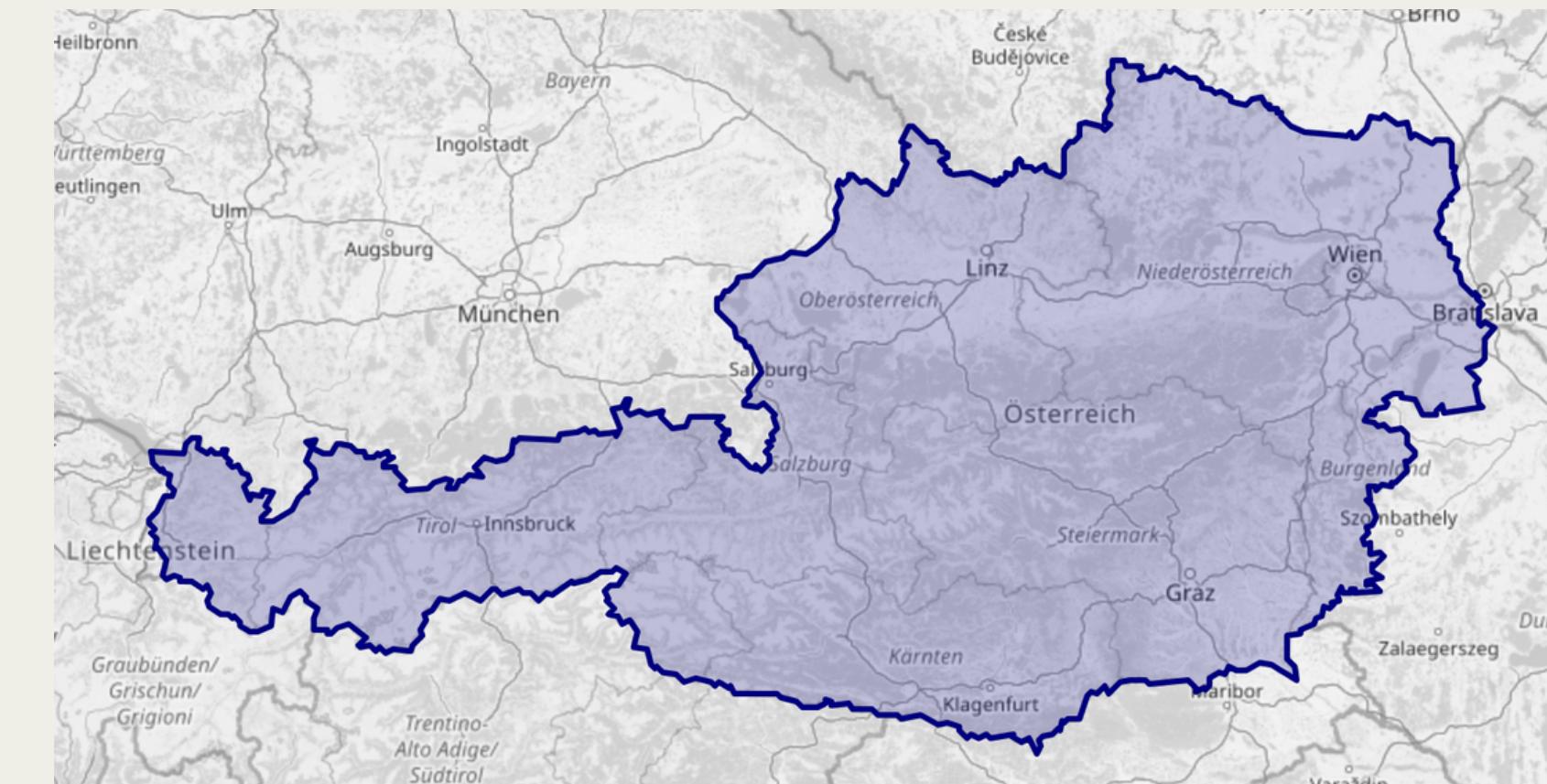
- Traffic Heatmap Analysis
- Cluster Analysis
- Forecasts
- Dashboard

DATASETS

- Permanent counting points
- Public transportation infrastructure
- Population data
- Covid19 data

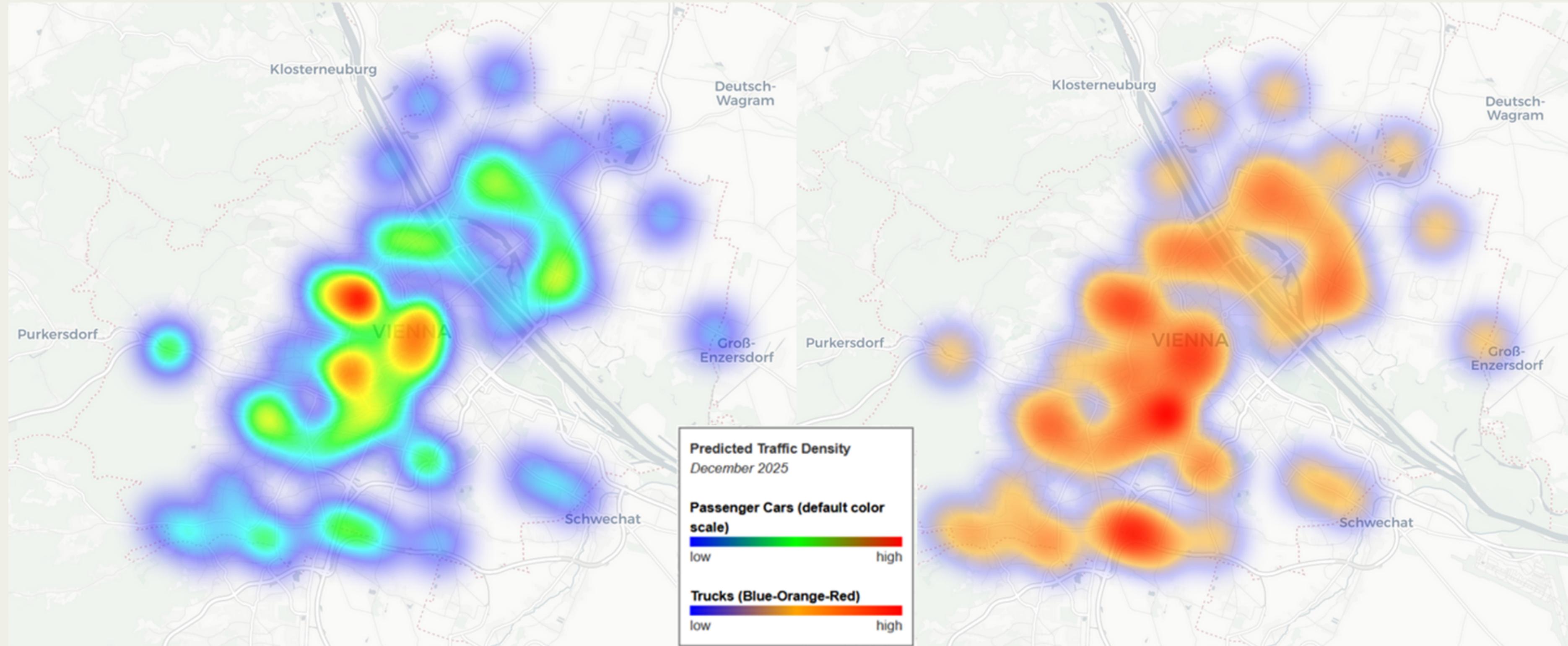
OPEN STREET MAP DATASET

- Extracted Vienna from the OSM Austria dataset
- Extracted the stop positions of the public transportation
- Combined the permanent count points with the public transportation within a radius of 1 km
- Extracted entities:
 - Subway
 - Tram
 - Train
 - Bus

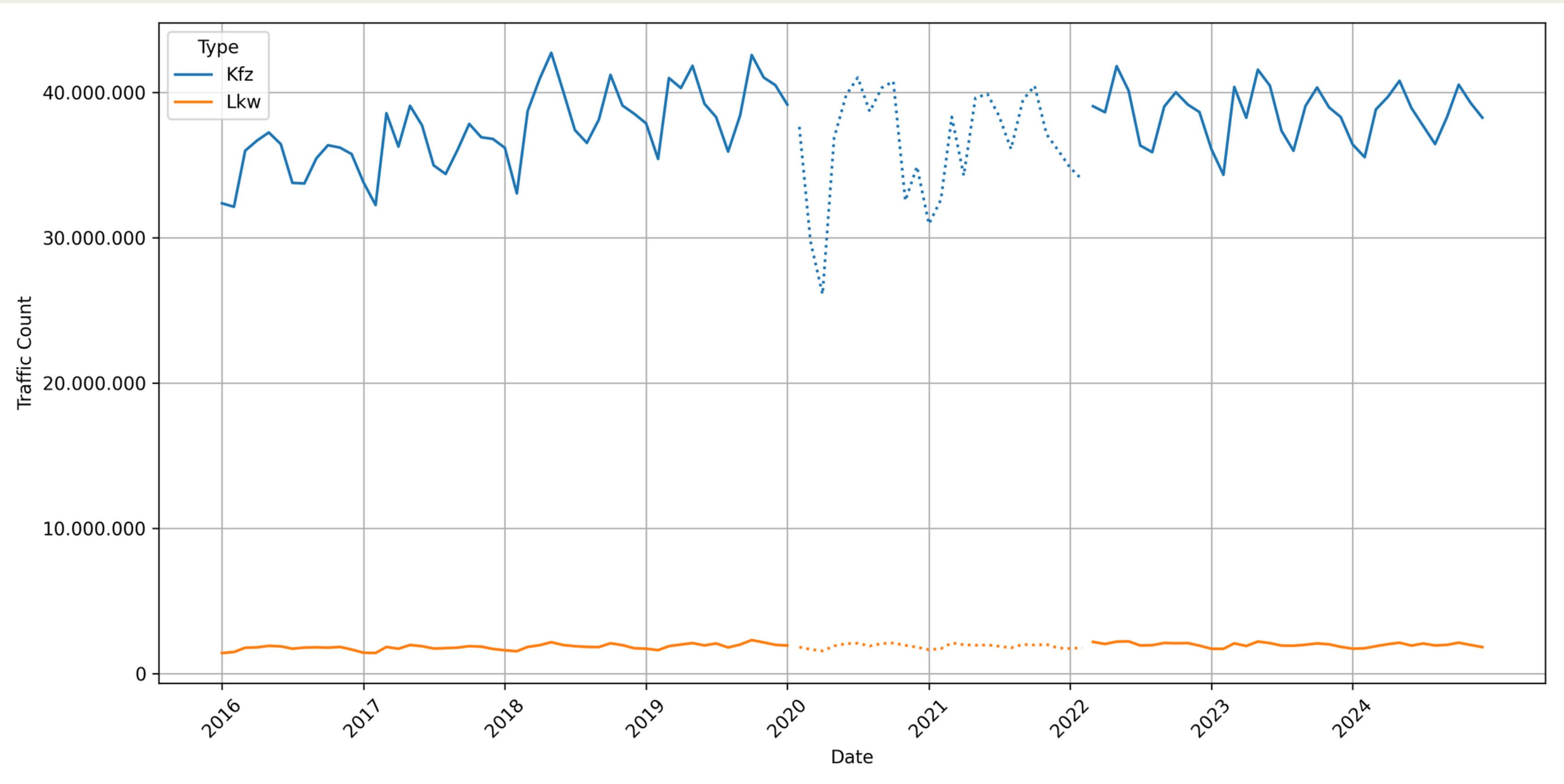


LINK: [HTTPS://OSM-
BOUNDARIES.COM/MAP](https://osm-boundaries.com/map)

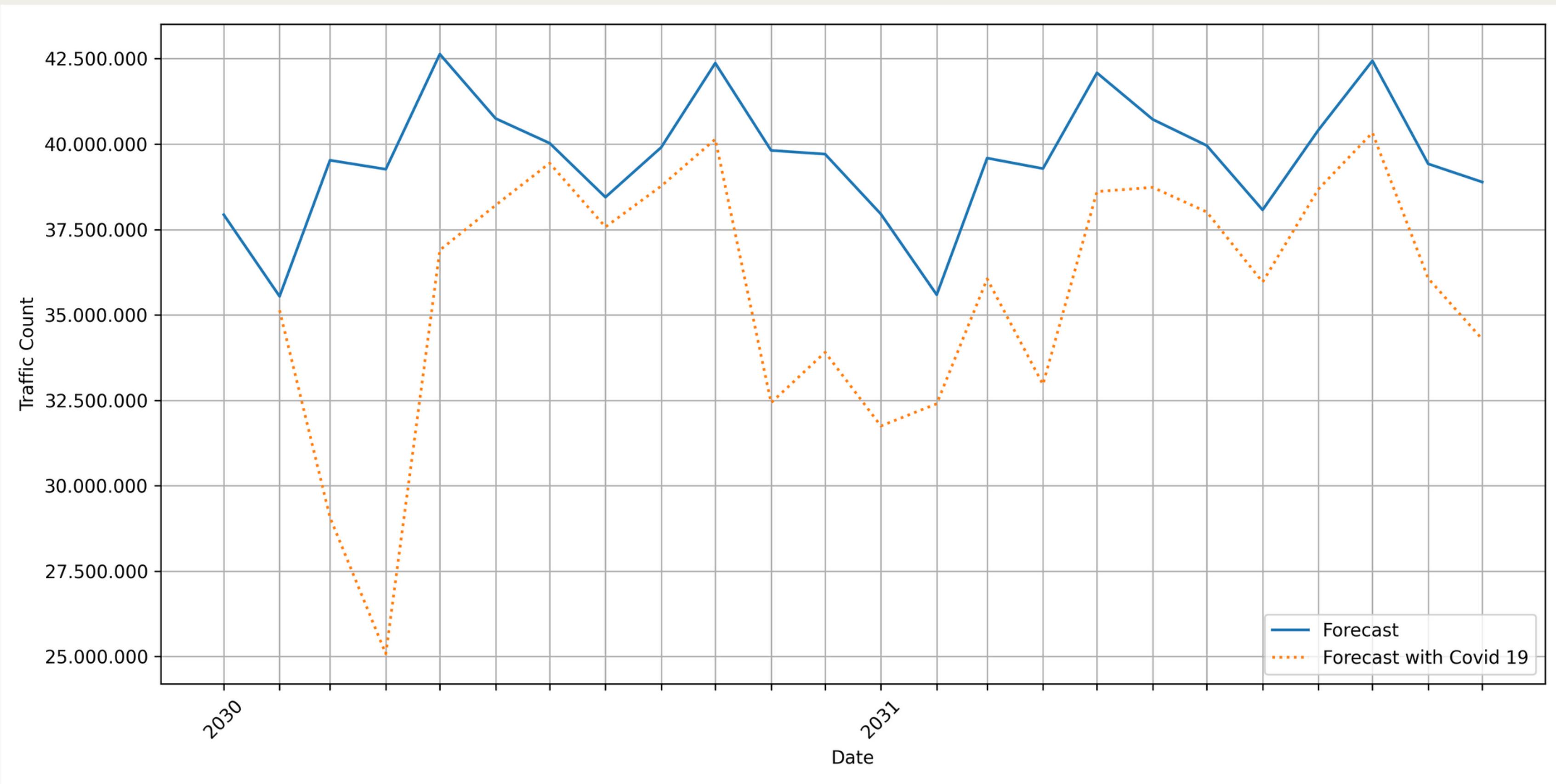
TRAFFIC HEATMAP ANALYSIS



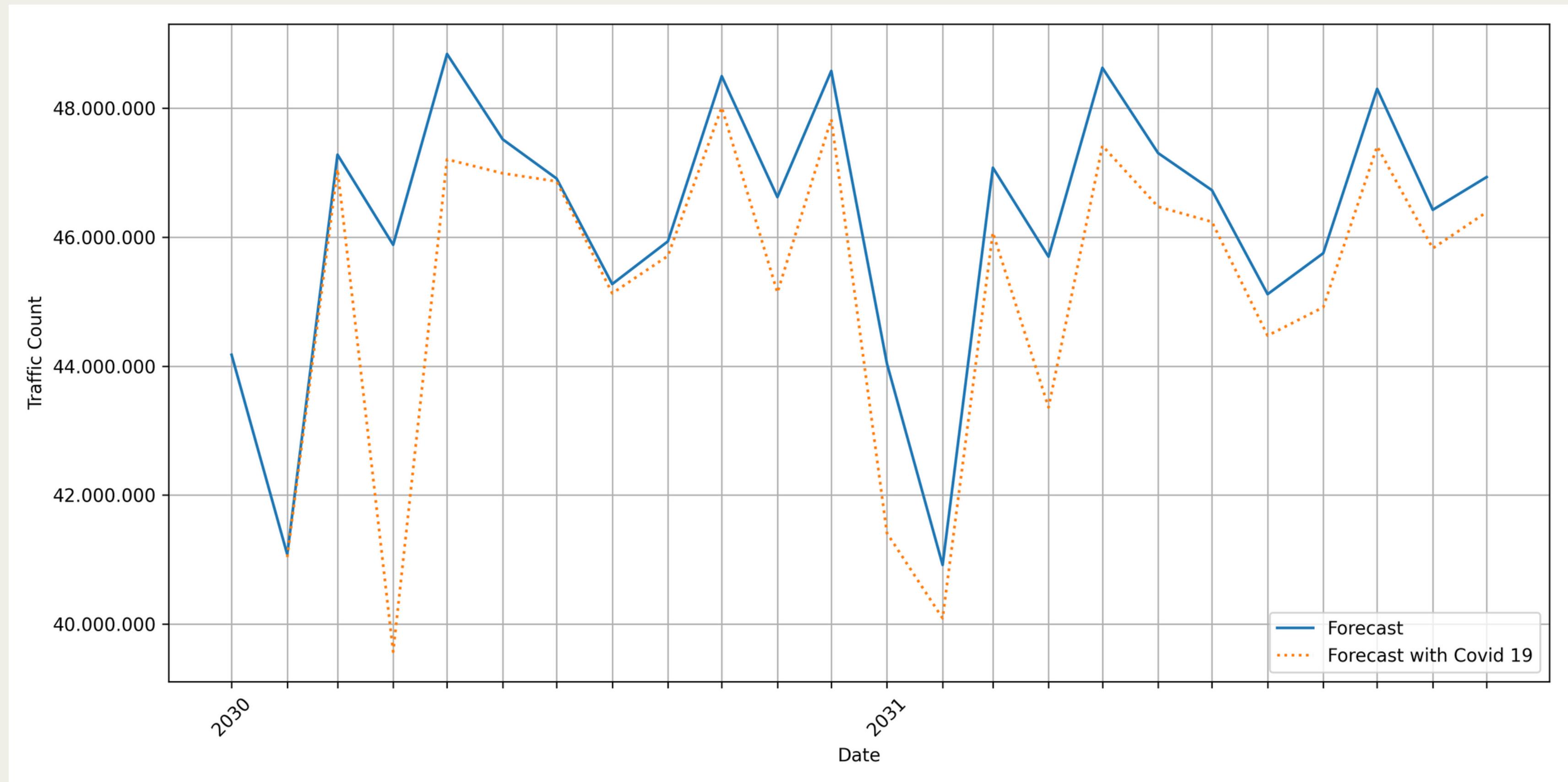
COVID19 HISTORIC ANALYSIS TVMAX



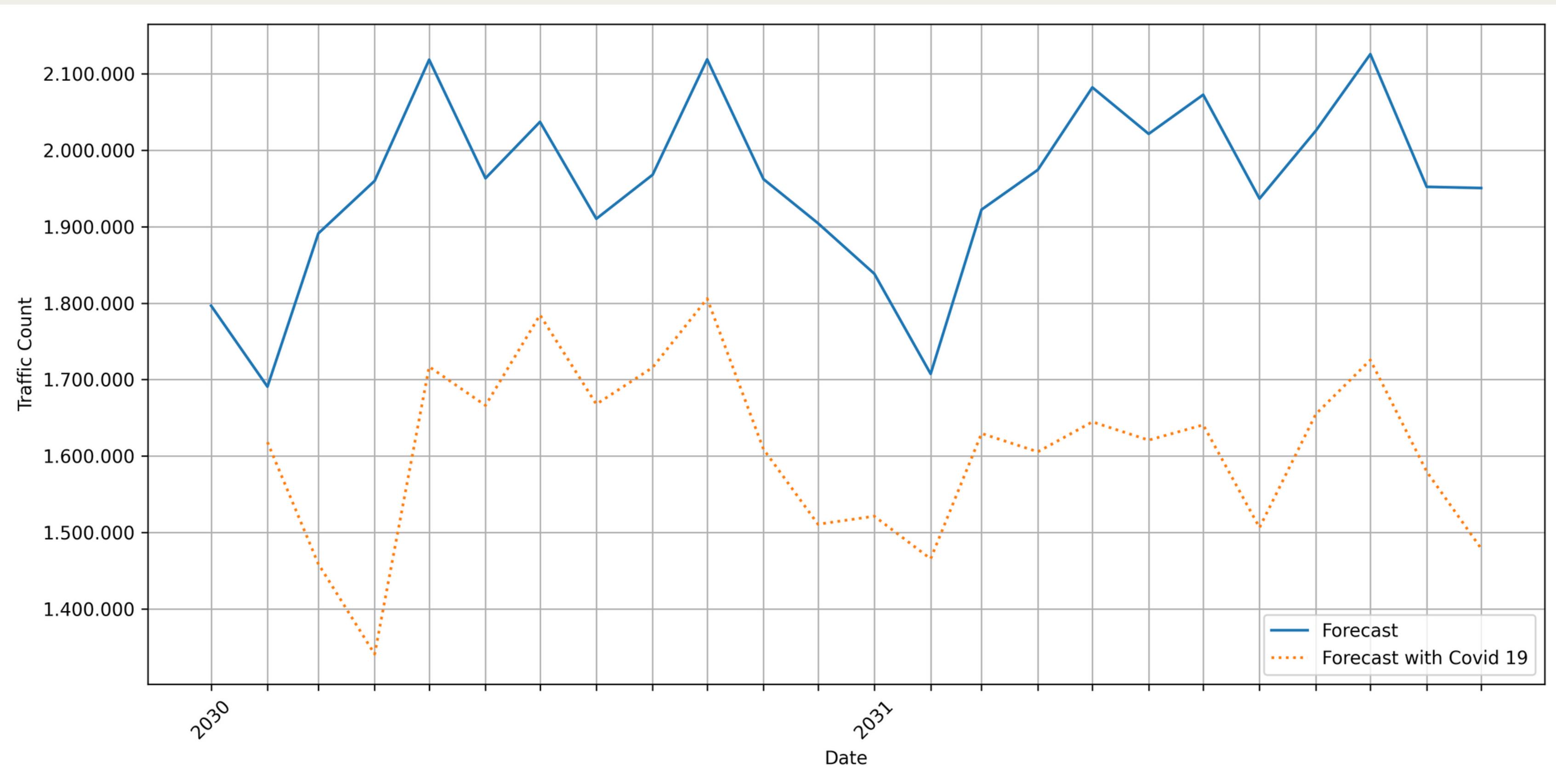
COVID19 FORECAST CARS 2030 - 2032 DTV



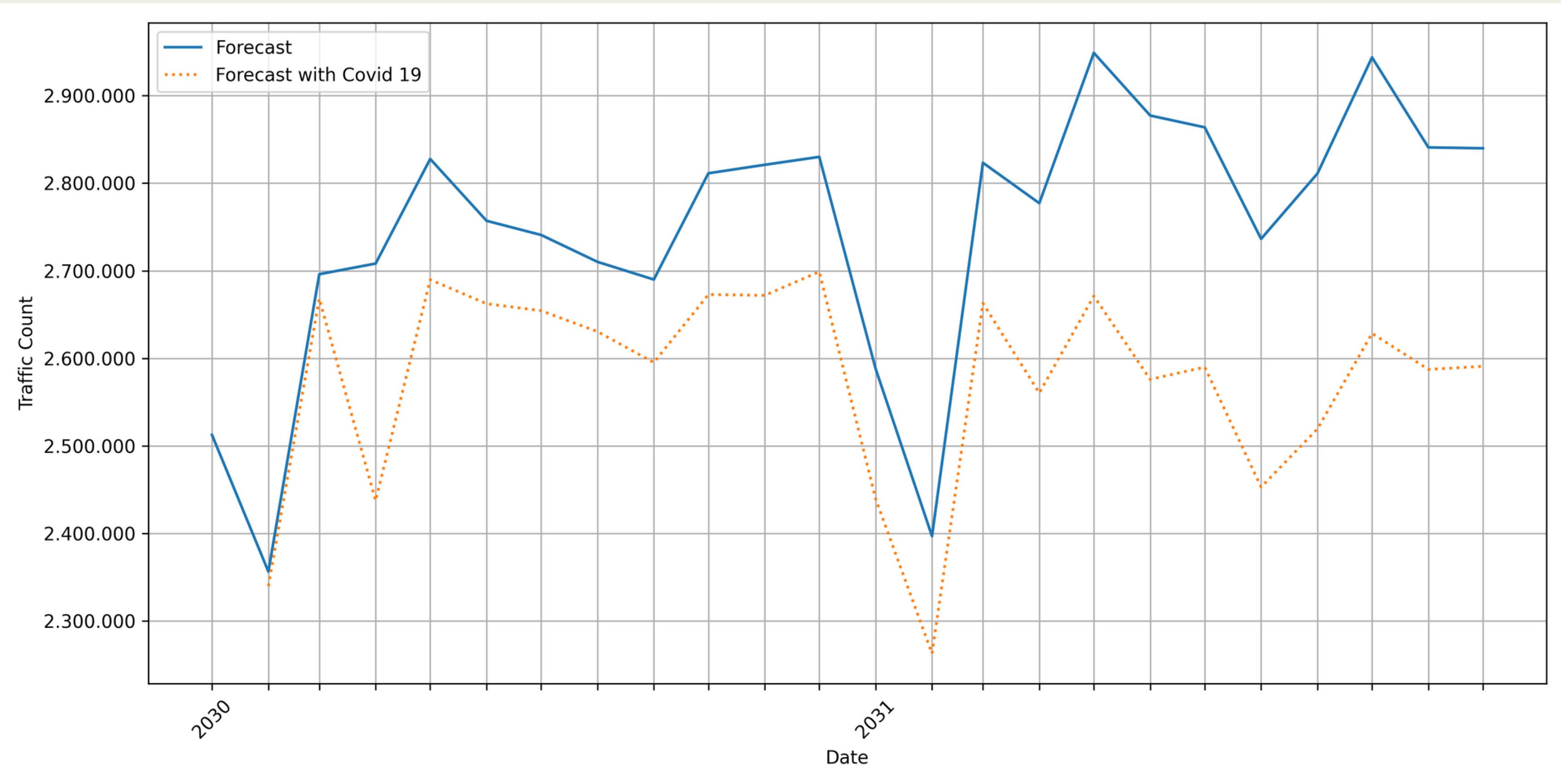
COVID19 FORECAST CARS 2030 - 2032 TVMAX



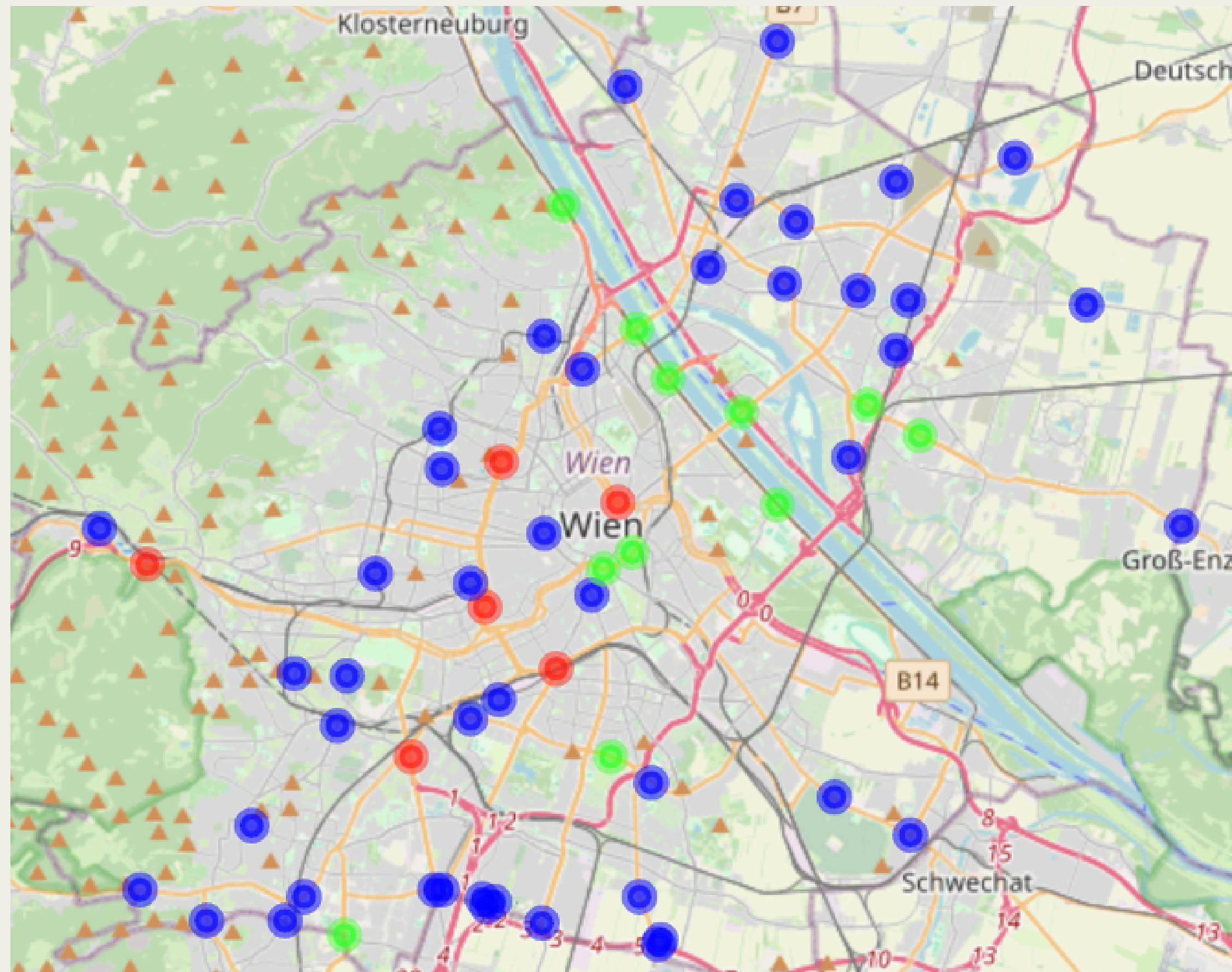
COVID19 FORECAST TRUCK 2030 - 2032 DTV



COVID19 FORECAST TRUCK 2030 - 2032 TVMAX



CLUSTER ANALYSIS CARS MON - SUN

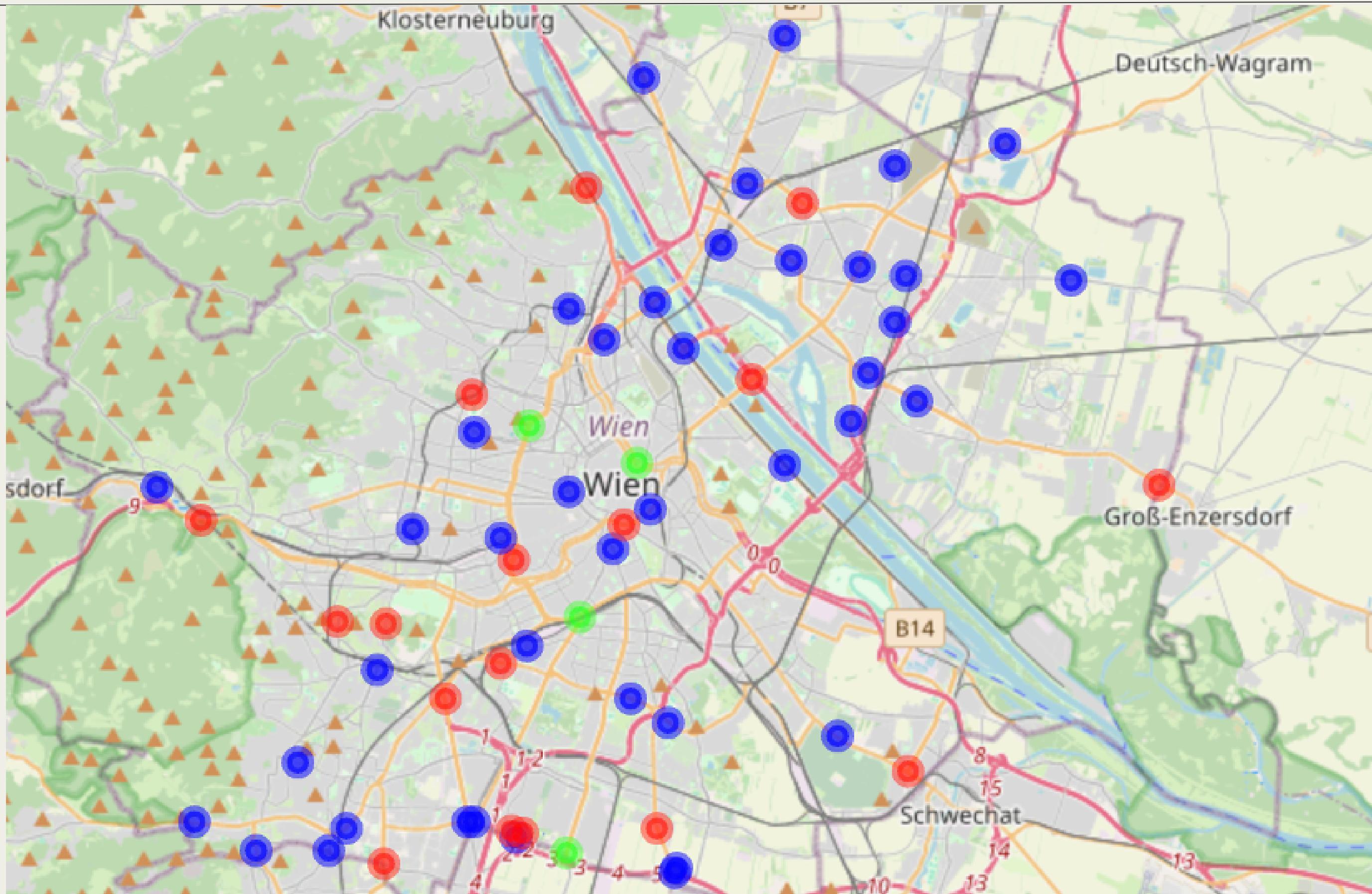


RED - HIGH

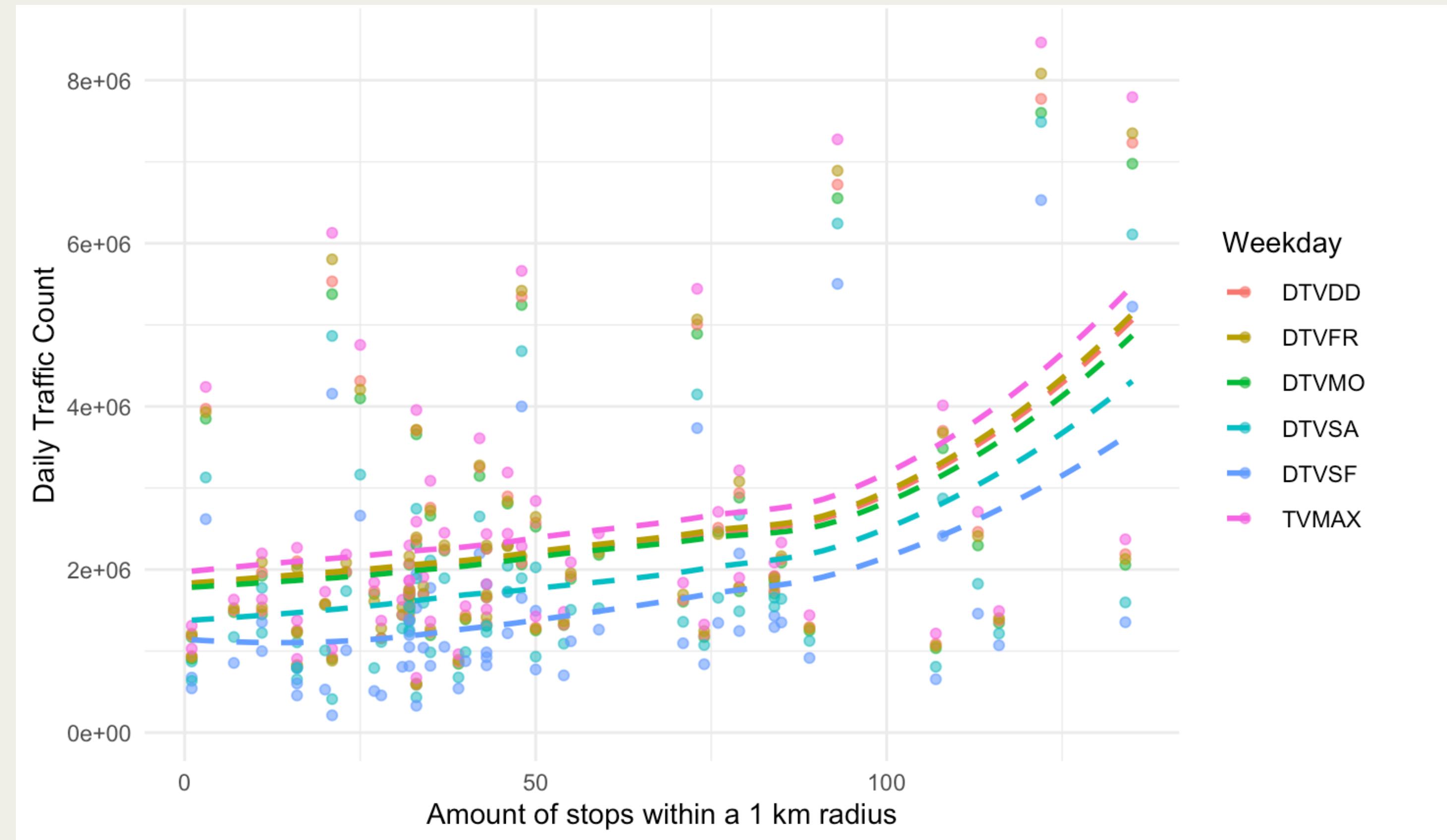
GREEN -
MEDIUM

BLUE - LOW

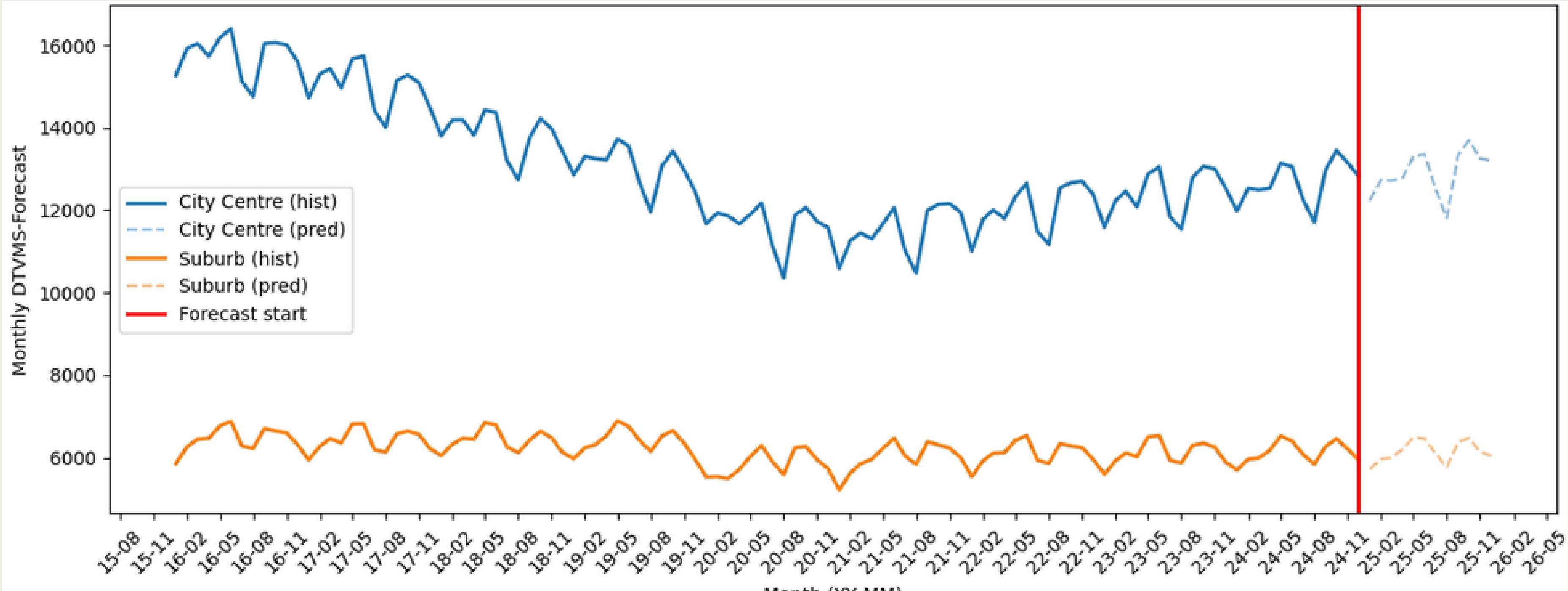
CLUSTER ANALYSIS TRUCKS MON - SUN



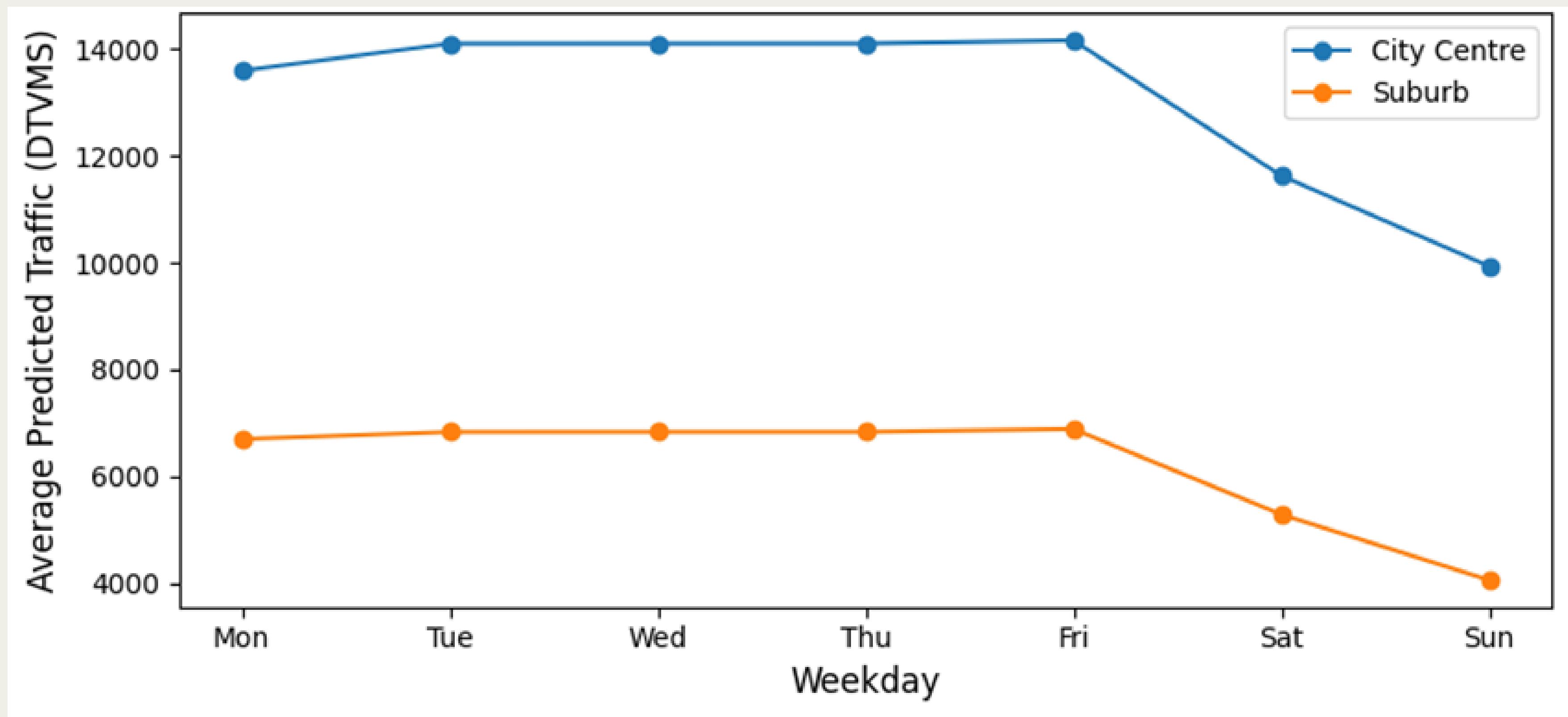
ANALYSIS PUBLIC TRANSPORTATION



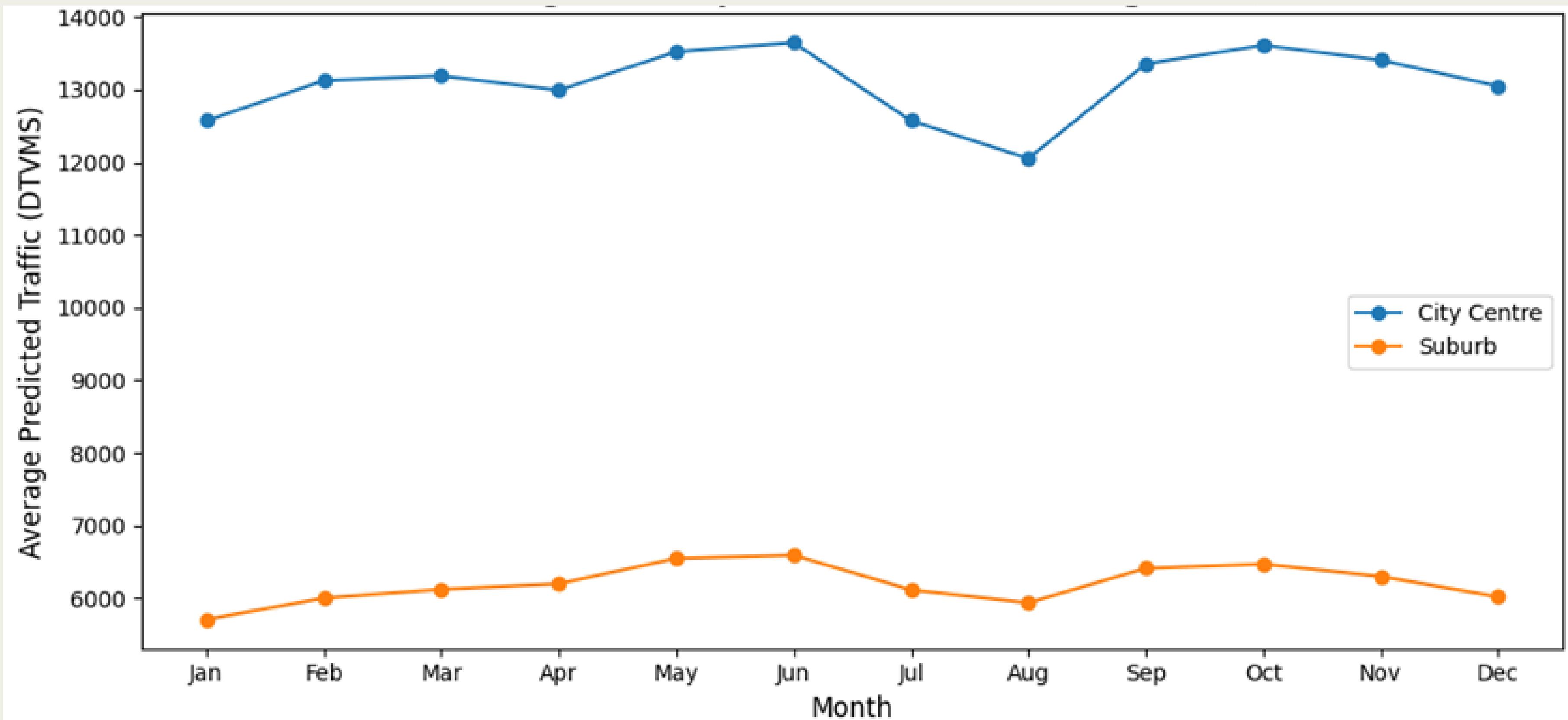
TRAFFIC-FORECASTS: CITY CENTRE VS SUBURBS



AVERAGE WEEKLY TREND



AVERAGE MONTHLY TRENDS



DATA FOR THE DASHBOARD

Traffic Counts

- Average daily car traffic volume from January 2016 to December 2024.

Exogenous Variables

- Commuter Rate
- Vehicles per 1000 inhabitants
- Population
- City-wide transportation mode split



Arima Forecasts
until December 2030

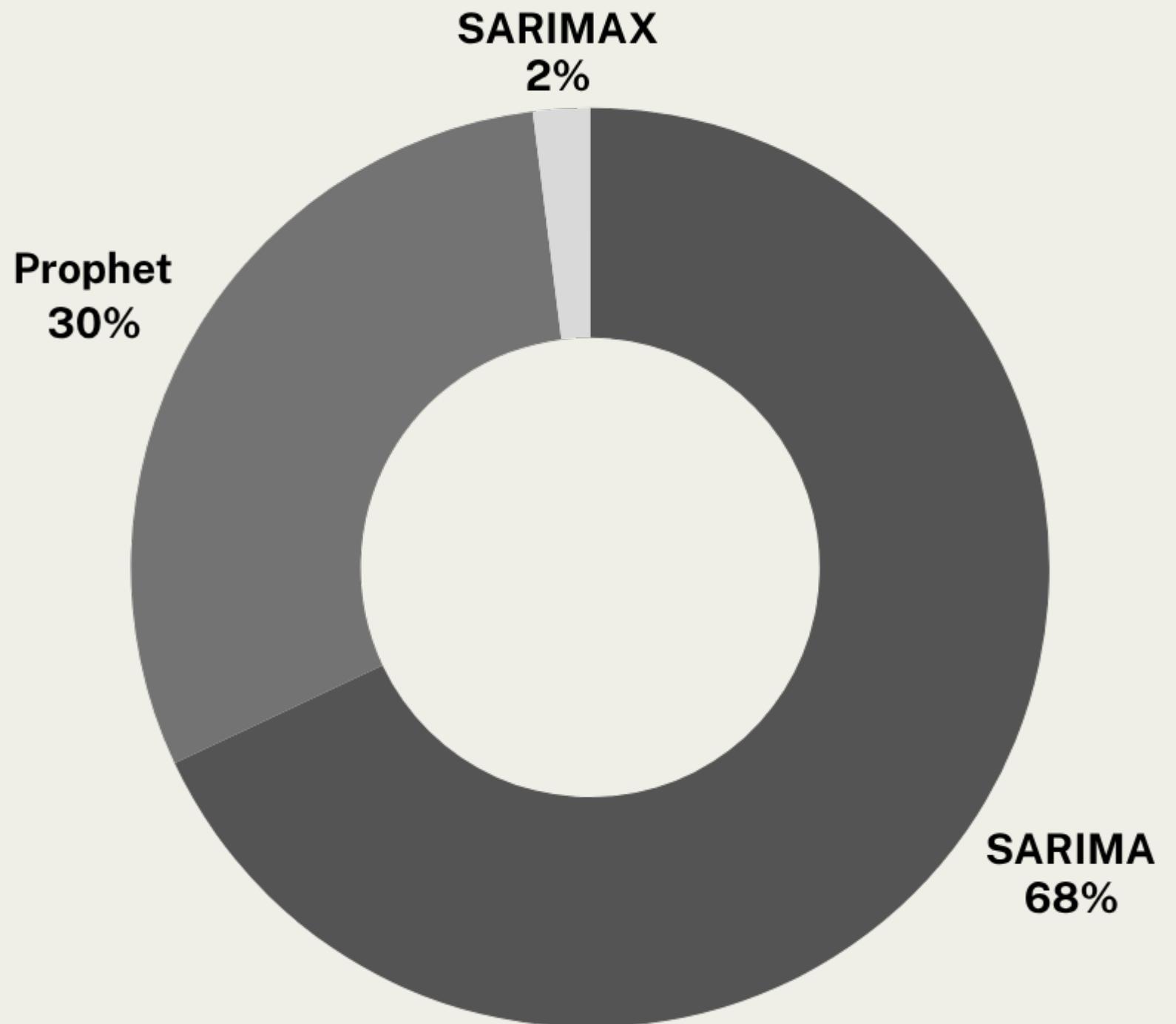
FORECASTS FOR THE DASHBOARD

Multi Model Strategy

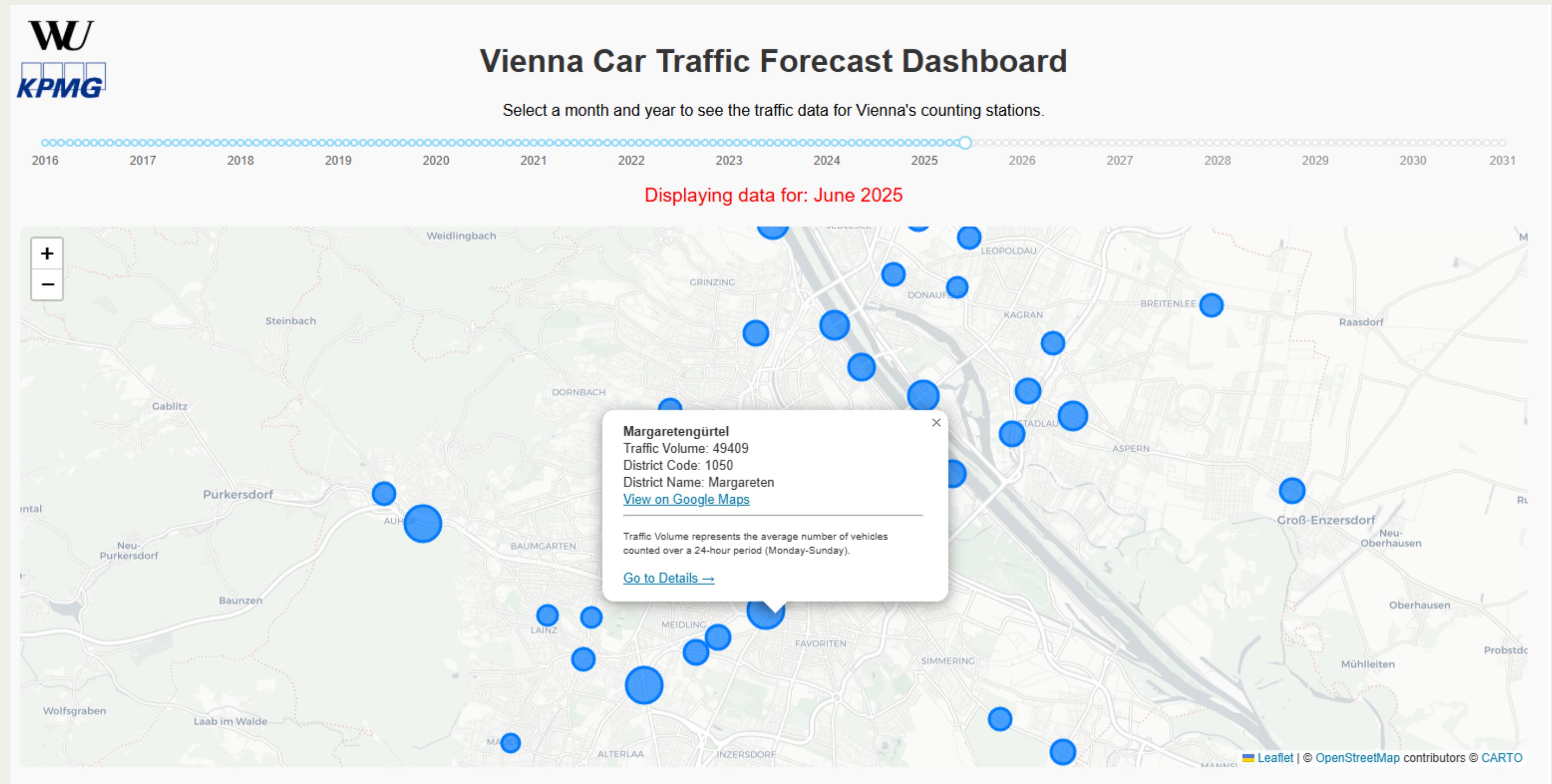
- Prophet: Facebook's Time Series Model
- SARIMA: Classic Time Series Model
- SARIMAX: Addition of External Variables

Accuracy & Weighting

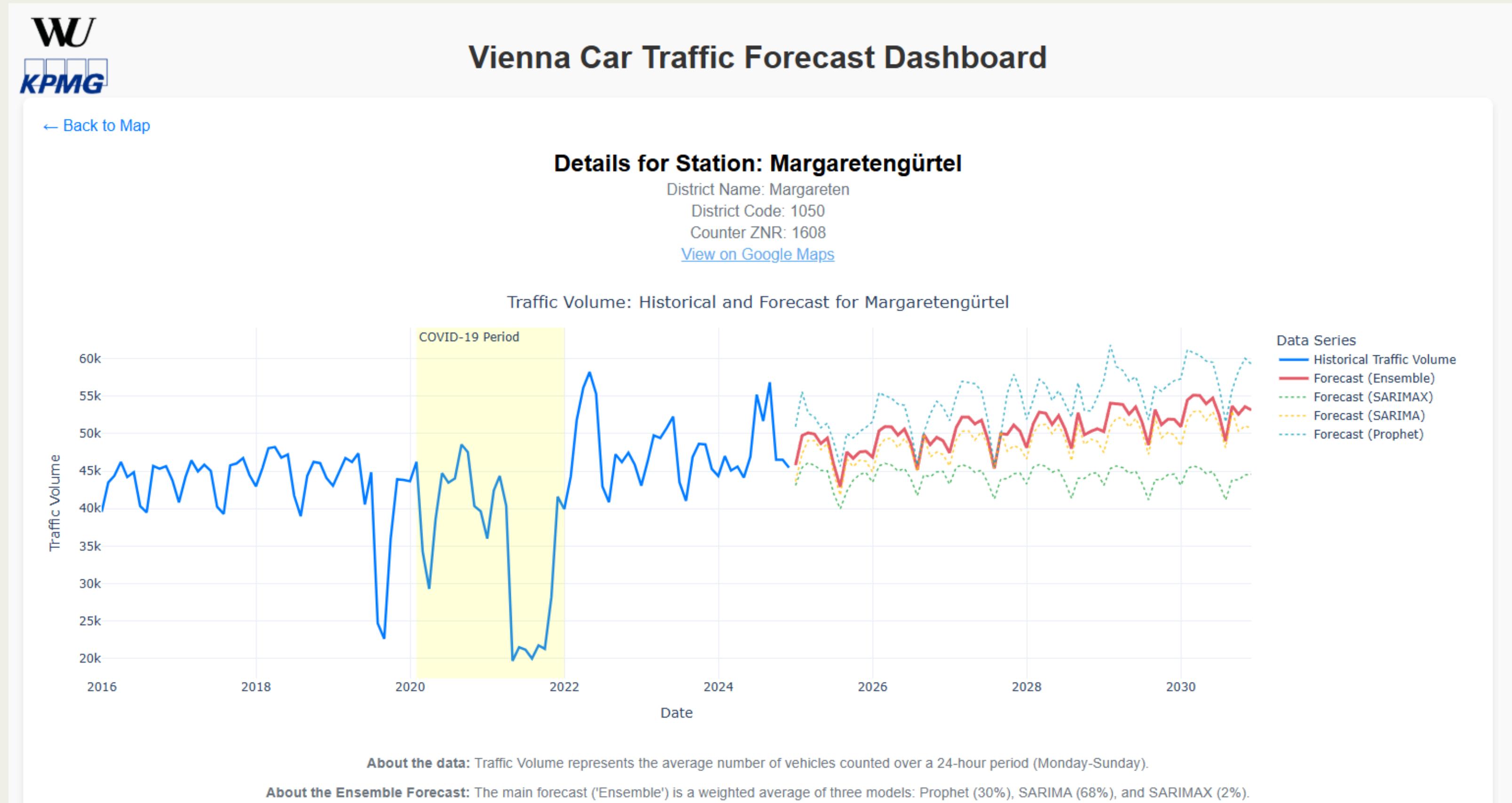
- Backtested each model on 2 year period (2023-2024) and compared to real data.
- Performance weighted ensemble forecasts.
- Combines strengths of each model.



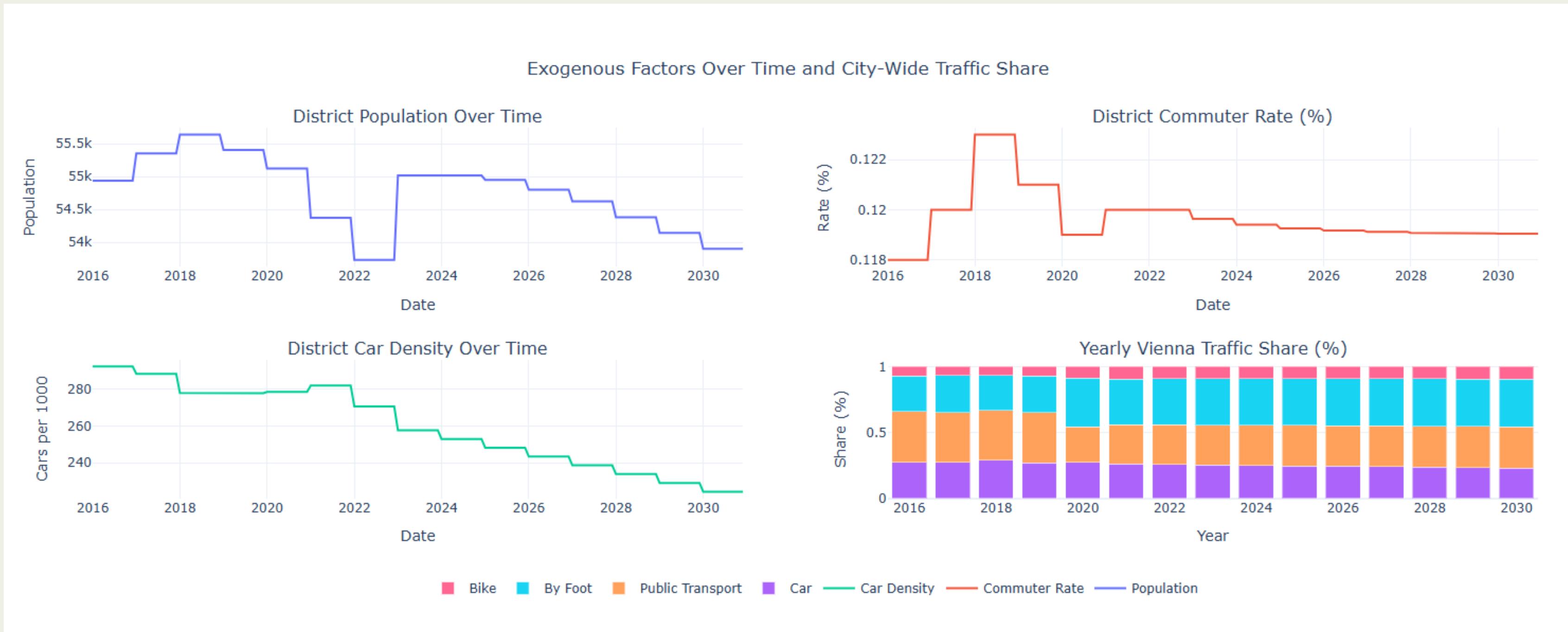
MAIN VIEW: VIENNA TRAFFIC MAP



DETAILED VIEW: TRAFFIC FORECASTS



DETAILED VIEW: THE WHY



Vienna Car Traffic Forecast Dashboard

Select a month and year to see the traffic data for Vienna's counting stations.



Displaying data for: April 2016

