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Gothenburg, Sweden

Nya logistikanläggningar i Västsverige – var byggs de och varför just där?

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Warehouses: where and why?

- Some examples from cities around the world: location of warehouses before and today
- A specific investigation in Gothenburg and Västra Götaland (Jan-June 2016) including data collection and interviews

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- MetroFreight VREF Centre of Excellence

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Around the world

- Many more warehouses around large cities (Atlanta 1998-2008: +204%)
- A noticeable spatial pattern: 'logistics sprawl'
- "The spatial deconcentration of logistics facilities and distribution centres in metropolitan areas"
- Twenty case studies compared

Sao Paulo, 2015

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Twenty case studies

- Amsterdam, the Netherlands
- Atlanta, USA
- Belo Horizonte, Brazil
- Berlin, Germany
- *Study in progress*: Bogota, Colombia
- Brussels, Belgium
- Gothenburg, Sweden – metro area
- Gothenburg, Sweden - region
- *Study in progress*: London, UK
- Los Angeles, USA
- Paris, France - all warehouses
- Paris, France - parcel and express cross-dock terminals
- The Randstadt, the Netherlands
- Rotterdam, the Netherlands
- Seattle, USA
- Tokyo, Japan
- Toronto, Canada - Greater Toronto Area
- Toronto, Canada - Greater Golden Horseshoe
- *Study in progress:* Wuhan, China

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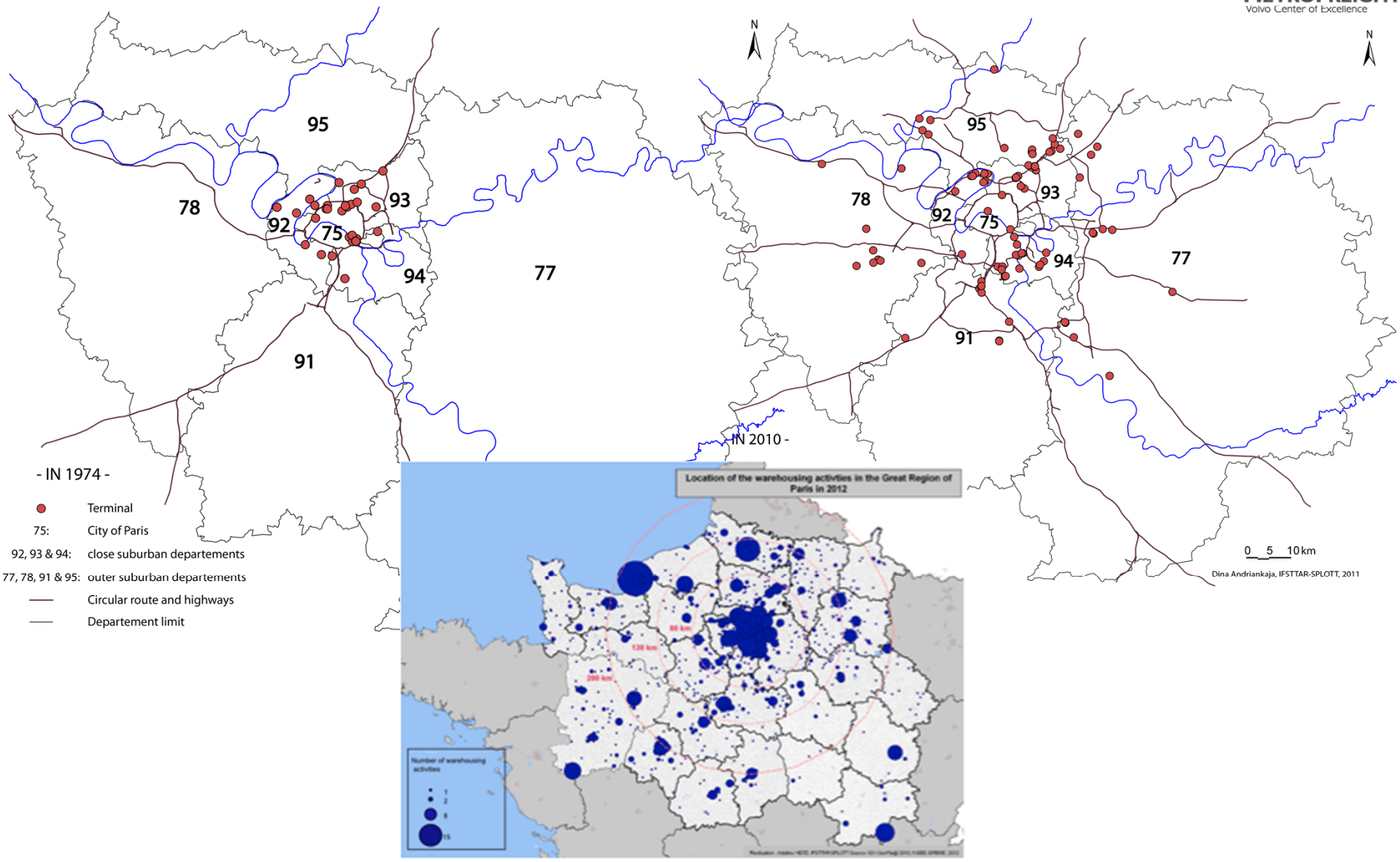
Logistics sprawl in Paris



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Main indicators

- Number of warehouses per million residents ranges from 6 (Tokyo) to 199 (Gothenburg)
- Varies with the definition of a warehouse and the accurateness of the database
- Number of warehouses per million residents has increased overtime in all case studies except Amsterdam, Randstadt and Tokyo
- Logistics sprawl has happened in all case studies except two (Amsterdam, Seattle)
- The average increase of LS indicator (increase in average distance of warehouses to their barycentre) is **0.45 km/year**
- With the highest in Toronto and L.A, and the lowest in Tokyo

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Conceptual relationships

- The increase in the number of warehouses overtime is positively related to the **role of global logistics gateway** played by an urban area
- The increase in the number of warehouses overtime is **larger in megaregions**
- The increase in the number of warehouses over time is **larger in big cities** within megaregions
- LS is positively related to the **differential in land values/rent** for logistics land uses between suburban and central areas
- LS is positively related to the **availability of large land parcels** in suburban areas
- LS is negatively related to the degree of regional **land use control**
- The degree of LS varies with the **type of warehouse** (stronger for distribution centres, weaker for parcel transport terminals)
- LS generates an increase in the number of freight veh-km within the urban region if its rate is higher than economic and residential sprawl

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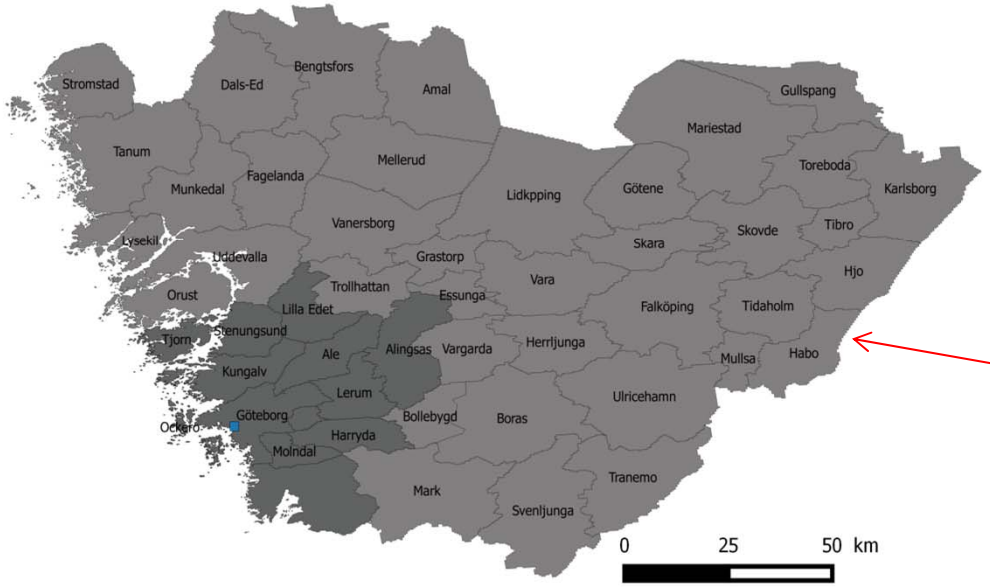
The Gothenburg metro area and Västra Götaland region



	Population	Density
Gothenburg (metro area)	973 000	264 hab/km²
Västra Götaland	1 600 000	67 hab/km²

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Data collection

Economic establishment database (SCB Statistics Sweden)
→ 612 establishments identified as logistics facilities in Västra Götaland (2014)

Satellite image observation and verification (Google image and Google Street View)
→ 382 logistics facilities

NACE code	Description
49.41	Freight transport by road
52.10	Warehousing and storage
52.21	Service activities incidental to land transportation
52.22	Service activities incidental to water transportation
52.23	Service activities incidental to air transportation
52.241	Harbour cargo handling
52.242	Other cargo handling
52.29	Other transportation support activities
53.20	Other postal and courier activities

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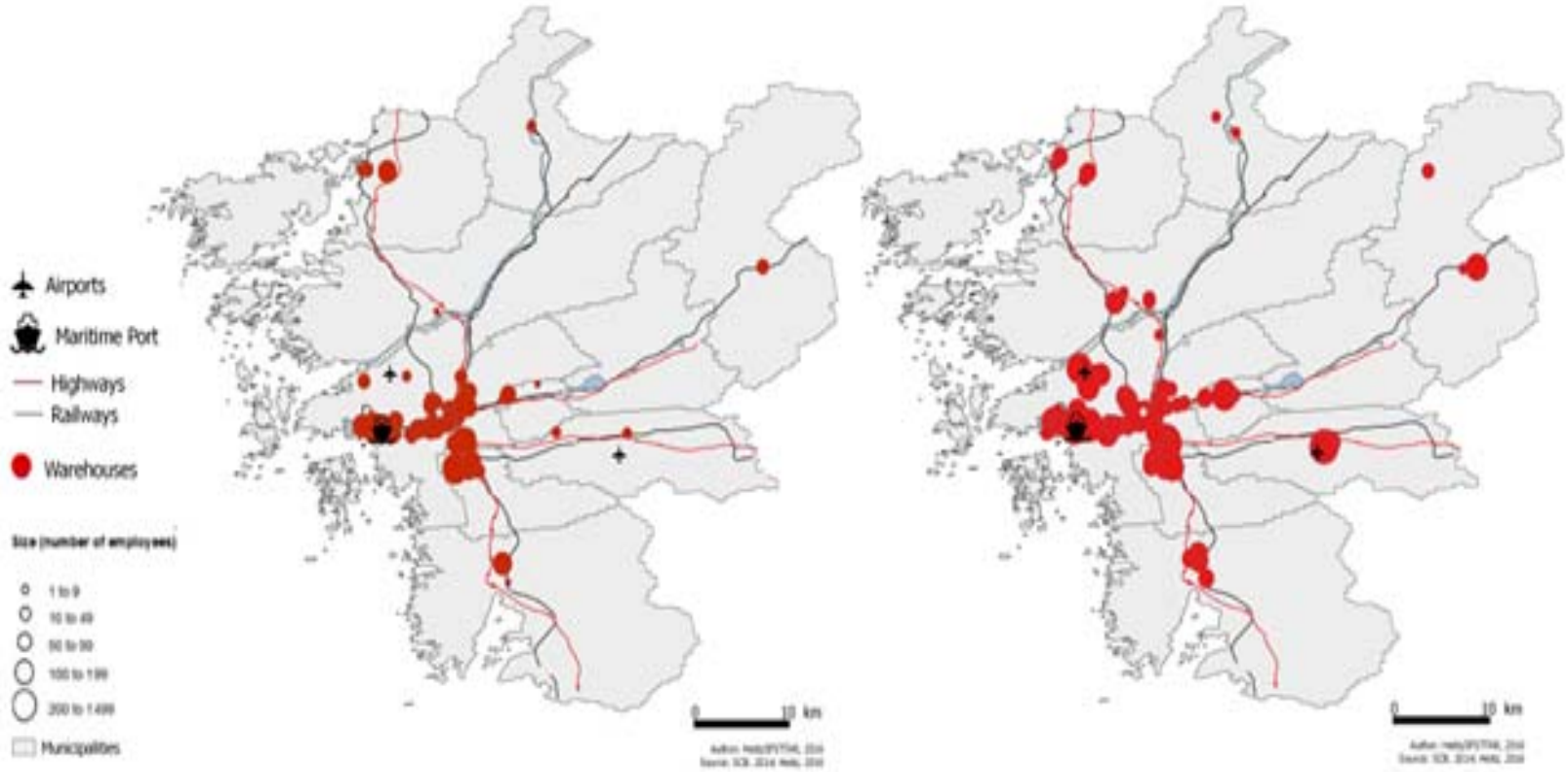
Location of warehouses at the metropolitan scale

Gothenburg metro area

2000 2014



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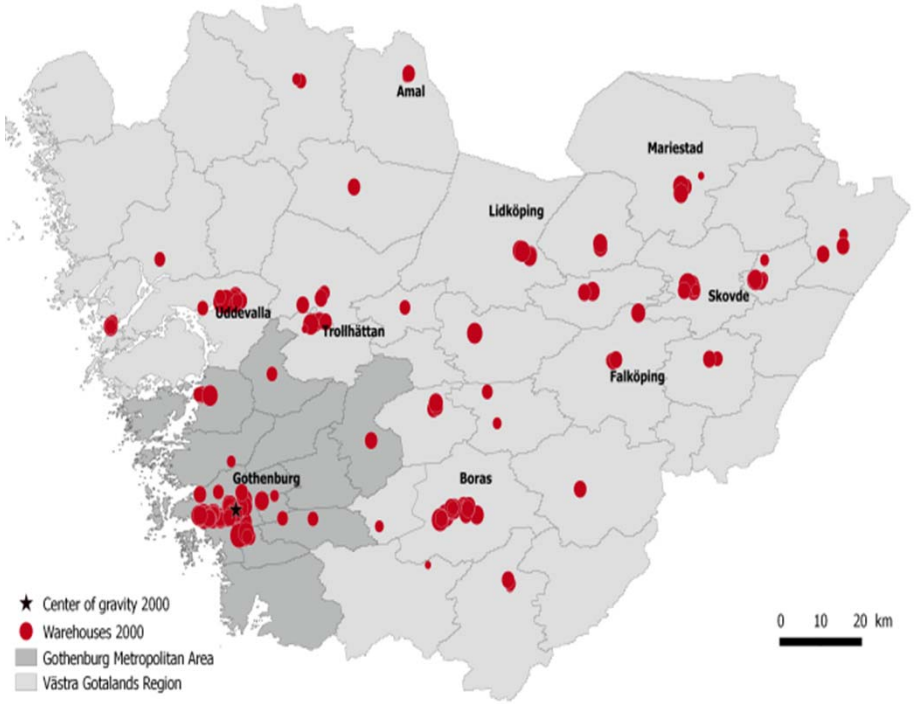
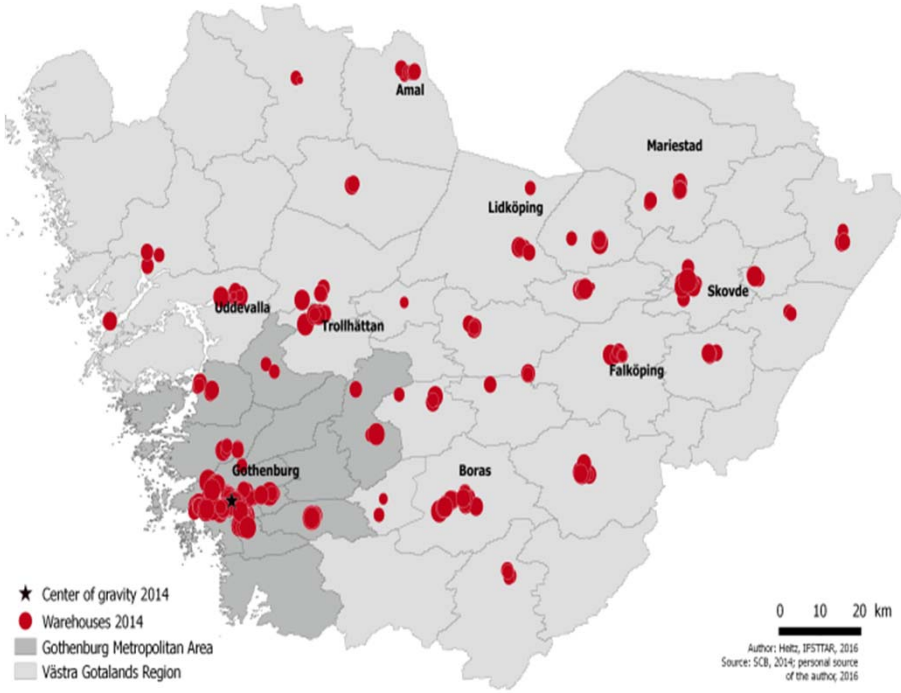
Location of warehouses at the regional scale
Västra Götaland

2000



2014



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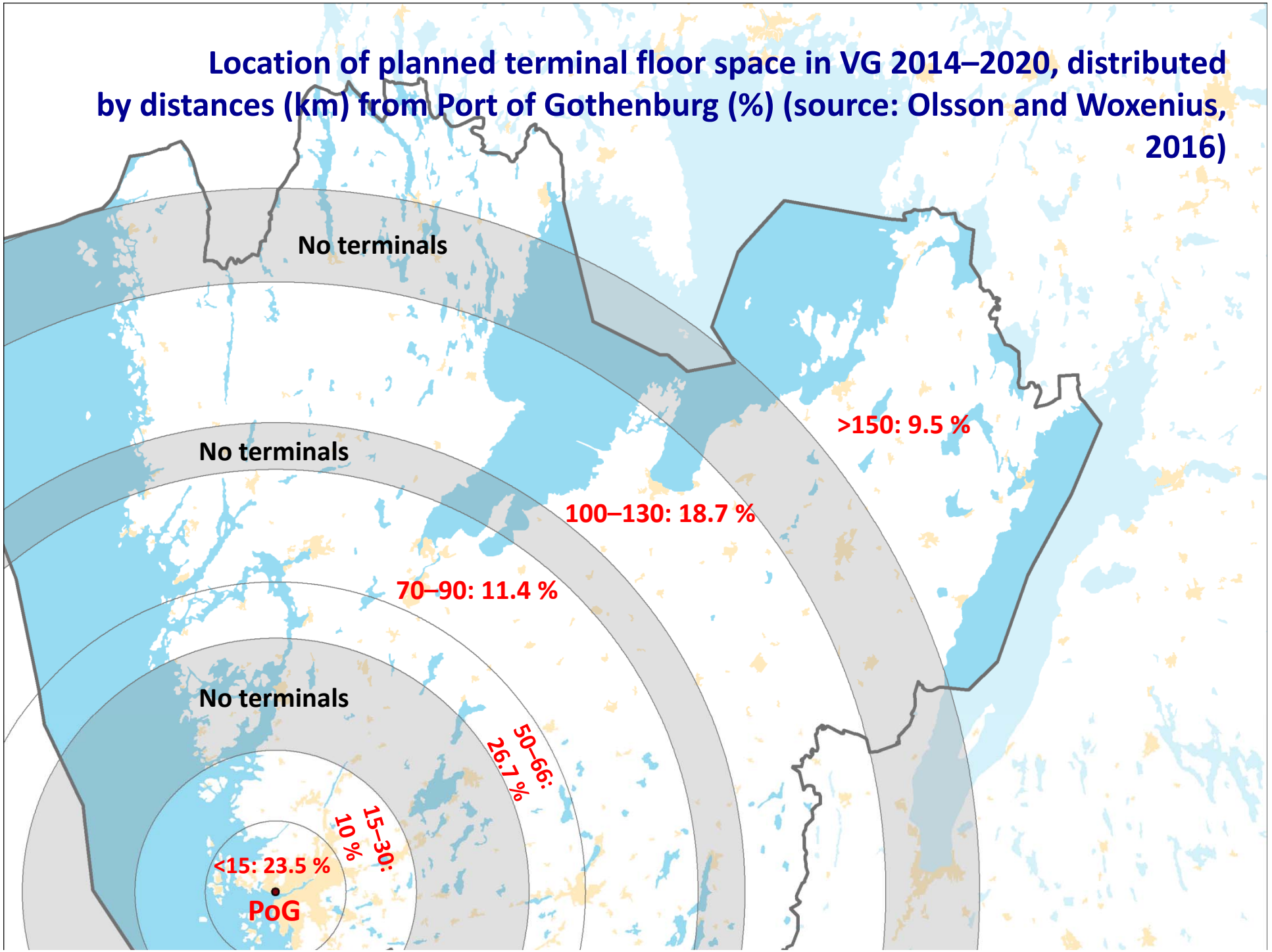
Spatial dynamics at regional and metropolitan scales

	Gothenburg metropolitan area		Västra Götaland	
Logistics indicators	2000	2014	2000	2014
Population	809,854	973,261	1,494,641	1,615,084
Area (km²)	3 695		22 752	
Density (inhab./km²)	219.2	263.5	65.69	68.58
Number of warehouses	138	205 (+48%)	263	382 (+45%)
Number of warehouses (per million people)	134.4	199.5	176	236.5
Number of warehouses (per 1000 km²)	37.4	55.5	11.5	16.7
Mean distance from the centre of gravity (km)	9.1	13.3	79.3	82
Change in mean distance (km) b/w 2000 and 2014	**4.2 (+46.2%)**		**2.7 (+3.4%)**	


Location of planned terminal floor space in VG 2014–2020, distributed by distances (km) from Port of Gothenburg (%) (source: Olsson and Woxenius, 2016)
No terminals
No terminals
No terminals
>150: 9.5 %
100–130: 18.7 %
70–90: 11.4 %
50–66: 26.7 %
15–30: 10 %
<15: 23.5 %
PoG

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Share of present and future (2014-2018) planned terminal floor space in VG distributed by distance from PoG (%) (Olsson, Woxenius, 2016)

Distance from Port of Gothenburg	Present floor space %	Planned floor space %	Change %
<15	52.0	23.5 (*whereof 100 % 0–2 km from PoG*)	-28.5
15–30	12.1	10.0	-2.1
50–66	8.7	26.7	+18.0
70–90	5.7	11.4	+5.7
100–130	12.0	18.7	+6.7
>150	9.5	9.6	+0.1
Total	**91.7**	**99.8**	

Towards 2018-2020:

- Concentration in/around Port of Gothenburg
- Decentralization further away from City of Gothenburg, beyond neighbouring municipalities
- Increased concentration:
  - to four urban areas
  - along four major trunk roads

Trend is likely to continue beyond 2020, due to short-, medium-, long-term processes

- Government funded transport infrastructure investments
- Land-use regeneration and redevelopment in City of Gothenburg
- Continued population, industry and economic concentration towards large urban areas

(Olsson, Woxenius, 2016)

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Stakeholders' perspective

We met with:

- Logistics real estate investors: Bockasjö and Prologis
- 3PL providers: Postnord Logistics and Schenker Logistics
- Transport company: DHL
- Port of Gothenburg
- BRG,Västra Götaland, City of Falköping
- Svensk Sjöfart

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Some interesting perspectives on the Swedish logistics real estate market

- Diverse: less than a third is outsourced, family owned businesses with their own location logic
- 3PLs with a relatively important role in location decisions
- "Consolidation" (closing down old warehouses for one new, larger one)
- Clear location trend towards concentration in and around largest consumer regions Gothenburg and Stockholm
  - Together with a few secondary markets ("I only have ten cities to deal with in Sweden")
- The Port of Gothenburg's initiative to promote major logistics development is a game changer (e.g. investments made 'on speculation' for the first time)
- Local planning : not enough freight expertise, low regional governance

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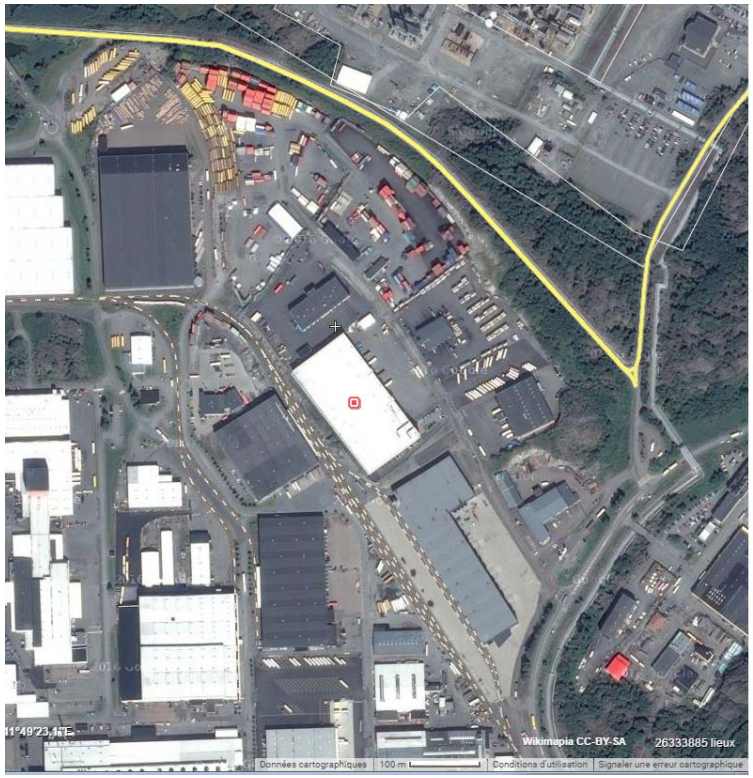
Industry perspective



Current strategy is to cluster facilities close to Gothenburg and Stockholm markets

Within these areas, facilities' rental price is a key factor for locational decisions

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Urban warehouses?

Amazon 5,000 m2 facility in Manhattan for Prime Now service

Also in 26 other US cities, in London, Birmingham, Newcastle, Manchester, Milan, Berlin, Paris and Tokyo

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PFV Seoul Integrated Freight Terminal

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A “logistics hotel” in Paris in 2017 (45,000 m2)

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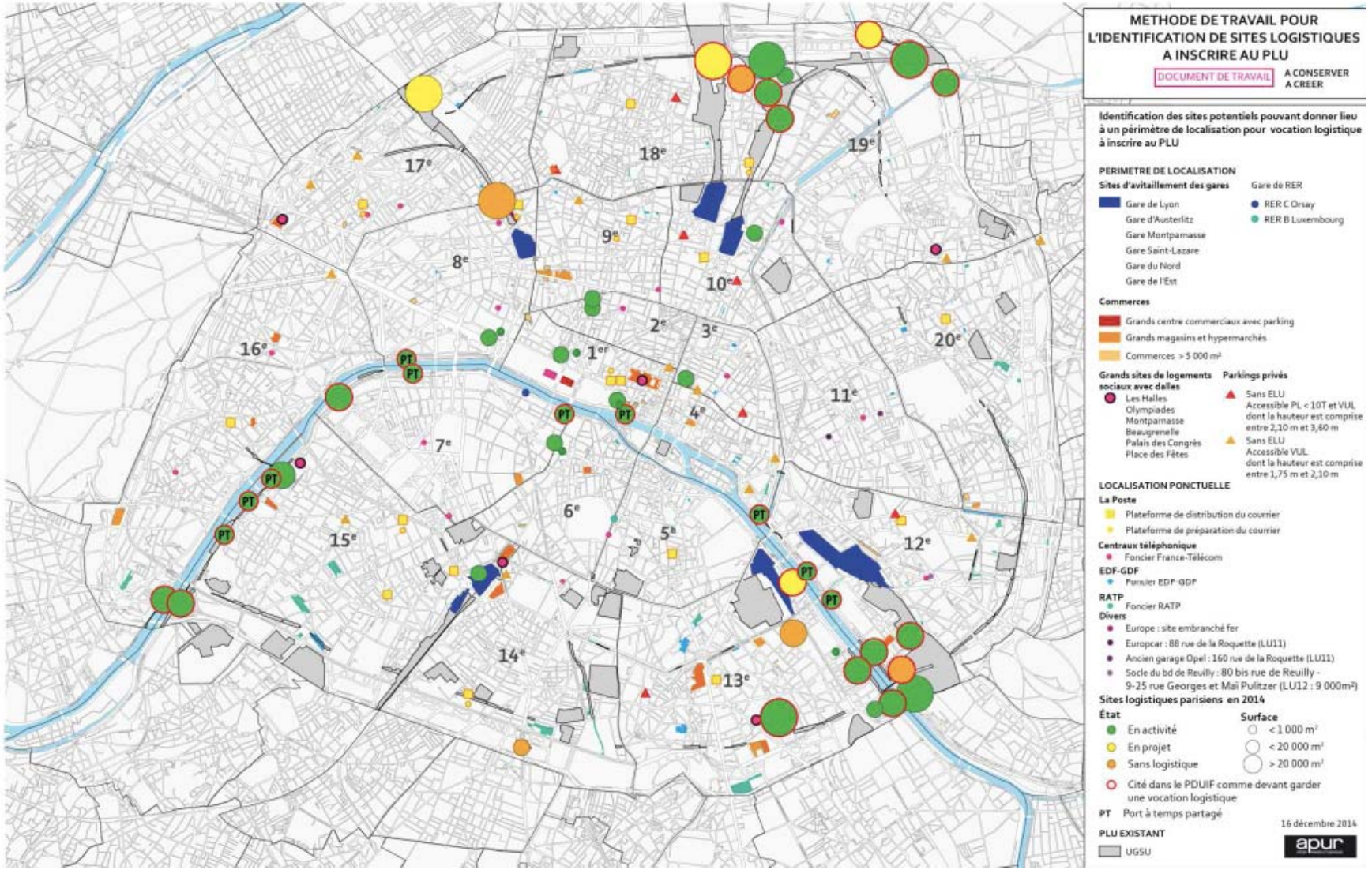
Logistics land uses in the 2016 Paris zoning ordinance



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Conclusion

- Ever increasing role of supply chains and logistics in today's economy and consumer demands: need for warehouses!
- Outsourcing of warehousing management in Sweden will increase: shift in location decision-making
- 'Metropolisation' and logistics sprawl
- Automation
- Within metro areas: more logistics urban planning, infrastructure management and logistics architecture to prepare for, need for expertise