

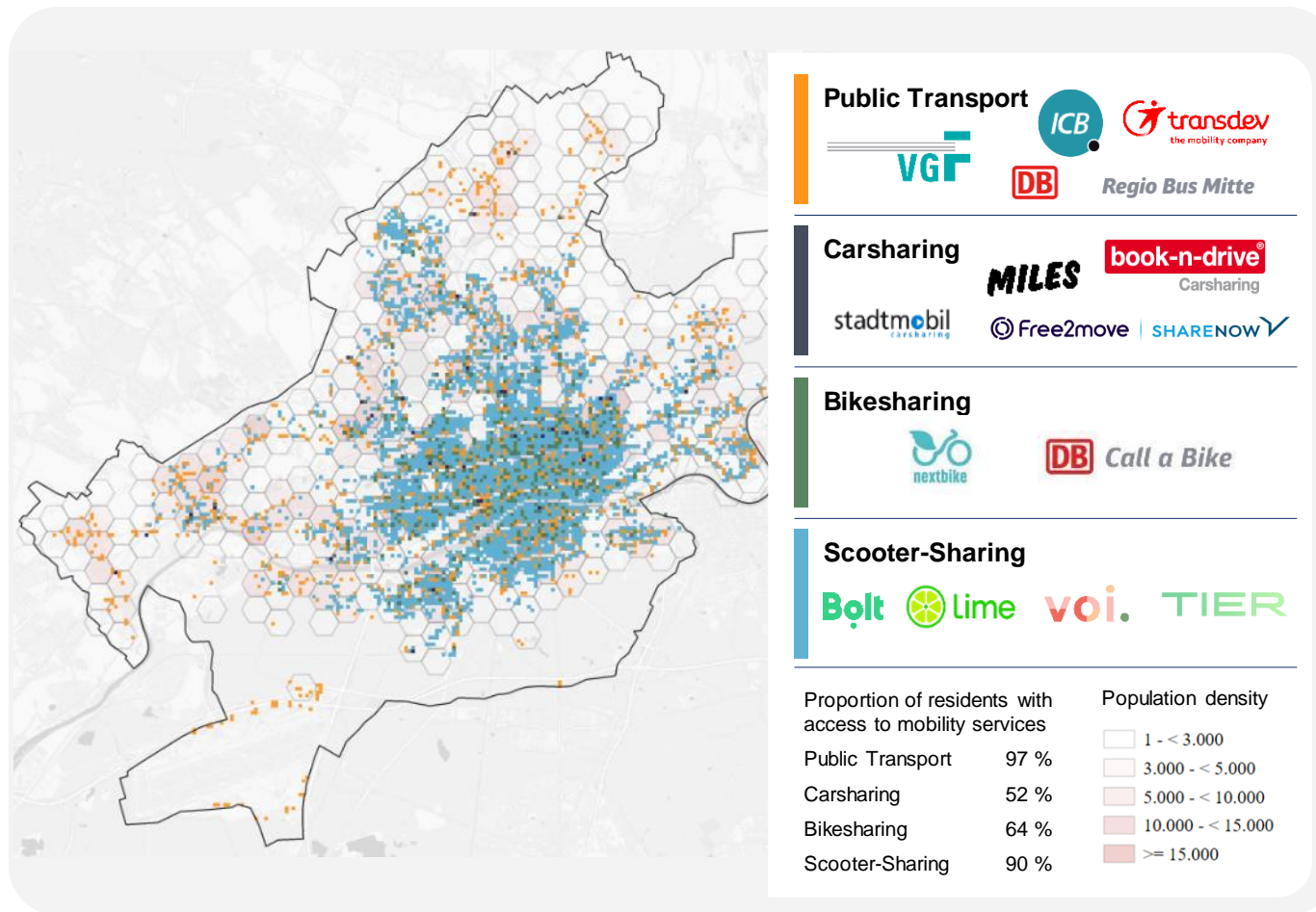
# Mobility Hubs for Frankfurt



# Shared mobility services in Frankfurt were previously unstructured and not linked to one another

## Status quo in Frankfurt

- Shared mobility services are provided by independently operating companies in addition to traditional public transport services
- E-scooter operators are regulated by special-use permits; each operator is permitted 3,000 vehicles (e-scooters or bicycles), 750 of them in the city center
- For each vehicle, the operators have to pay a fee of 40 € per year
- The transfer of special use permits to bike sharing has been implemented since 01.07.2024 and will be realized soon
- A distribution procedure of public parking spaces for station-based car sharing is in preparation



# The stations work towards the goals of expanding the availability of mobility services and regulating the sharing operators

## Expanding the availability of mobility services



### Public transport

Increasing the visibility of sharing offers and expanding the offer from the citizen's point of view by linking them with public transport stops

### Mobility Hubs Frankfurt

### Carsharing

Increasing the area covered by station-based car sharing services for a reliable, easy interchange

### Micromobility

Flexible transfer from/to public transport for the first/last mile and flexible rental/return of micromobility services

## Regulating the sharing operators



Creation of dedicated parking areas, elimination of scooter chaos



A full range of services, even in suburban areas

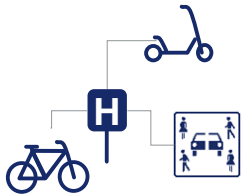
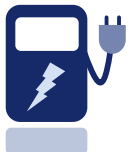



Spatial and digital linkage of different forms of mobility



Reliable and predictable mobility services

# The design of the stations focuses on the means of transport and minimizes the use of space

	Not in focus	Optional	Focus
<b>Means of transport</b> 	<ul style="list-style-type: none"> <li>● Long-distance Bus</li> <li>● Taxi Cab</li> </ul>	<ul style="list-style-type: none"> <li>● Cargo bike sharing</li> <li>● E-mopeds</li> </ul>	<ul style="list-style-type: none"> <li>● Private bikes</li> <li>● Bikes sharing</li> <li>● E-scooters</li> <li>● Public transport</li> <li>● Carsharing</li> </ul>
<b>Infrastructure</b> 	<ul style="list-style-type: none"> <li>● Toilets</li> <li>● Digital display panel</li> <li>● Charging infrastructure for private cars or micromobility</li> </ul>	<ul style="list-style-type: none"> <li>● Park + Ride</li> <li>● WiFi</li> <li>● Charging infrastructure car sharing</li> </ul>	<ul style="list-style-type: none"> <li>● Bike bracket</li> <li>● Display panel</li> </ul>
<b>Design</b> 	<ul style="list-style-type: none"> <li>● Self-service kiosk</li> <li>● Lockers</li> <li>● Lounge area</li> </ul>	<ul style="list-style-type: none"> <li>● Weather protection</li> <li>● Seating</li> <li>● Air pump</li> <li>● Parcel station</li> </ul>	<ul style="list-style-type: none"> <li>● Branding</li> <li>● Area map</li> </ul>



# Three types of stations are to be implemented in Frankfurt, differing in size and function

## 555 S-stations



- Exclusively Micromobility in the city center, in areas close to the city center and in district centers (about every 100-200m)
- No direct connection to public transport
- Designation of one public parking space each with a high station density
- Marking and display panel, optional parking options for private bicycles

## 385 M-stations



- Station-based car sharing and Micromobility at public transport stops and in residential areas throughout the city (approximately every 500m)
- Low to medium space requirement with medium station density
- Marking and display panel, optional parking options for private bicycles

## 32 L-stations



- Station-based car sharing and micromobility exclusively on outer branches of the rail network and at selected railway hubs
- High space requirement with low station density
- Marking and display panel, optional parking options for private bicycles



Organize and visualize mobility in the city (district) center

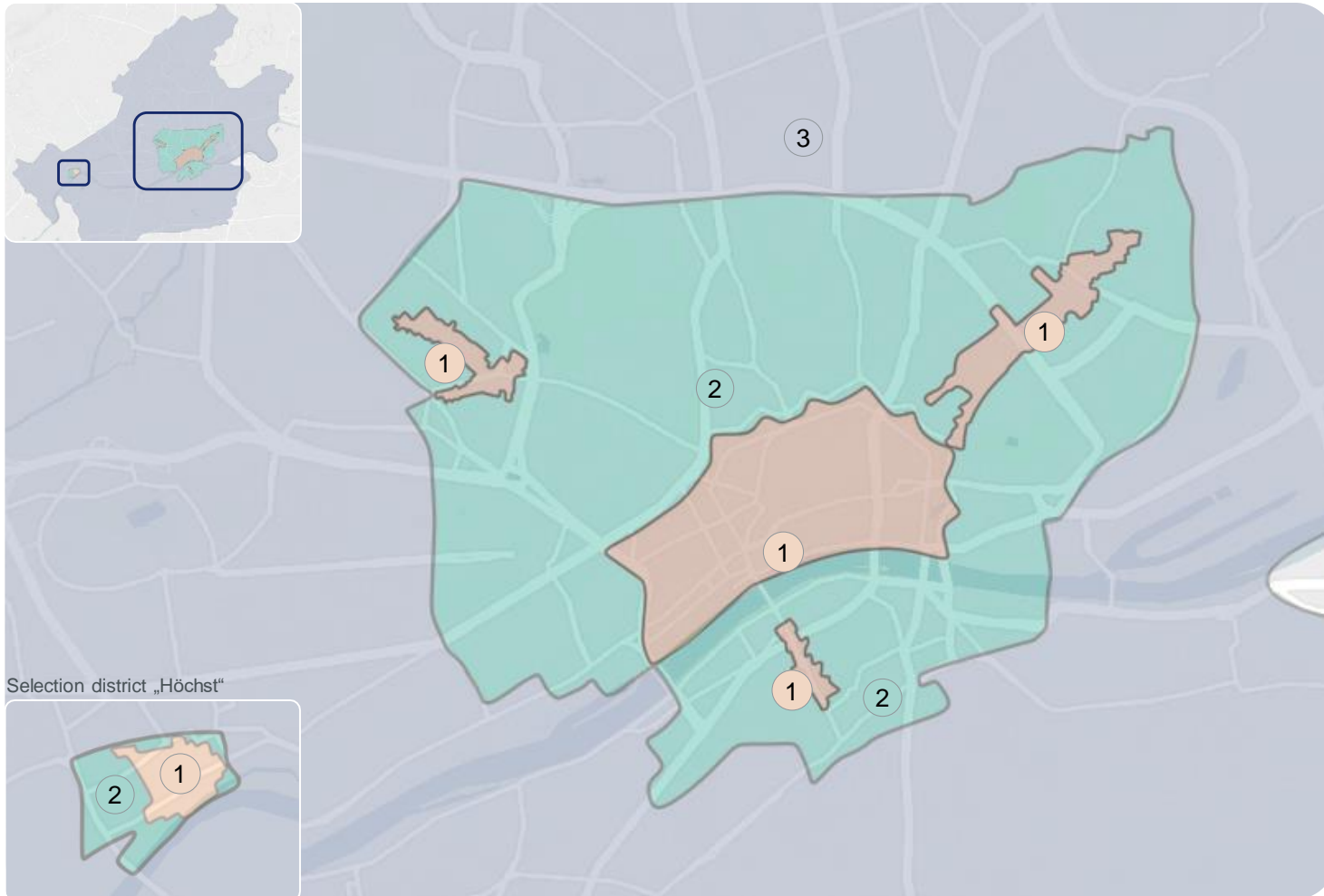


Improve availability mobility services in the city



Creating mobility hubs

# In Frankfurt, a distinction is made between three areas. The different station types are used in different areas



## Area 1

- City center and district centers
- S-stations (every 100m)
- No M-stations
- No L-stations
- No free floating <sup>1</sup>

1

## Area 2

- Extended city center
- S-stations (every 200m)
- M-stations (every 500m)
- No L-Stationen
- Restricted free-floating <sup>1</sup>

2

## Area 3

- Districts outside of extended city center
- S-stations as required <sup>1</sup>
- M-stations (every 500m) <sup>1</sup>
- L-stations at selected public transport hubs <sup>1</sup>

3

<sup>1</sup> no parking zones of 100m around stations

# In the goal scenario, around 1,000 stations will be available throughout the city by 2029

## Goal scenario

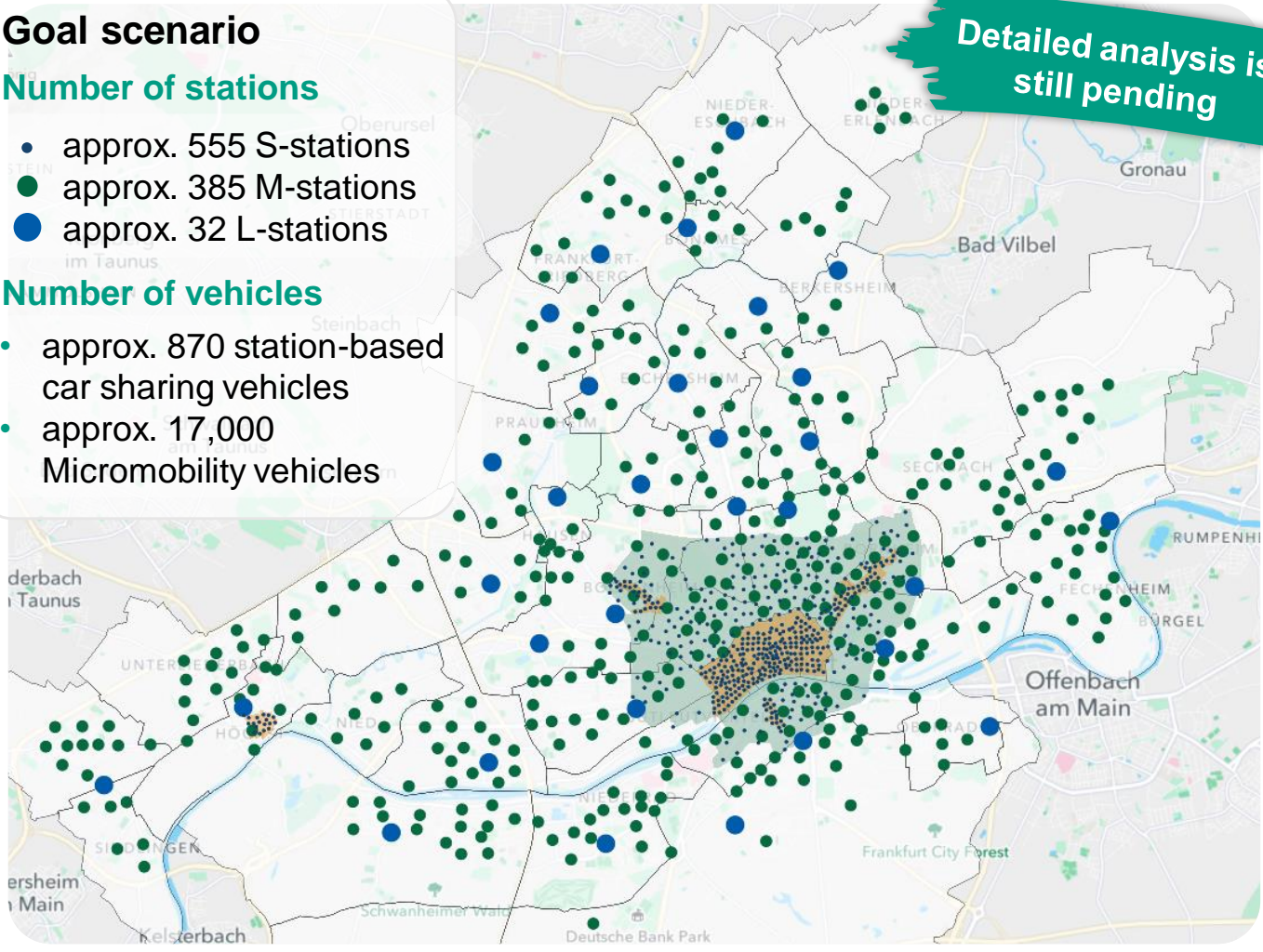
### Number of stations

- approx. 555 S-stations
- approx. 385 M-stations
- approx. 32 L-stations

### Number of vehicles

- approx. 870 station-based car sharing vehicles
- approx. 17,000 Micromobility vehicles

Detailed analysis is still pending



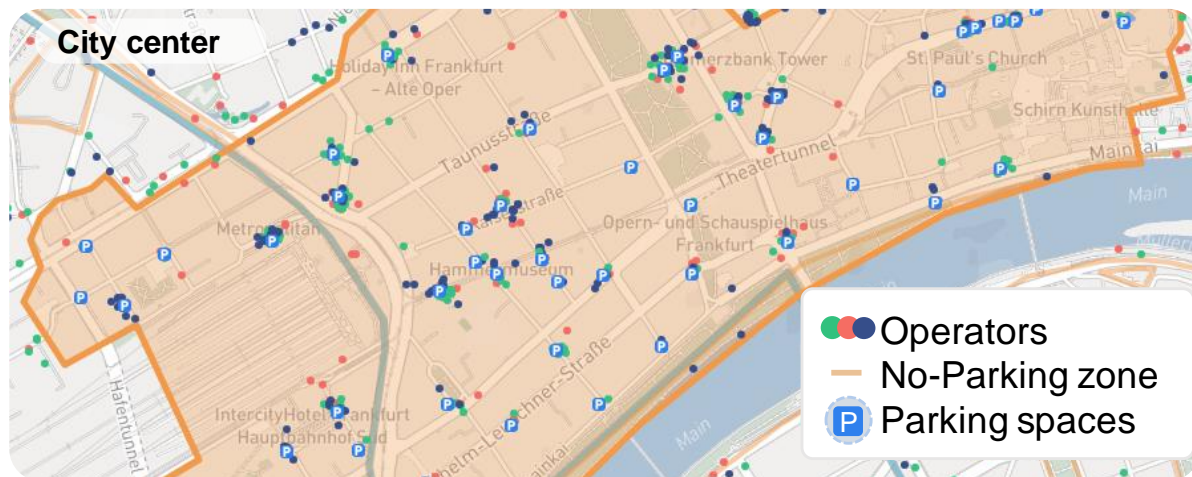
## The criteria for finding a location

- Population density
- Availability of public transport services
- Demand data from shared mobility operators
- Local advisory council proposals
- Resident parking zones
- Existing car/bike sharing stations
- Areas and prohibited zones from the e-scooter special use permit
- A and B centers according to the 2018 center concept
- Locations of relevant employers
- Locations of university facilities and student residences
- Educational institutions
- Tourist destinations and other POIs
- P+R
- ...



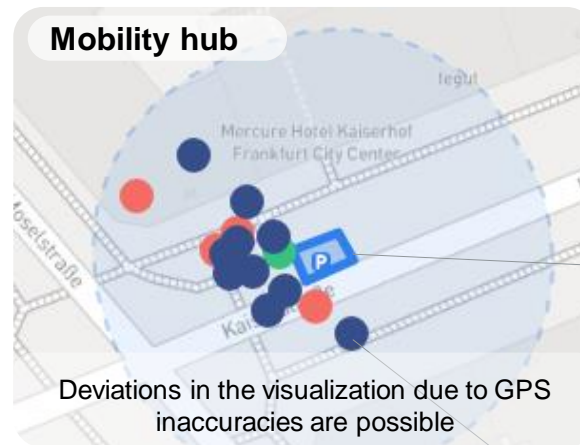
# Compliance with the current special use permit and the demand for the services is evaluated in the city's software

## Examples of the new no-parking zones



- The e-scooter locations are made visible to traffiQ in the Nivel-software. Information on parking spaces and no-parking zones is transmitted digitally to the providers.
- Parking is prohibited 100 m around the stations, so free-floating remains possible in some parts of the city.
- By setting up mobility hubs as additional parking spaces for micromobility, the no-parking zones can be extended to regulate the operators.

## Management of operators and evaluation



- The stations are defined with data such as the capacity limit.
- Providers receive notifications for the disposition of vehicles.
- Individual vehicles can also be reported.

**P Kaiser-/Moselstraße**

<b>Vehicles in total</b>				<b>16</b>
	↘ 16	🚲 0	🛴 0	⤴
Voi	4	0	0	4
Bolt	1	0	0	1
Tier	11	0	0	11

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**Max vehicles** **20 vehicles**

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**Operator alert** **on**

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**Alert margin:** **2 vehicles**

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**60%**

**3 hours since last update**





**P Parked, available**

**Placed by user today at 10:57 AM**

**REPORT POOR PARKING**

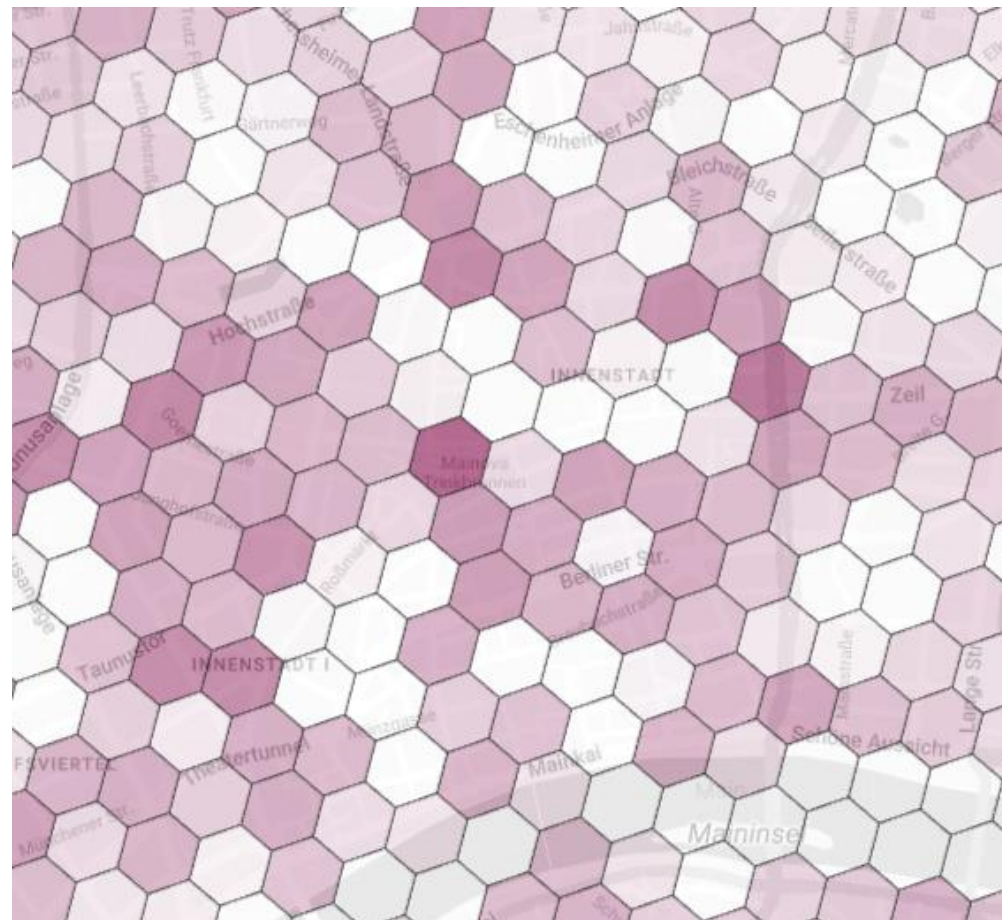


# The software's analysis tool can be used to display general data on vehicles and journeys

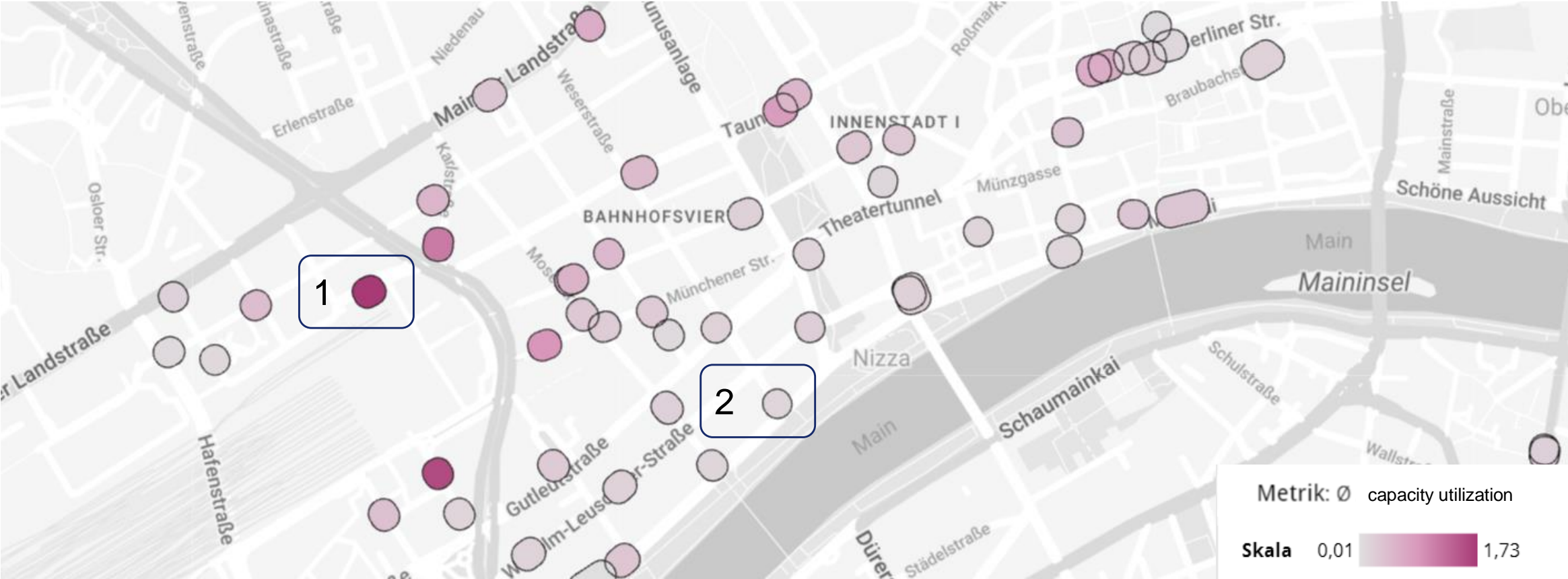
	<b>Number of vehicles</b>	approx.. 12,000
	<b>Travel time</b>	07:45 minutes
	<b>Route</b>	1,4 kilometers
	<b>Speed</b>	14,6 km/h

- Data represent average values for the analysis period from April to July
- The target of max. 3,000 vehicles per provider is met by all providers
- The starting points and final destinations of the trips can be used to determine the need for additional parking spaces

## Final destinations of e-scooter journeys



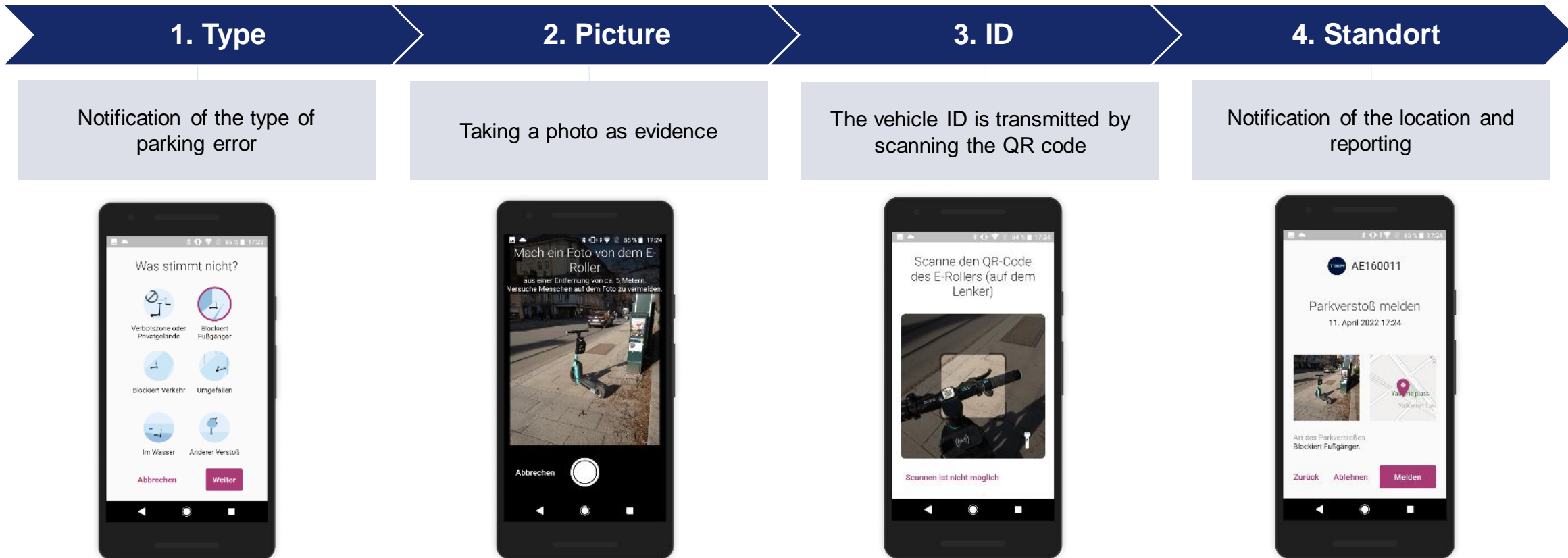
# Data on the utilization and overflow show the extent to which the existing hubs are being used and the need for additional hubs



- 1: The hubs around Frankfurt main station are currently overloaded: There is an average of 35 vehicles parked at the parking area instead of the permitted 20 vehicles. Additional spaces are therefore already being reviewed here
- 2: Other hubs are underused: On average, at “Mainlust” only 2.6 vehicles are parked there

# The poor parking app enables the locals to actively participate in reporting e-scooters that are parked incorrectly

Poor parking can be reported in four steps:



Quelle: Google Play Store






The Nivel "Poor-Parking-App" can be downloaded from the App Store and Google Play Store



# After receiving the notification, the operators have to take action, which can basically result in three different procedures




The operator rejects the report if no violation is recognizable in the photo



-  Von öffentlichem Nutzer angemeldet, gestern, 08:44
- ! Blockiert einen Gehweg.
-  Abgelehnt von Lime, gestern, 10:27 ([Rückgängig machen](#))




The parking violation will be corrected manually by the provider's dispatch team



-  Von öffentlichem Nutzer angemeldet, gestern, 19:35
- ! Blockiert einen Gehweg.
-  Gestartet von Tier, heute, 06:04 ([Rückgängig machen](#))

The parking violation is automatically corrected because the vehicle was rented



-  Von öffentlichem Nutzer angemeldet, gestern, 12:08
- ! Außerhalb eines Parkbereichs. Verkehrshindernis.
-  Behoben von MDS-event, gestern, 13:52 ([Rückgängig machen](#))



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