

# Plan Charging Infrastructure 2030



May 31th 2023  
Matthijs Kok



Gemeente Utrecht

# City of Utrecht

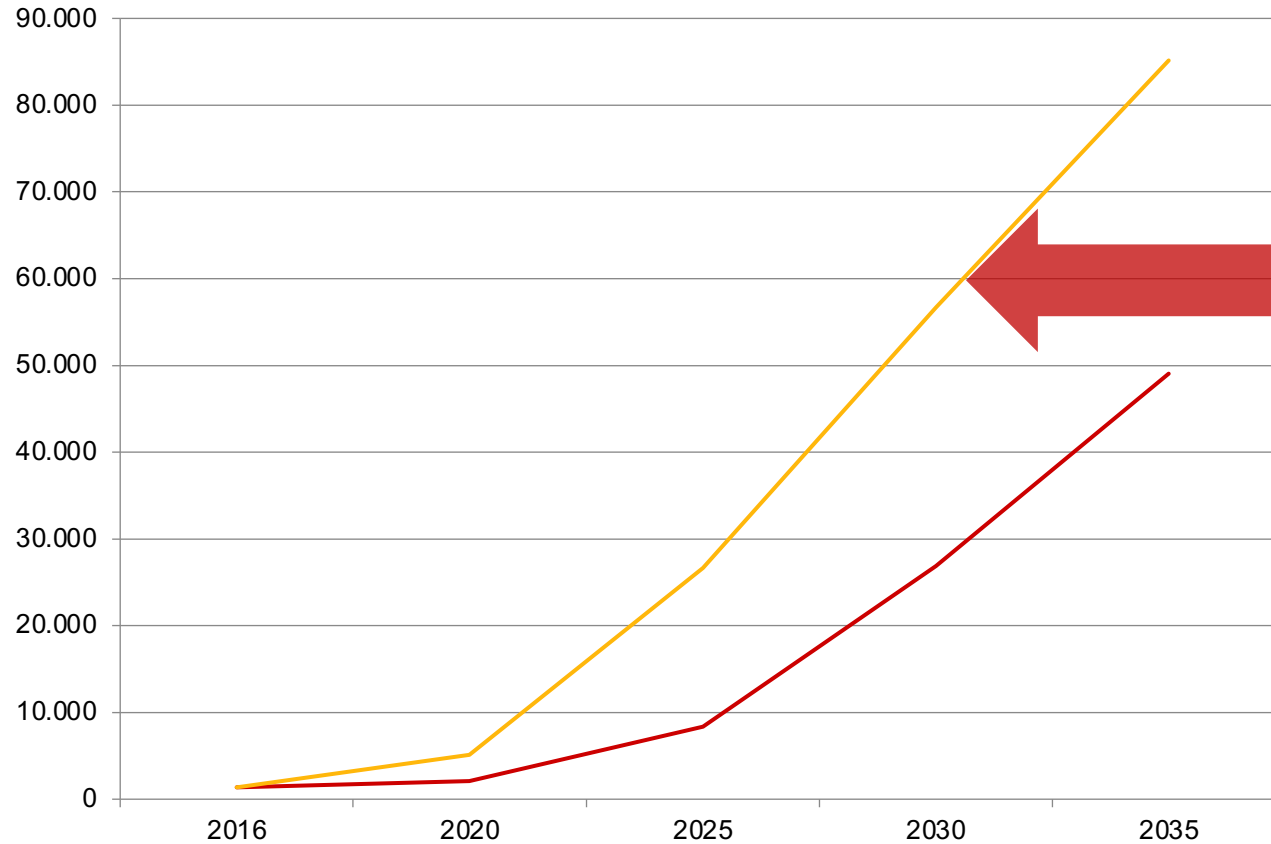
- 350.000 inhabitants
- 140.000 cars
- 70% parking in public space
- Healty Urban Living
- Ambition: zero emission zone in 2030



# 2025: 8.500 EV's 6%

# 2030: 26.900 EV's 19%

## Electric cars Utrecht



### ZE-zone 2030:

- 2025: 26.670 EV's 19%
- 2030: 56.650 EV's 40%

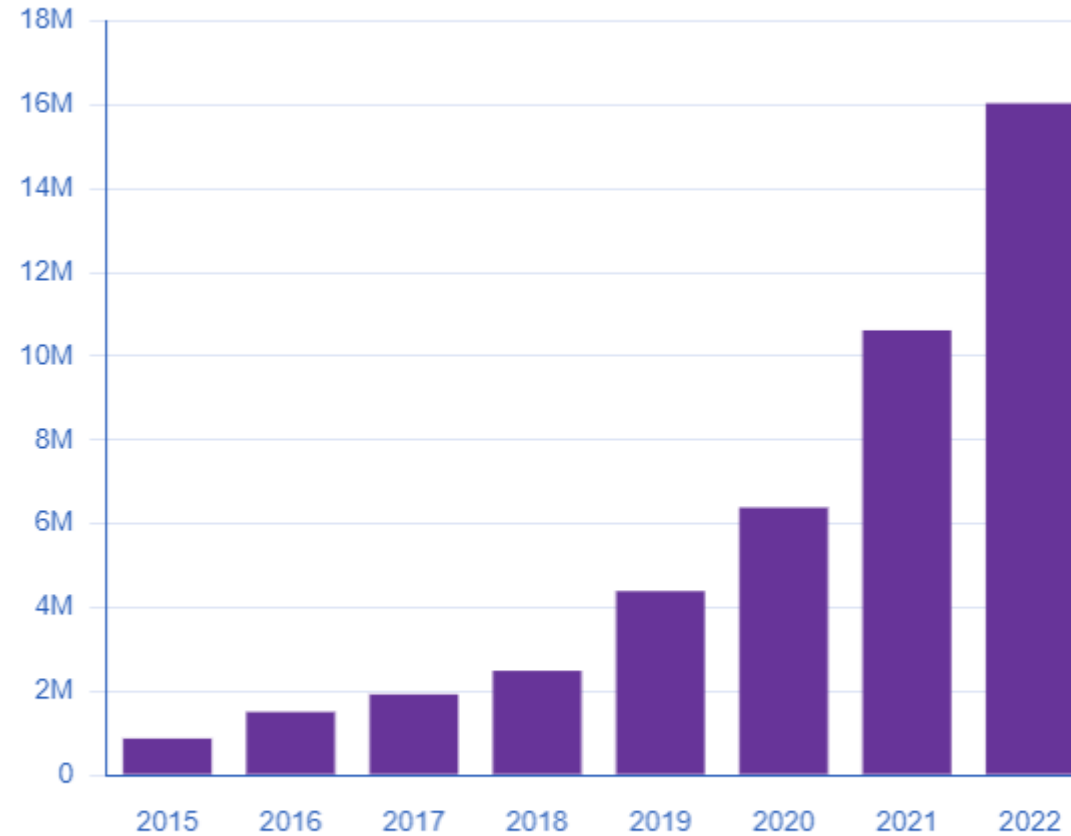
EVs Utrecht

Elektrische voertuigen snelle transitie



# Annual growth kWh 150%

Source: [www.evdata.nl](http://www.evdata.nl)



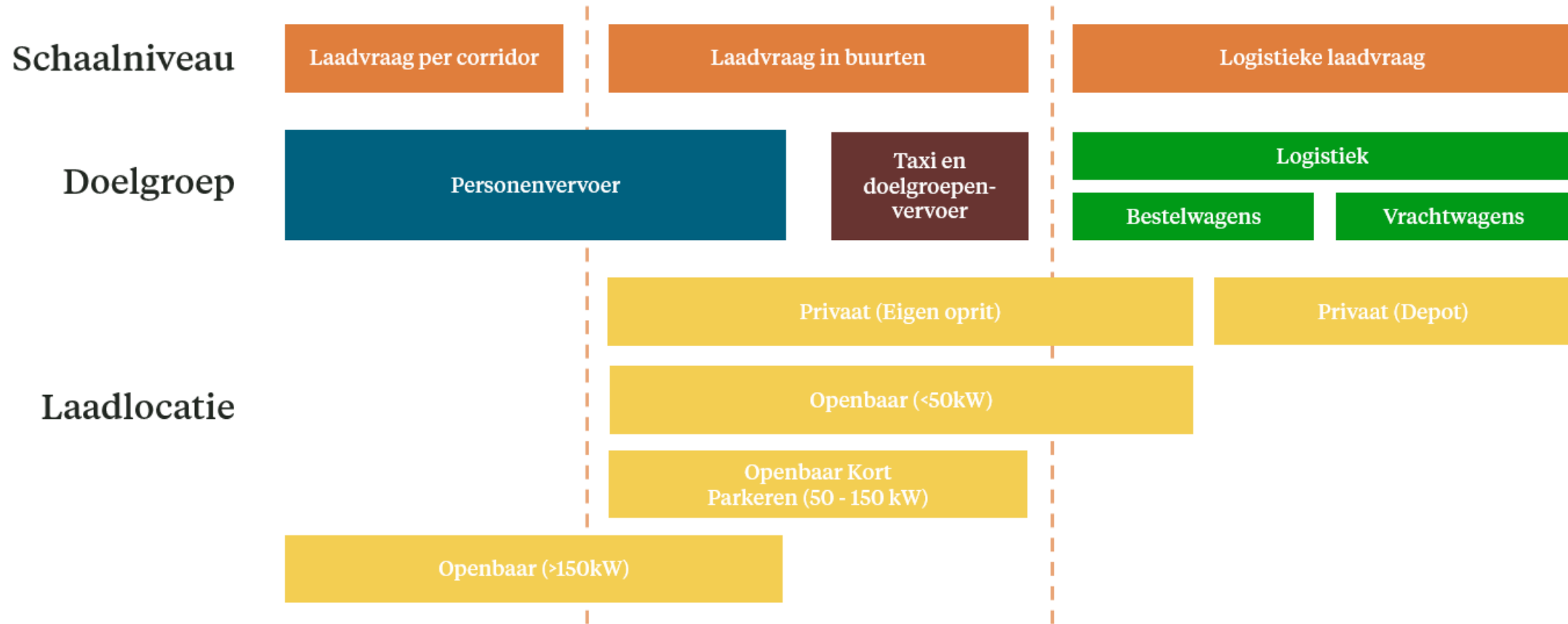
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# Charging infrastructure plan 2030



# Forecast 2030



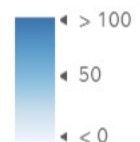
## Elektrische personenvoertuigen in 2030

De kaart laat de dichtheid zien van elektrische personenvoertuigen in 2030. Door te klikken op een buurt, verschijnt een pop-up. In deze pop-up is aanvullende informatie te vinden over de verwachte aantal EV's, kWh stroom en laadpalen.

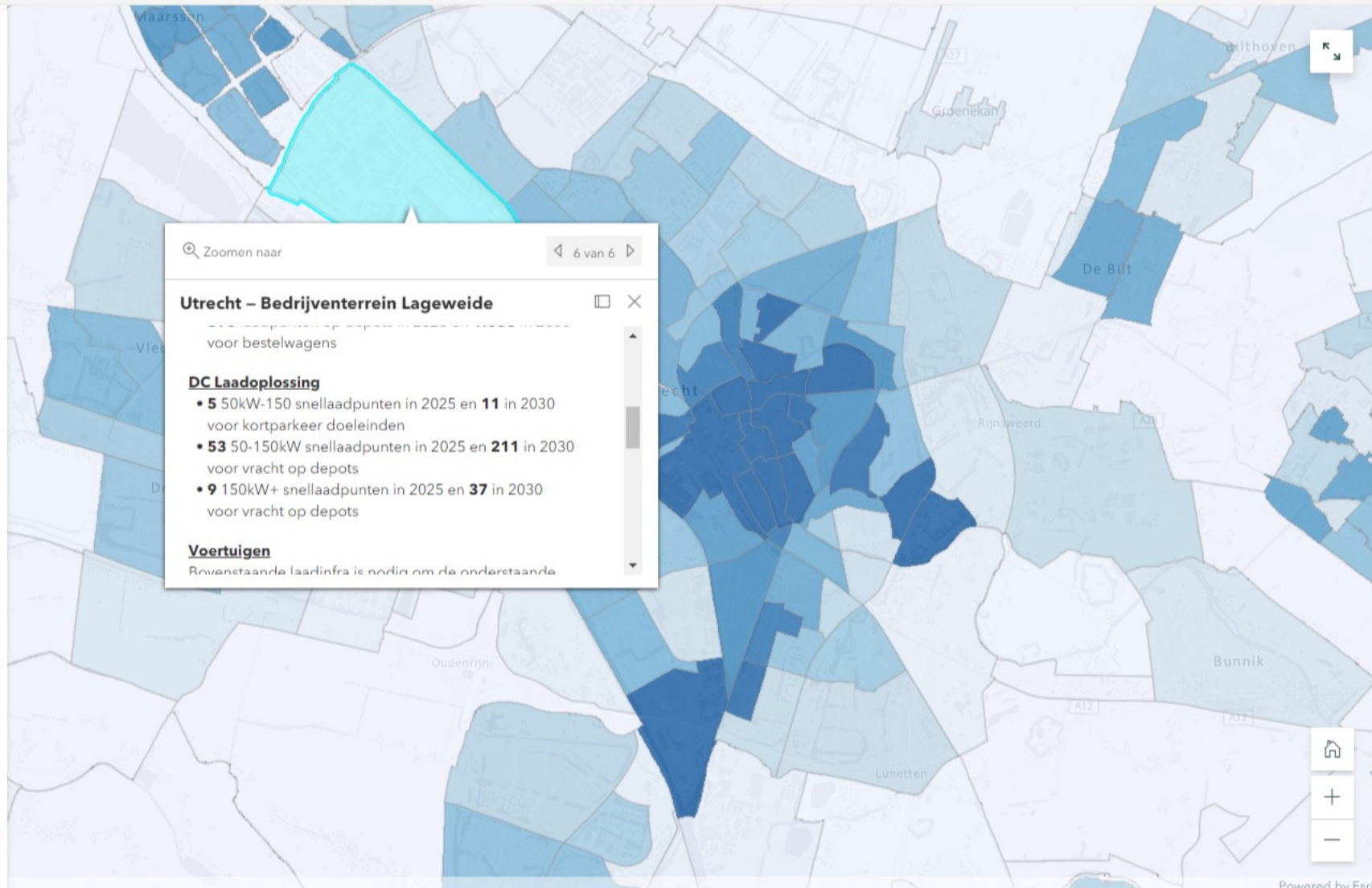
NAL West - EV's bewoners, bezoekers, forenzen



Dichtheid EV's van bewoners, bezoekers en forenzen per km2 in 2030



Legenda



# Charging infrastructure Plan 2030




Gemeente Utrecht


## ► Kaart:


Verbeelding van het plan  
laadinfrastructuur 2030:




### Personenvervoer

 = 5.700 openbare  
laadpalen (11kW) (naast  
30.000 private laadpunten)


 = 460 kortparkeer  
snelladers bij winkels en  
sport-voorzieningen  
(50-180kW)


 = 60 hoog vermogen  
stations langs de ring  
(350kW)

 = 10 snelladers voor  
taxi's bij de bufferplaatsen

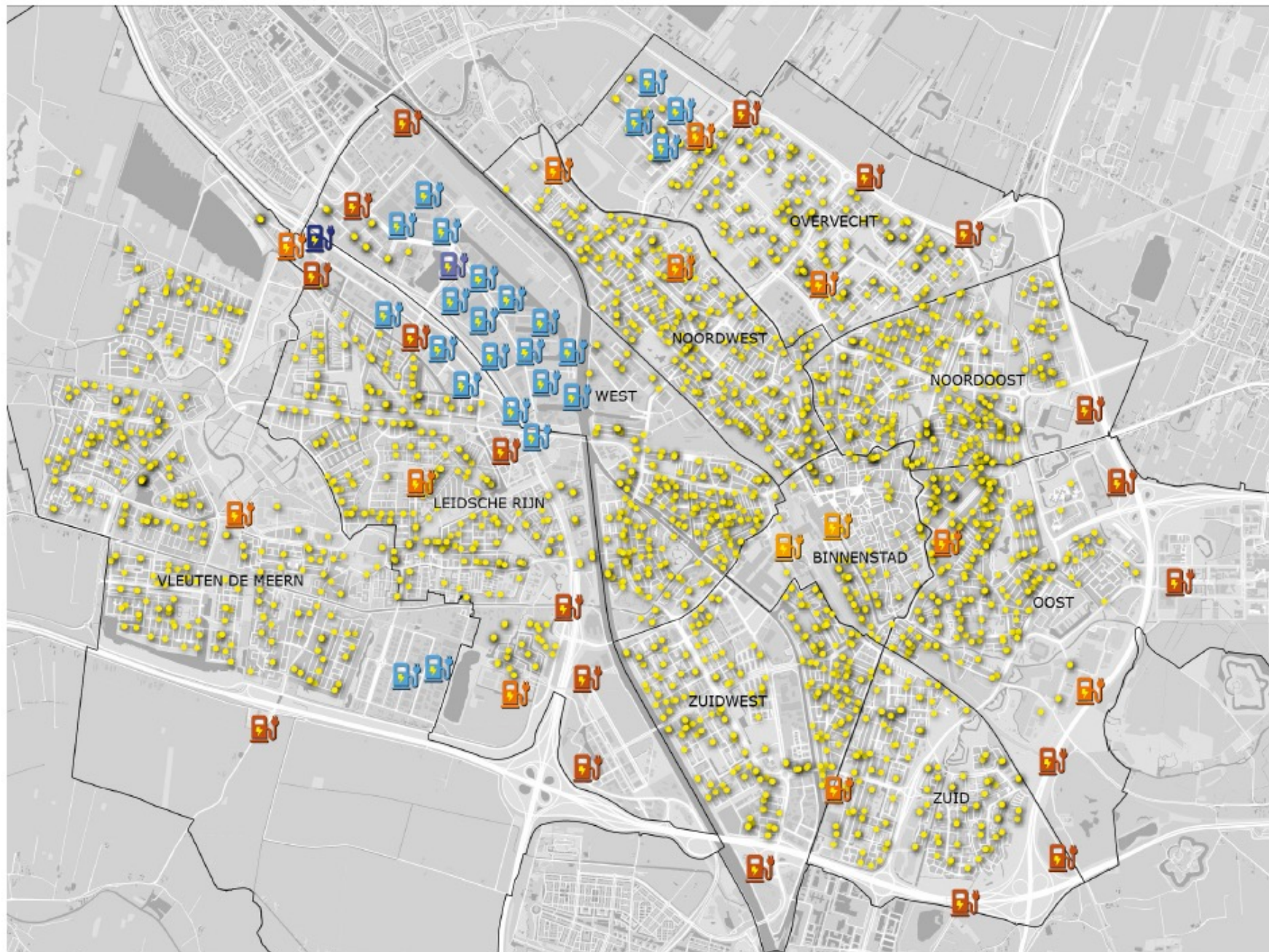


### Logistiek

 = 330 DC depotladers  
voor vrachtwagens  
(50-150kW)

 = 2-4 DC laders voor  
vrachtwagens bij truckparking  
(50-150kW)

 = 58 ultrasnelladers voor  
vrachtwagens (500-1500kW)






# 5.000 regular public charging points

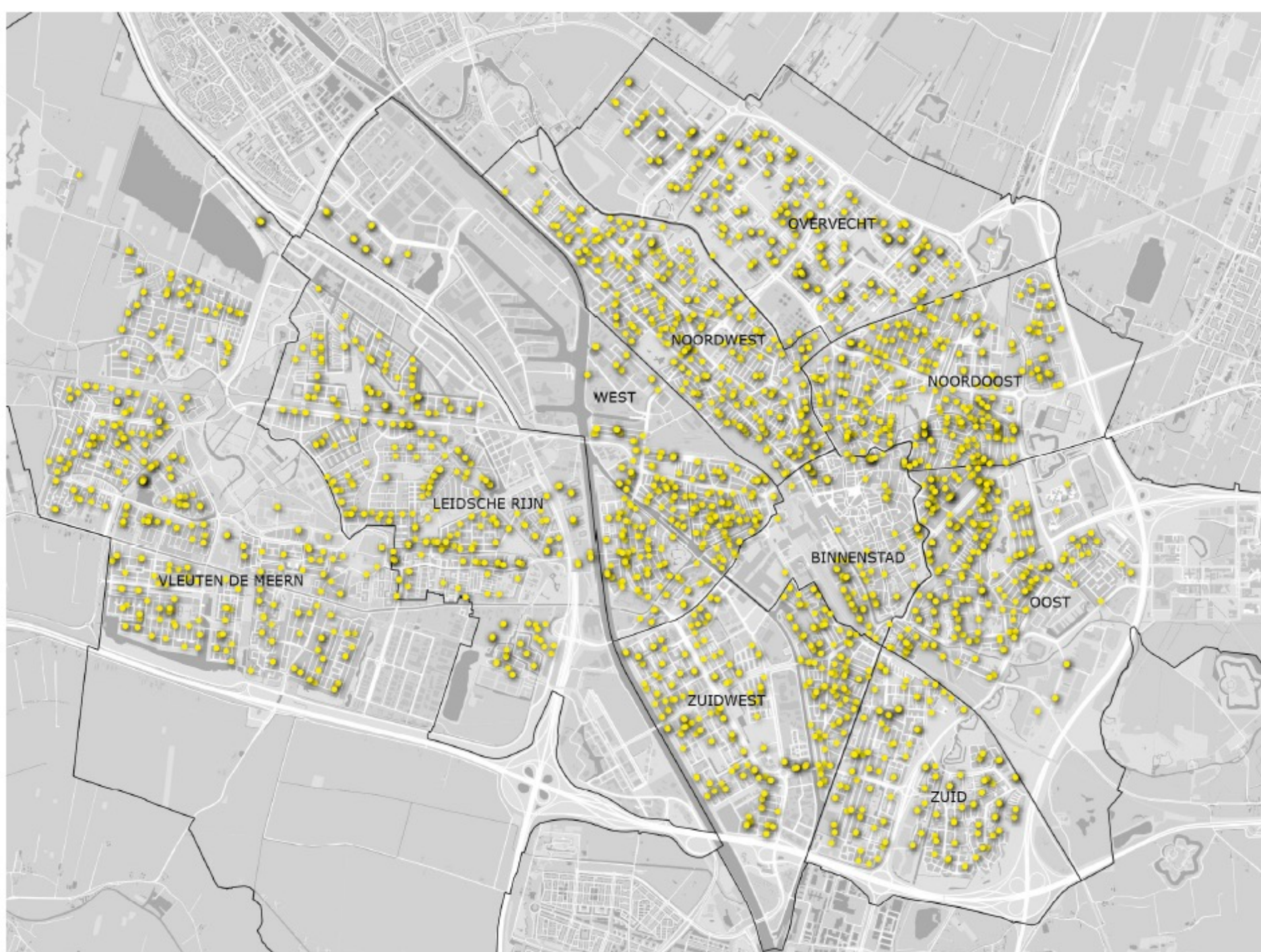
## ► Kaart:

Verbeelding van het plan laadinfrastructuur 2030:



Personenvervoer

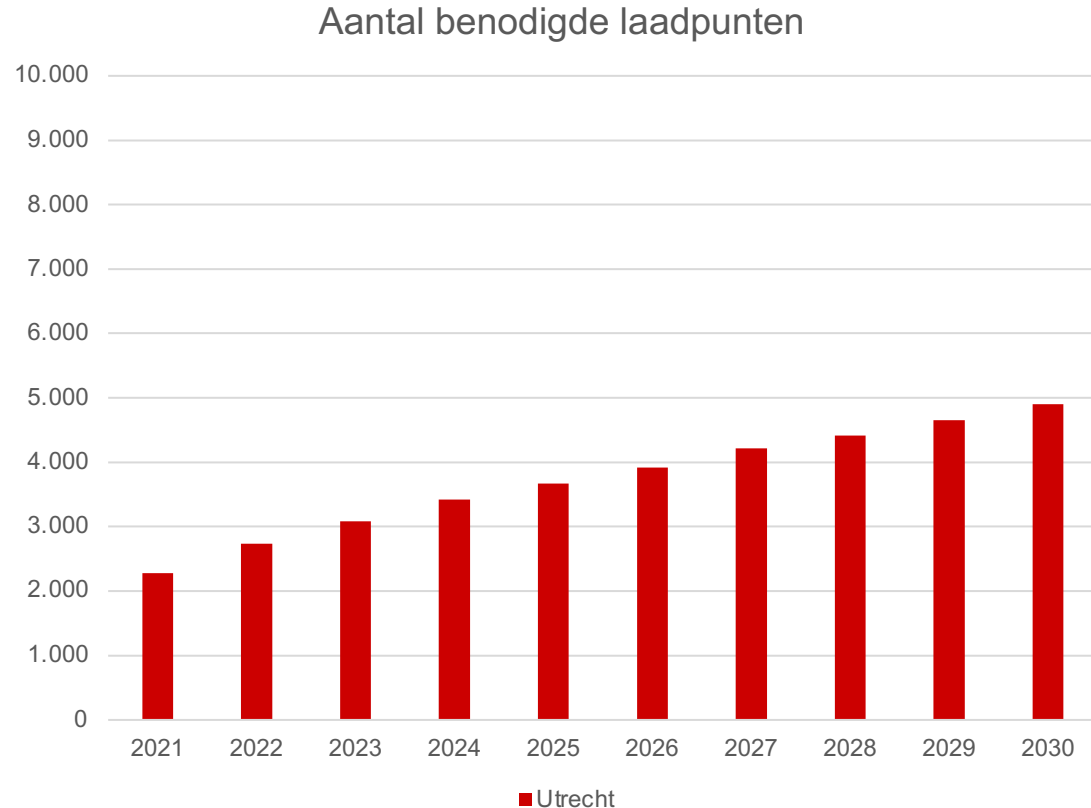
 = 5.700 openbare laadpalen (11kW) (naast 30.000 private laadpunten)



# Curbside AC chargers



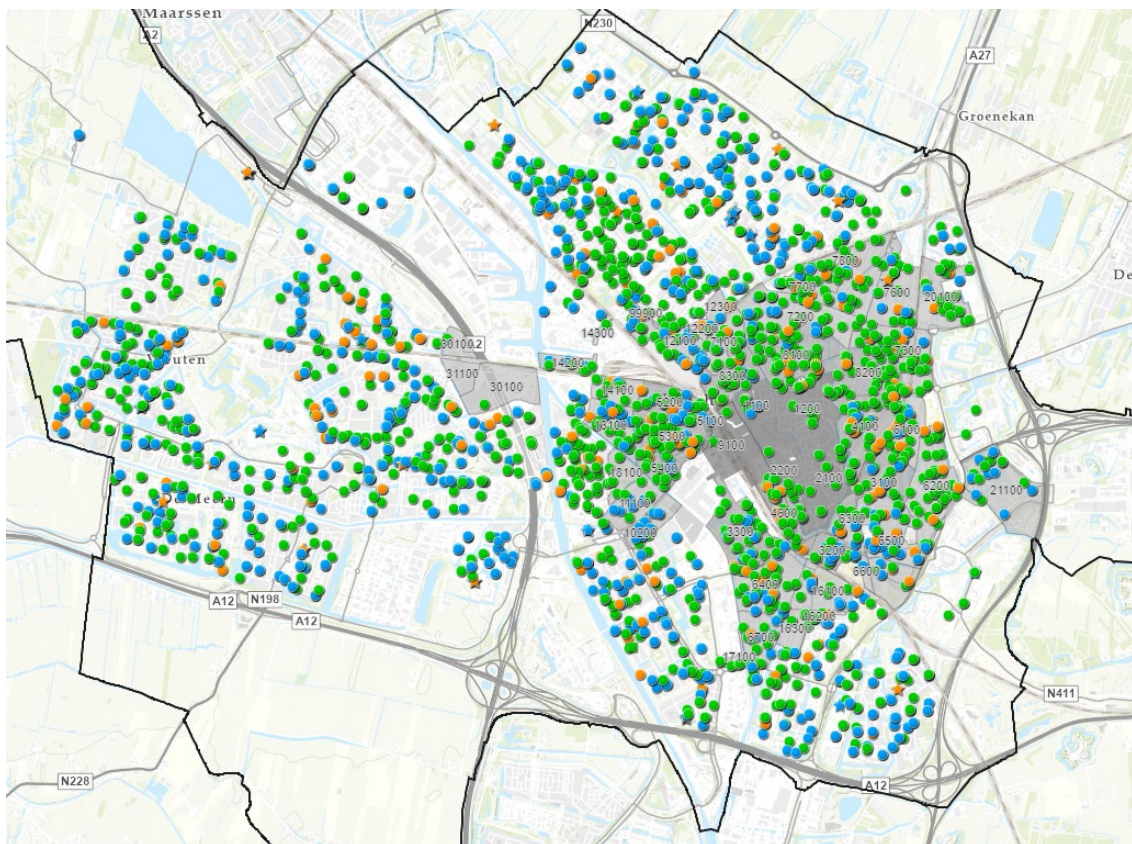
# 5.700 regular public charging points (11 kW AC)



- Charging needs passengercars, logistics/delivery services and taxi
- Meeting 90% public charging needs
- Forecast with ZE environmental zone passenger transport 2030
- Lower forecasts than before due to network effects and larger batteries
- Placement rate 20 → 30 per month
- 30.000 semi-public and private AC charging points



# AC charging network



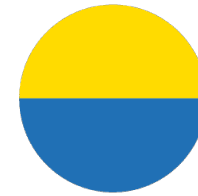
- 1.500 public AC chargers/3.000 sockets
- 2.500 pre-selected locations
- Concession (performance contract)
- Concession fee 4 cent/kWh



# Charging points operators



**TotalEnergies**



**VATTENFALL**

**LomboXnet**



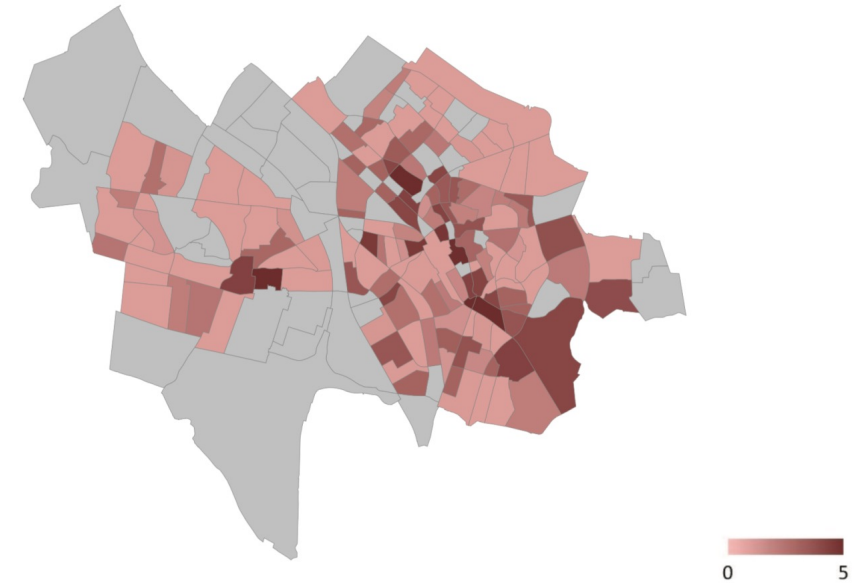
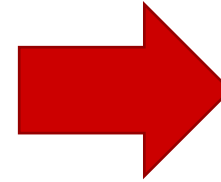
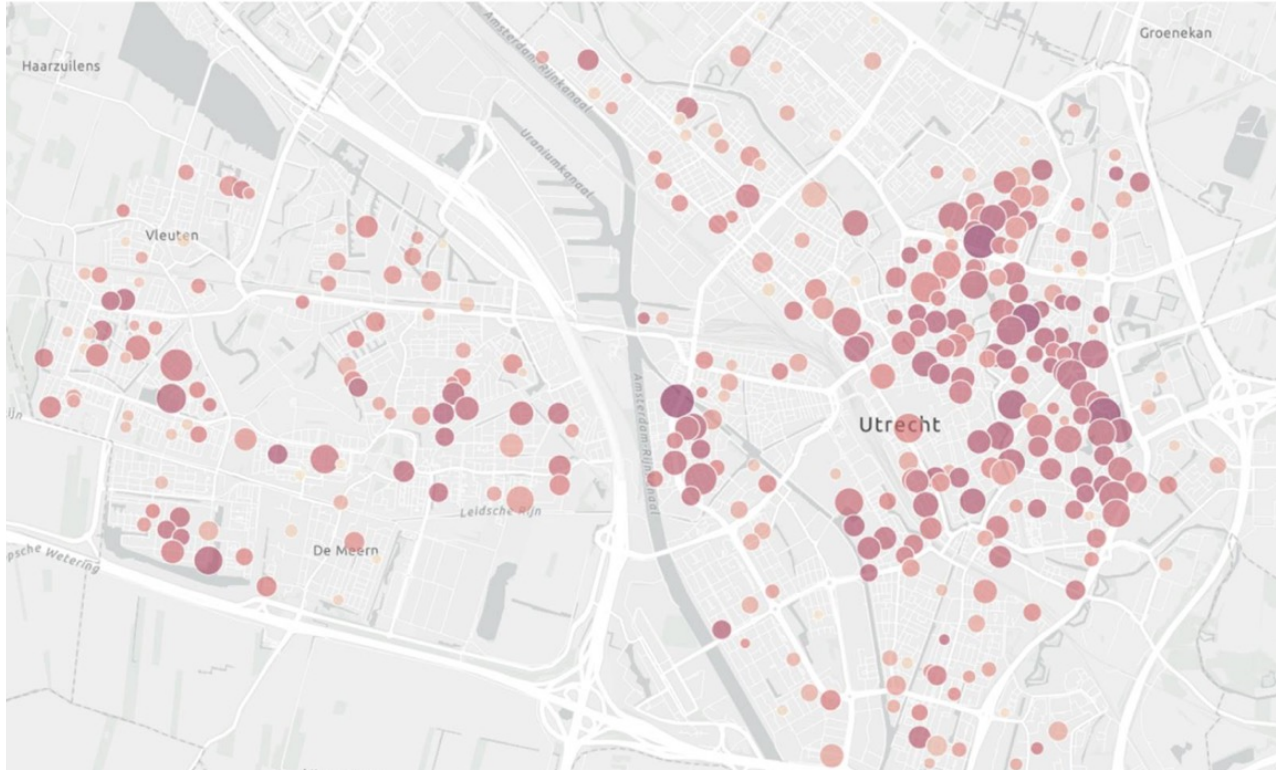
**EQUANS**

EMPOWERING TRANSITIONS



Gemeente Utrecht

# Data driven roll-out



# Always a free charging point

Charging points per neighbourhood	Maximum occupancy	Charging points available
> 6	50%	1 – 3
7 – 10	60%	3 – 4
11 – 15	70%	3 – 4
16 – 20	80%	3 – 4
21 – 35	85%	3 – 5
36 – 60	90%	4 – 6
< 61	95%	< 3



# 460 short-term parking fast chargers

► Kaart:

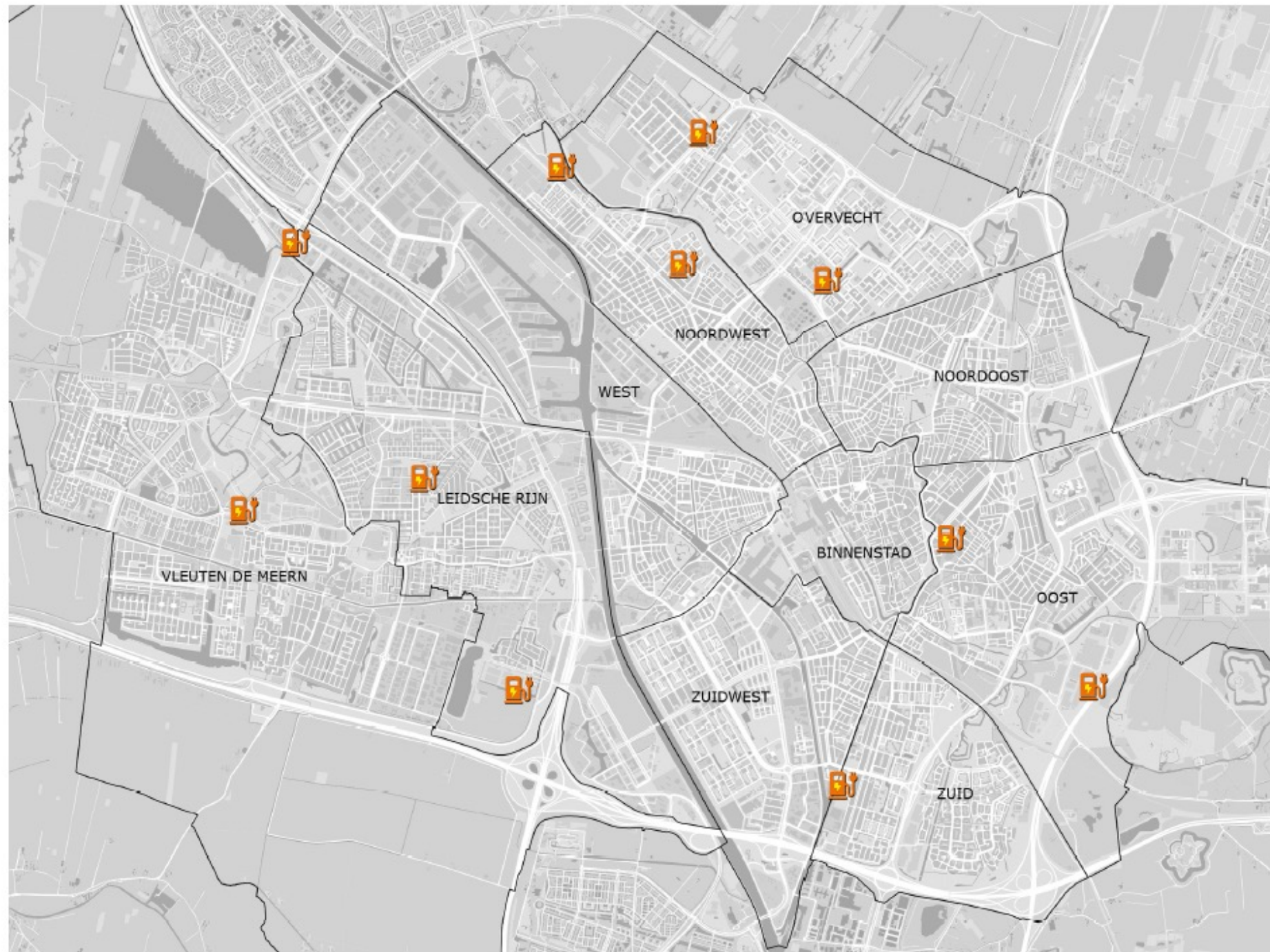
Verbeelding van het plan  
laadinfrastructuur 2030:



Personenvervoer

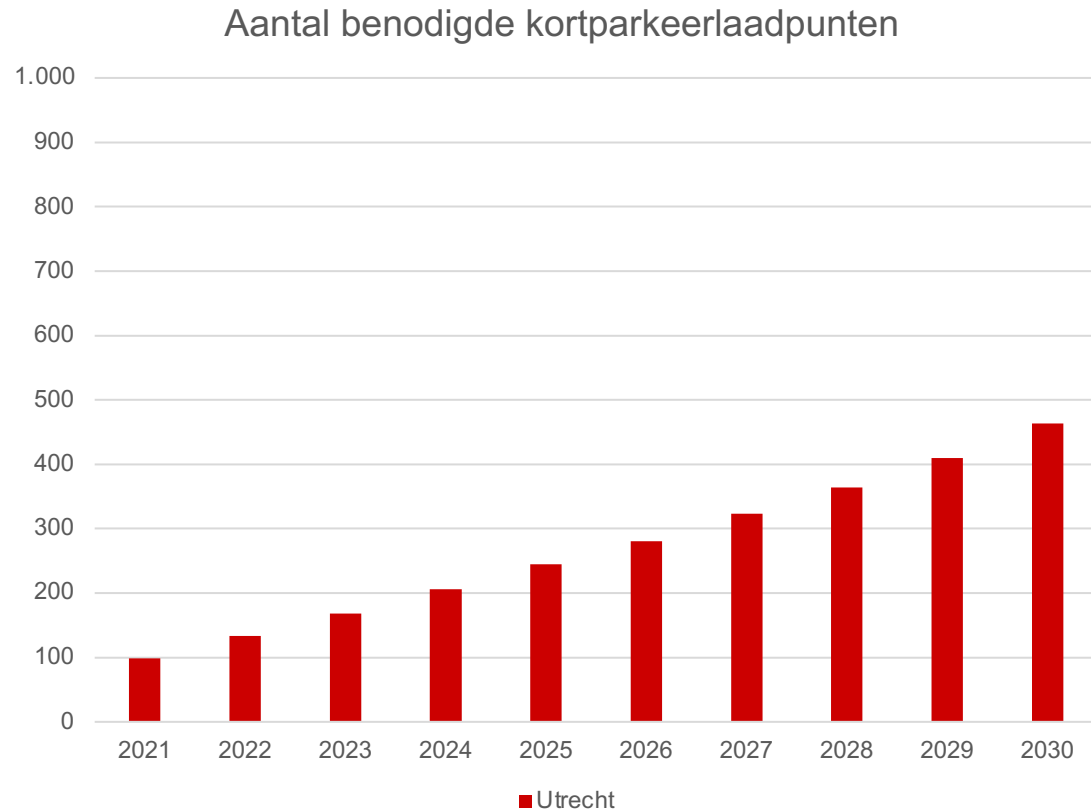


= 460 kortparkeer  
snelladers bij winkels en  
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(50-180kW)



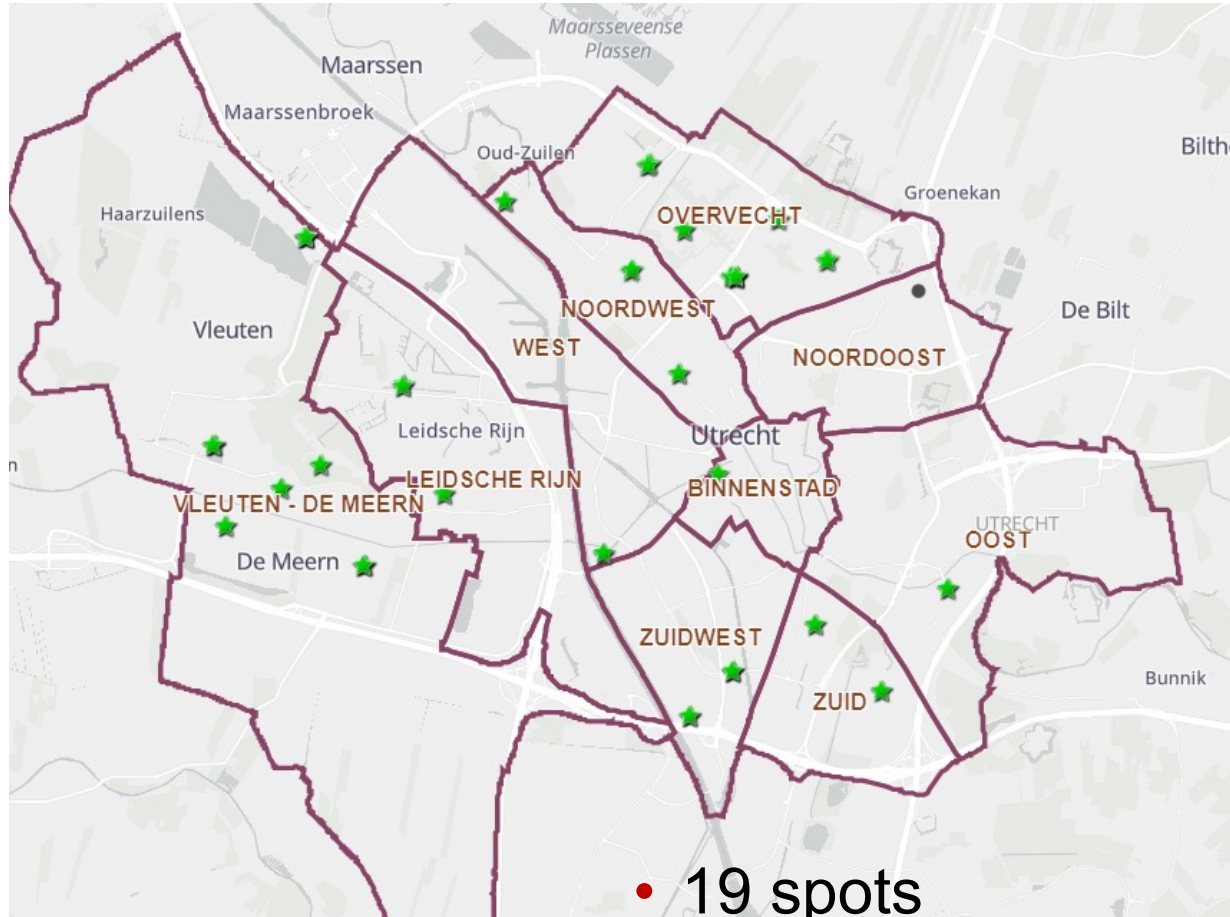


# 460 short-term fast chargers



- Shopping centres and sports facilities
- 50 to 180 kW DC chargers
- Existing concession 60 DC chargers
- Possibly add additional locations
- No inner-city fast chargers at petrol stations → new functions for locations

# Concession fast charging at shops and sports venues



- 19 spots
- 121 parking spaces
- +/- 60 fast chargers



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# 10 taxi fast chargers at railway station

► Kaart:

Verbeelding van het plan  
laadinfrastructuur 2030:



Personenvervoer



= 10 snelladers voor  
taxi's bij de bufferplaatsen



# 10 taxi fast chargers at railway station



- 180 kW taxi chargers on buffer places
- Concession model
- Other charging demand → short-term parking chargers or HPCs at petrol stations



# 60 corridor chargers along the ring road

► Kaart:

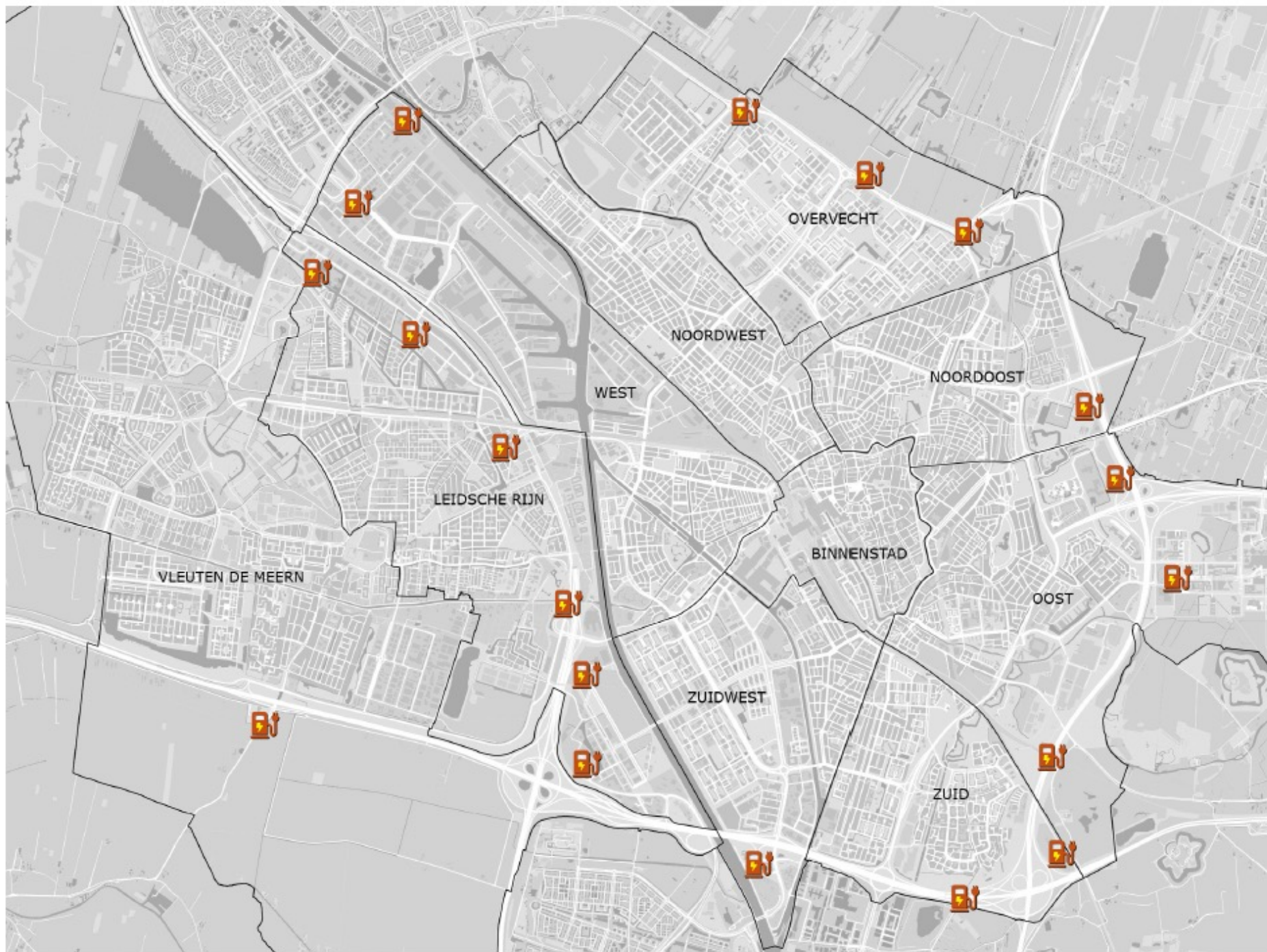
Verbeelding van het plan  
laadinfrastructuur 2030:



Personenvervoer



= 60 hoog vermogen  
stations langs de ring  
(350kW)



# 60 corridor chargers at petrol stations along the ring road (HPC > 150 kW)



- Transit locations HPC > 150 kW
- Space for approximately 30 chargers at existing petrol stations along the ring road
- Adjusting rental contracts for petrol stations
- Location study 3 to 5 additional HPC locations at exits ring road



# 330 depot chargers 60 ultra-fast chargers

## ► Kaart:

Verbeelding van het plan  
laadinfrastructuur 2030:



Logistiek



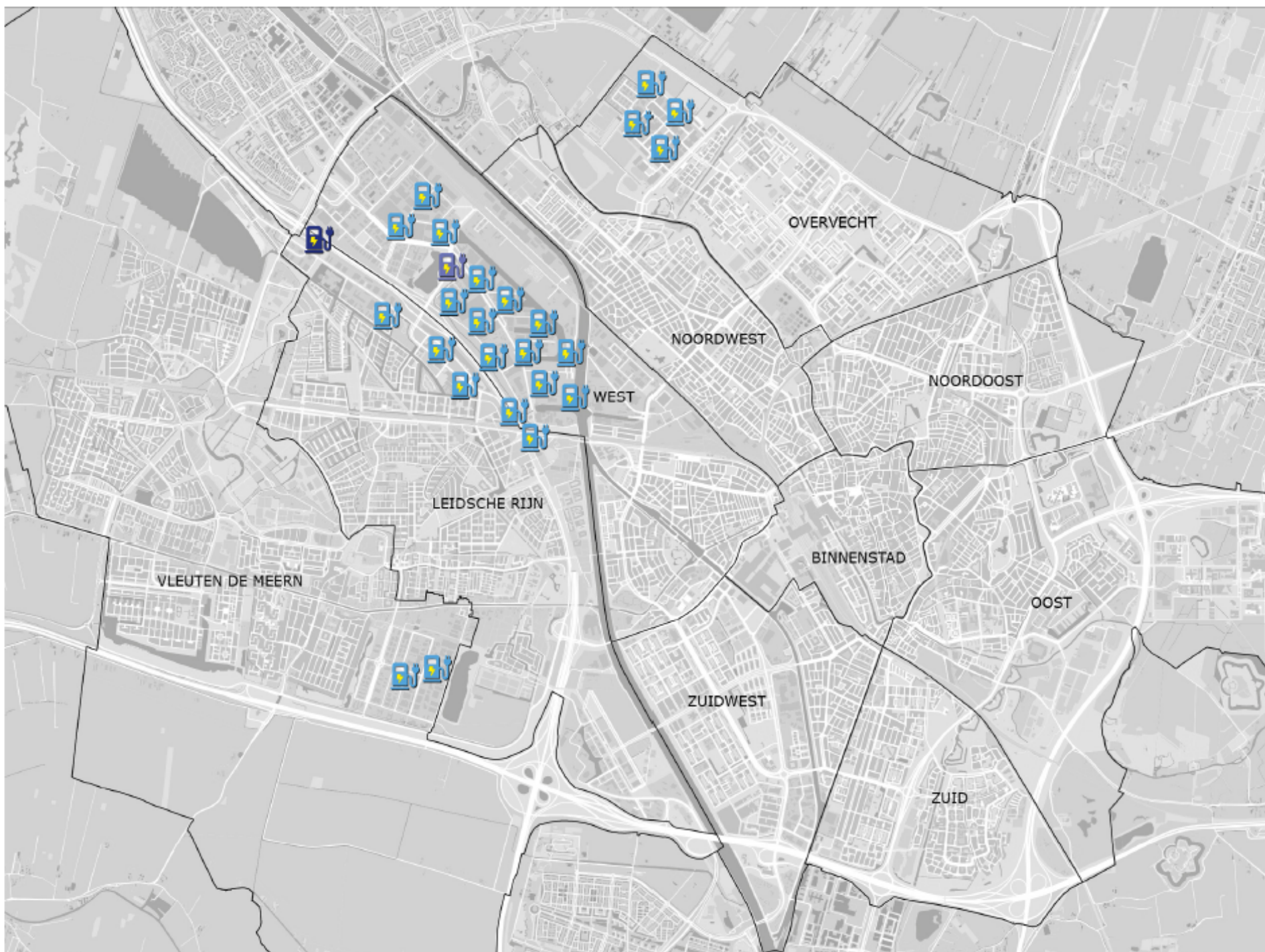
= 330 DC depotladers voor vrachtwagens (50-150kW)



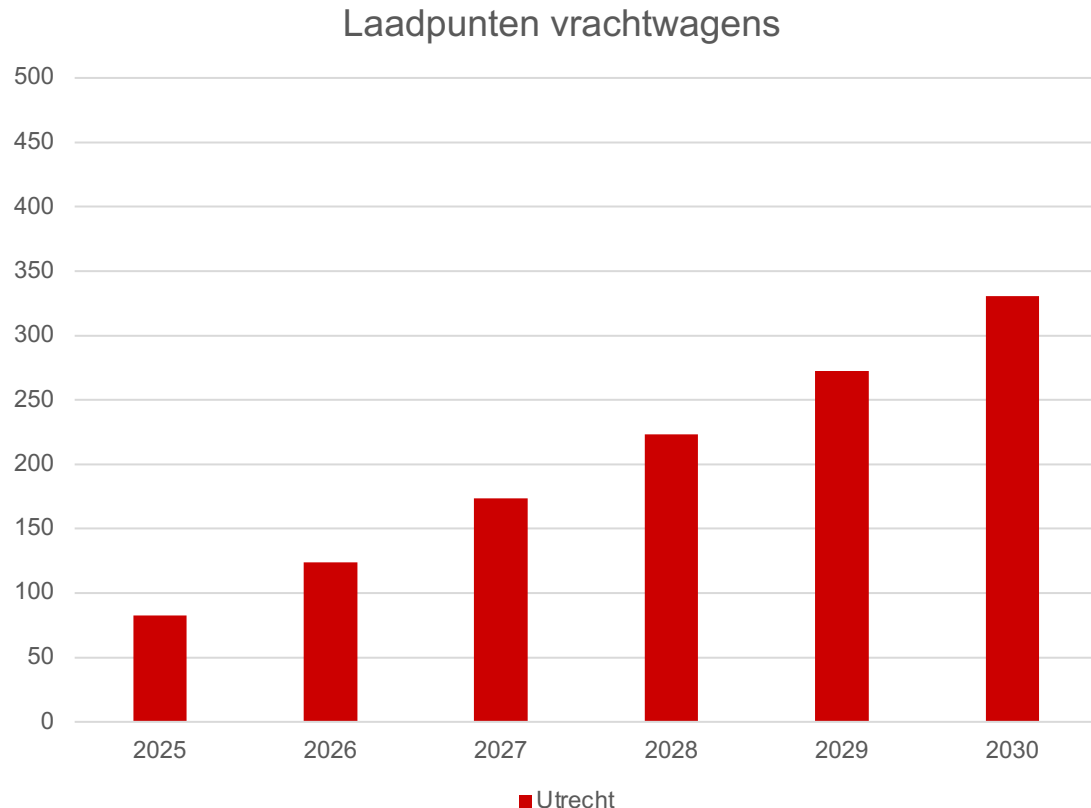
= 2-4 DC laders voor vrachtwagens bij truckparking (50-150kW)



= 58 ultrasnelladers voor vrachtwagens (500-1500kW)



# 330 depot chargers (50 -150 kW) for logistics



- ZE environmental zone 2025
- 211 depot chargers (50-150 kW DC) Lage Weide in 2030
- Private development
- Big challenge e-net
- Research ElaadNL on Lage Weide
- Opportunities for smart charging
- Concession for truck chargers parking De Wetering (A2)





# 60 ultra-fast chargers for trucks



- Top-up during the day
- Megawatt Charging System = 350 to 1,500 kW
- Public, collective or private development?



# Challenges electricity grid



- Forecast is input for grid impact analysis DSO
- 2030: 20% mid voltage stations overloaded
- Smart energy system needed
- Smart charging is requirement
- V2G has high potential

# Charging points Utrecht

	Private		Semi-Public		Public	
	2025	2030	2025	2030	2025	2030
AC Regular (11 kW)	10.758	23.096	3.872	7.586	4.618	5.737
Kortparkeer (50Short-term parking (50-180 kW)	-	-	-	-	244	464
Taxi fast chargers (180 kW)	-	-	-	-	5	10
Corridor chargers ring road (150-800 kW)	-	-	-	-	-	60
DC Depot (50-150 kW)	83	330	-	-	-	-
Ultra High Power (>800 KW)	-	-	15	58	-	-



# Next steps 3-5 years

- Policy for passenger transport and short-term parking is in order
- Concession required for taxi chargers and truck parking
- Spatial exploration of locations corridor chargers along ring road
- Major challenge for logistics depot chargers
- Explore role in MCS truck charging locations
- Include forecasts in grid impact analysis grid operator
- Cooperation on business parks to fit in charging demand





**Utrecht** Region

**AVERE E-MOBILITY CONFERENCE 2023**

26 – 27 September 2023



Gemeente Utrecht

