

USE CASE

Logistics & Loading Zones

Automated identification of viable urban loading locations

WHAT ARE LOGISTICS LOADING ZONE STUDIES?

Cities and planning agencies need to understand where goods loading and unloading can physically take place on public streets. This is a core input for urban freight strategies, logistics masterplans, and assessments of whether existing loading infrastructure is sufficient for future demand.

The challenge is that suitable locations are not self-evident. They depend on a combination of physical constraints (road width, obstacles, turning geometry) and regulatory parameters (parking restrictions, road category rules, cycling lane clearances) that may vary by scenario or have not yet been finalized. Testing different combinations of requirements by hand is extremely time-consuming and typically forces planners into heavy simplifications.

Clients are typically engineering and planning firms supporting municipalities with logistics strategy work.

- Which locations on public land are physically capable of accommodating goods loading under current space conditions?
- How does the set of viable locations change under different regulatory scenarios or vehicle size assumptions?
- Where do current parking and stopping restrictions affect loading zone availability?

OUR SOLUTION

The agentic system uses AI-assisted methods to systematically identify all viable loading zones across a study area — a task that would require significant effort with conventional, non-automated approaches.

Our agentic system delivers:

The approach is configured to the specific study area and regulatory context. Once configured, the agentic system runs the identification and variant analysis automatically, and outputs are delivered as GIS-compatible data.

WHAT YOU RECEIVE

- **A complete inventory of viable loading zones** on public land, calculated for the current road space conditions and applicable regulations
- **Multi-variant results** — the same analysis run against different regulatory assumptions (e.g. varying minimum residual road widths, different vehicle size classes) so planners can assess the sensitivity of the outcome to regulatory choices
- **Differentiation by vehicle type** — results are calculated separately for small and large trucks, reflecting real-world delivery fleet composition
- **GIS-compatible outputs** including raw geodata, ready for further processing in standard GIS tools

ANALYTICAL PROCESS

1

BASE MODEL

The agentic system runs on a logically consistent spatial model of the built environment. For logistics and loading-zone studies, the base model represents the street network and curb space along with the constraints that matter for freight operations (e.g. widths, obstacles, and relevant regulation attributes), and can be extended with client-provided datasets where available.

2

LOADING ZONE IDENTIFICATION

For each road section, the agentic system calculates whether a loading zone is geometrically feasible given current space conditions. This accounts for:

- Carriageway width and available kerb space
- Turning radii and swept paths for each vehicle class
- Required safety clearances alongside cycling lanes
- Whether reversing manoeuvres would cause unacceptable traffic blockage

3

REGULATORY VARIANT ANALYSIS

The agentic system runs the identification against multiple variants of the regulatory requirements, for example:

- Different minimum residual carriageway widths by road category
- Stricter or looser rules for reversing manoeuvres
- Varying safety buffer distances at cycling infrastructure

This allows the client to see how the total supply of loading zones shifts depending on which standards are applied — critical when requirements are still being defined.

4

PARKING AND STOPPING RESTRICTION OVERLAY

Existing parking and stopping restrictions are overlaid on the results, distinguishing between locations that are geometrically viable and those that are currently available under existing rules.

5

REPORT

Outputs are delivered as a slide deck plus GIS-ready geodatasets and tabular exports (e.g. Excel spreadsheets), so results can be reviewed, communicated, and integrated into standard planning workflows.

CASE STUDIES

- P0024 — Identification of logistic spaces (Luzern/Lucerne)