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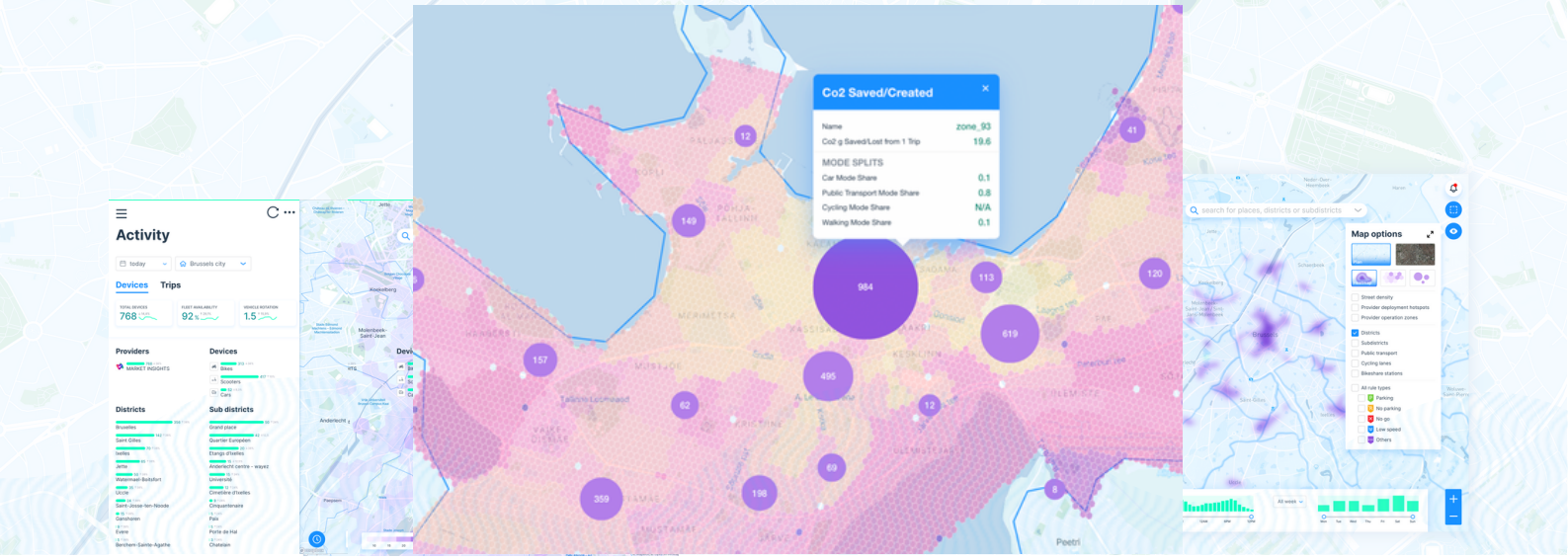
Mobility Policy Auto Tuner



The Opportunity

As cities try to accelerate their efforts to reach carbon neutrality, it becomes increasingly critical that they can measure the effectiveness of new policies and processes designed to produce sustainable outcomes. Today, this *"carbon accounting"* requires significant effort, cost, and time, blunting its effectiveness.

The Mobility Policy Auto Tuner (MPAT) tool seeks to expedite decision making and policy evaluation by using Machine Learning and statistical analysis to produce fast yet reliable modelling of impact, particularly of CO2 reduction. We offer a no-code experience to identify the potential impact of a policy prior to implementation, and to monitor the results after implementation.

The first pilots of the project test the optimal approaches to managing shared and micro-mobility. Rather than focusing solely on *"mitigating the bad"* aspect of shared mobility, the MPAT tool helps cities *"optimize the good"* by setting policies to maximize positive benefits such as CO2 reduction.

The Team

ABBEL

- Dutch-led, global strategic advisory firm specializing in Big Data
- Global experience in public transport and ticketing
- Expertise in climate accounting and strategic planning for cities looking to meet their sustainability targets

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- France based mobility SaaS start-up
- +60 clients across Europe and overseas using our platform to manage shared mobility services
- Expertise in GDPR-compliant mobility data management and analysis
- +25 employees with backgrounds in software, urban planning and transport

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The good data to make cities greener

Vianova enables cities, infrastructure owners and transport providers to better integrate and manage connected, shared and autonomous mobility in the public space. Our mobility intelligence platform helps multiple clients foster greener and safer streets while optimizing their operations' economics.

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The MPAT Approach

1. Create a CO2 Model

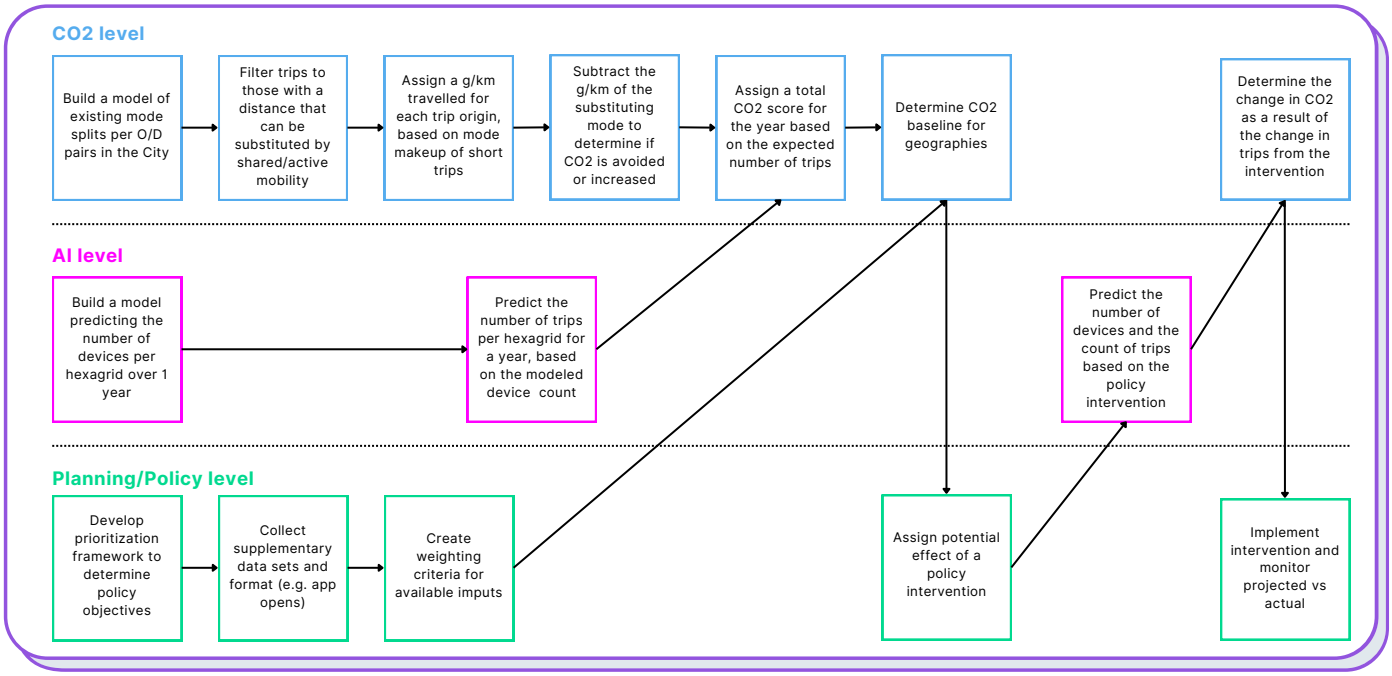
The MPAT process begins by creating a *"mode shift"* model, providing a granular assessment of the existing share of trips taken by car, public transport, walking, cycling, or other modes. We calculate a CO2 score for small geographical zones across the city, and determine the potential amount of CO2 saved by a single trip *"converted"* from the existing mode to something new or different, such as shared micro-mobility.

2. Implement an AI-based Prediction

Using historic shared mobility data and our unique Machine Learning model, MPAT creates a year-long prediction of the number of devices in a geography, and the resulting number of trips. This baseline can be further used to set a forecast for the amount of CO2 avoided by shared mobility modes.

3. Apply a Policy and Gauge Impact

Working in coordination with the City, the MPAT can model the outcomes of different policy interventions or infrastructure improvements to calculate the resulting change in fleet sizes, trips, and CO2. Once these policies are implemented, the result can be further tracked and compared to the predictive model to improve the next round of recommendations.



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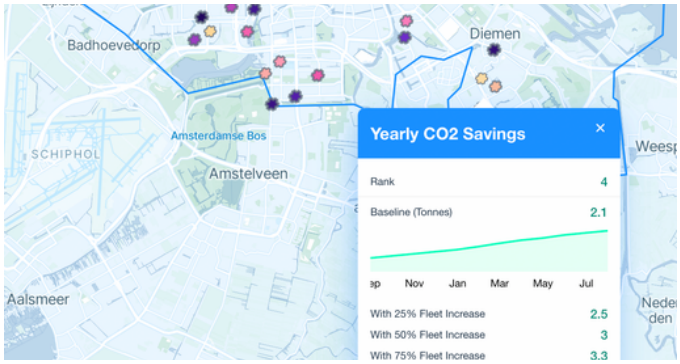
Two Concrete Use Cases to Pilot the Process

Amsterdam (NL)



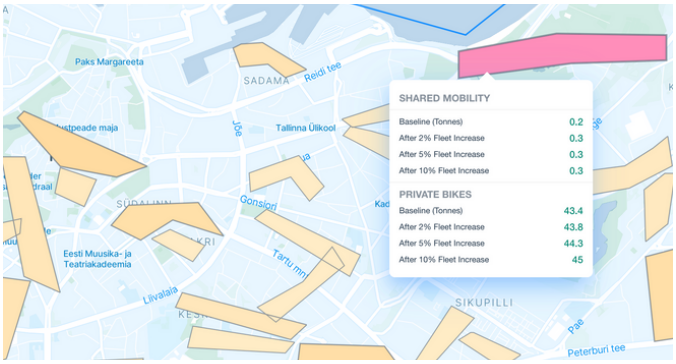
"Where are the best spots to put mobility hubs in order to maximize CO2 reduction?"

While the center of Amsterdam sees exceptionally high cycling and public transport usage, there are outlying areas that remain car-dependant. In order to achieve targets, the City hopes to shift these users to shared bikes, mopeds, and cars through the use of mobility hubs.

The MPAT team built two sets of 30 recommendations for mobility hub locations, using a mix of CO2 savings potential, predicted demand, and app opens which did not lead to trips. The MPAT model proposed locations optimization for different objectives - hubs which maximize potential CO2 savings and hubs which can support better public space management by organizing demand.

The MPAT model can be further refined as new data from other shared mobility sources becomes available.

Tallinn (EE)



"What would be the CO2 effect of closing missing links in the cycling network?"

While Tallinn has a robust cycling network, gaps in the network affect its utility. The MPAT team built a model of existing usage, then identified those corridors in the city where trips under 5 kilometers were disproportionately taken by car.

Using shared mobility data from electric bikes and scooters, the MPAT team was able to identify 50 gaps in the cycle path network and simulate the effect of 2%, 5%, and 10% growth in usage of the corridors, for both shared devices and private bicycles.

The corridors identified can be further investigated by the City for future infrastructure improvements or targeted mode shift strategies. When a change is implemented, the tool can be used to monitor the results.

Clear Insights to Deliver Greener Initiatives

Easy Set Up

Builds on travel demand models and surveys already built by cities

Simple Customization

Easy to modify and update with new input

Works With Standardized Data

Builds on travel demand models and surveys already tested by cities

Ready to Evolve

Methodology can be re-applied for new modes and use cases

Proven Data Science

Prophet-based to optimize speed and accuracy

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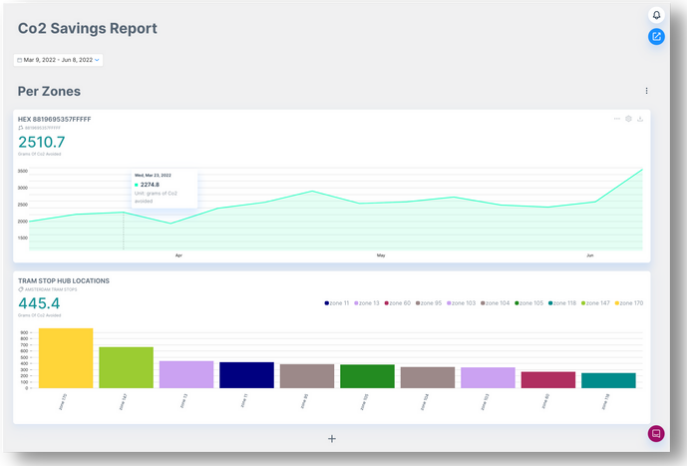
Seamless Integration Into the Powerful Cityscope Platform

Simple Reporting and Monitoring

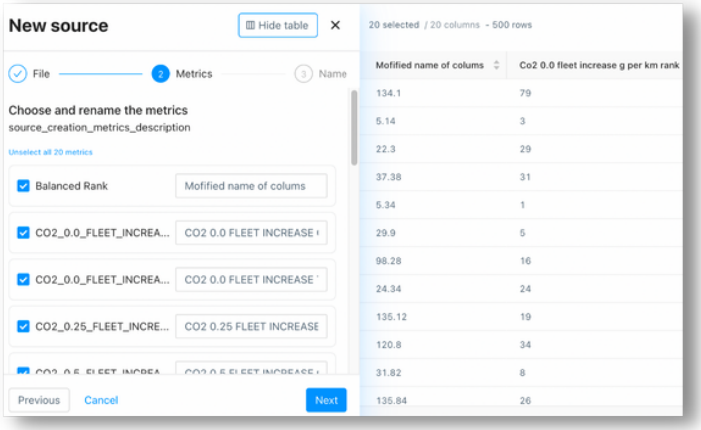
The MPAT is built for smooth interfacing with the existing features of Vianova's innovative Cityscope platform, including a simple yet powerful reporting tool.

Users can create widgets quickly to monitor the real-time effect of policies and track against the projected CO2 savings to help retrain the model for future use and enhanced planning.



An Enhanced Experience Through Bring-Your-Own-Data

As part of the MPAT experience, customers have the ability to *"bring their own data"* to the analysis of our intelligence layers. Simple uploading and customization of any CSV or GeoJSON allows for limitless analysis alongside the artificial intelligence layers. Users can supplement our data with their own from sources such as:



- *Traffic counters*
- *Demographic data*
- *Service complaints*
- *Charging station data*
- *Condition assessments*
- *Air quality monitors*
- *Survey results on travel patterns*
- *Public transport schedules*

Interested in Learning More?

The MPAT is designed to be procured as an add-on to our existing Cityscope product, trusted by cities and mobility operators across the world. Replacing complicated and time-intensive studies, the MPAT works quickly to project results.

Contact us for a specific price quote, which will be based on the complexity of your question and the availability of data to deliver your results quickly.

Acknowledgement

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AI4CITIES

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