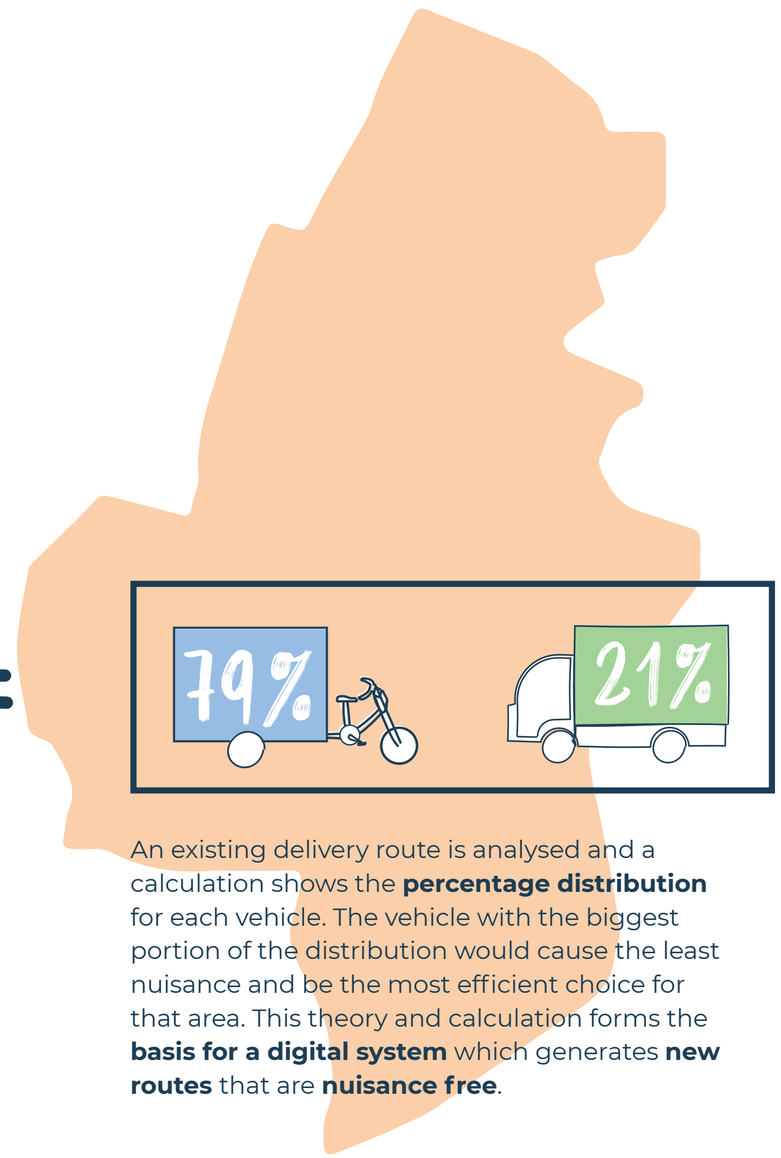
Designing a

Vehicle decision model

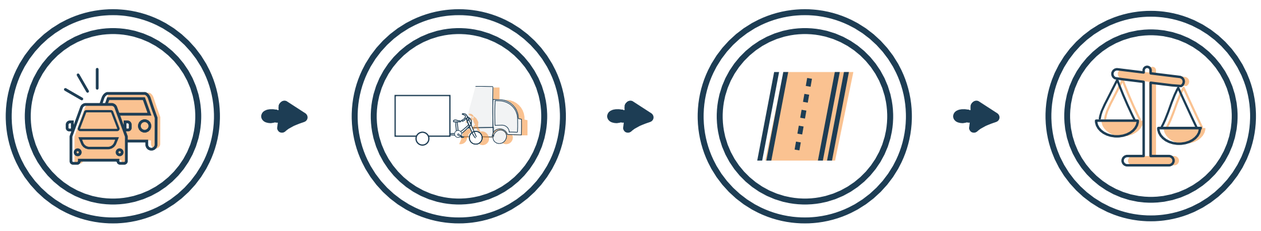
for LEV delivery in the last mile

Why?

PostNL wants to increase urban liveability by **reducing nuisance** caused by their delivery vans in 25 Dutch city centres by 2025. Sustainable **Light Electric Vehicles (LEVs)** will replace the traditional van. PostNL wants to know how to decide **what LEV should drive on what street to reduce the congestion and decrease risk for other road users and its drivers**, while still driving an efficient route. This research shows how **a model of choice** is designed. A strategy shows how the model can be turned into a digital planning system which generates optimal routes.



How?



Research and interviews conclude: Solve nuisance which is experienced unanimously, in every area. Focus factors are **congestion and safety**.

A **Fulpra Roll** (bicycle lane) and a **CargoLEV** (driveway) are chosen as vehicles the model is based on. Using both assures that all street types could be driven on a route.

Six street archetypes make up all street types in Dutch city centres. **Vehicle preference per stratona** based on regulations and ability to reduce nuisance.

What streets are more important? Adding **weighing factors, traffic intensity, drop density, stratona bottleneck and direction** benefits important streets.

An existing delivery route is analysed and a calculation shows the **percentage distribution** for each vehicle. The vehicle with the biggest portion of the distribution would cause the least nuisance and be the most efficient choice for that area. This theory and calculation forms the **basis for a digital system** which generates **new routes** that are **nuisance free**.

Stratonas©

Narrow one-way road with barriers

Bicycle lane

Pedestrian area

Mixed road

Narrow isolated bicycle lane

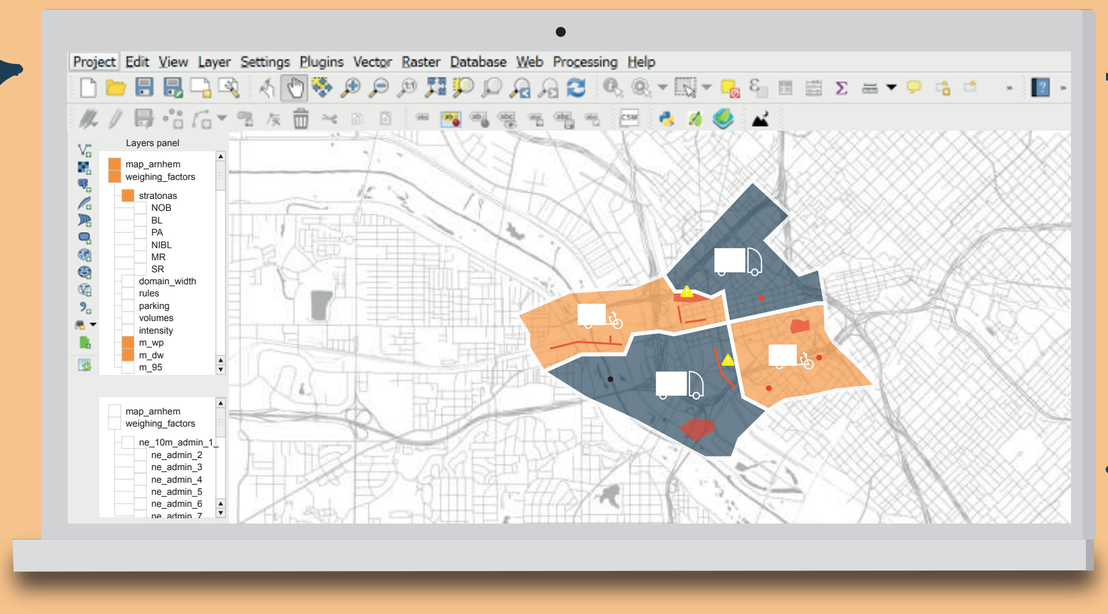
Sorted road

What?

Strategy for an adaptive and pro-active route planning tool 2025

Geo-data input

1. Necessary data for stratona identification in centres.
2. Data for weighing factors.
3. Ministry of infrastructure data on planned road work



LEVV routes

Feedback

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LEVVs in the last mile - creating a vehicle decision model for nuisance-free parcel delivery for PostNL
03-03-2021
Strategic Product Design

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