

**Bienvenue à Maastricht**  
**Willkommen in Maastricht**  
**Welcome to Maastricht**



# Mobility policy of Maastricht UMC+:

## Learning experiences and action plan for care institutions

Maastricht, 1 June 2017

samen  
houden we  **maastricht  
bereikbaar.nl**

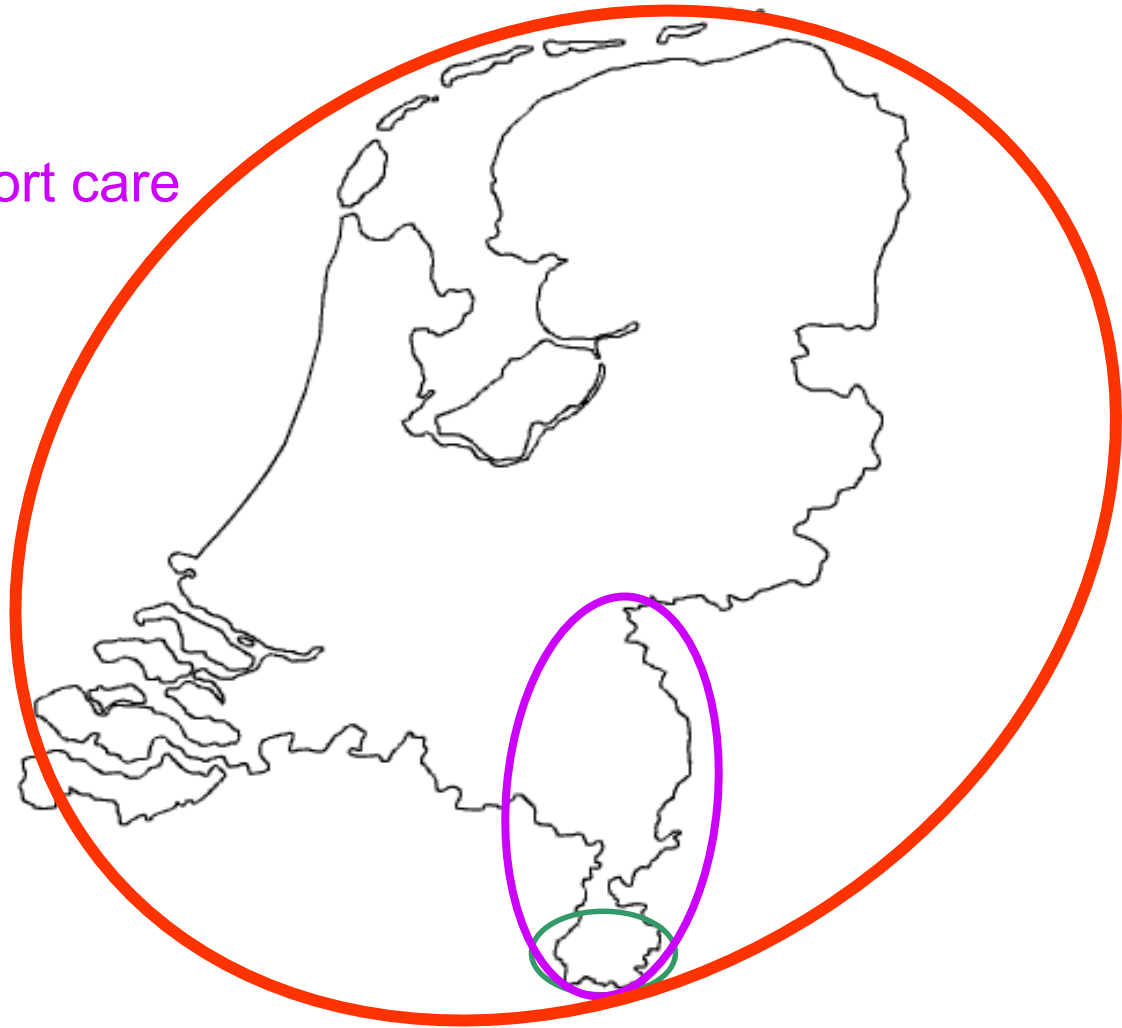


# Maastricht UMC+



# Organization - our service area

- Regional function
- Specialized and last resort care
- Top referral care



# Organization - our key figures

Key figures	End of 2015
Beds	715
Operating theatres	26
Admissions	27,537
Outpatient treatments	21,801
Average stay	7.1 days
Visits to outpatient clinic (excl. A&E)	435,168
Emergency patients	27,774
MUMC+ employees	7,236 (= 5,920 FTE)
Total enrolled students	4,856
New students	1,713
Awards of PhDs	230
Academic publications	2,300
On-campus companies	57

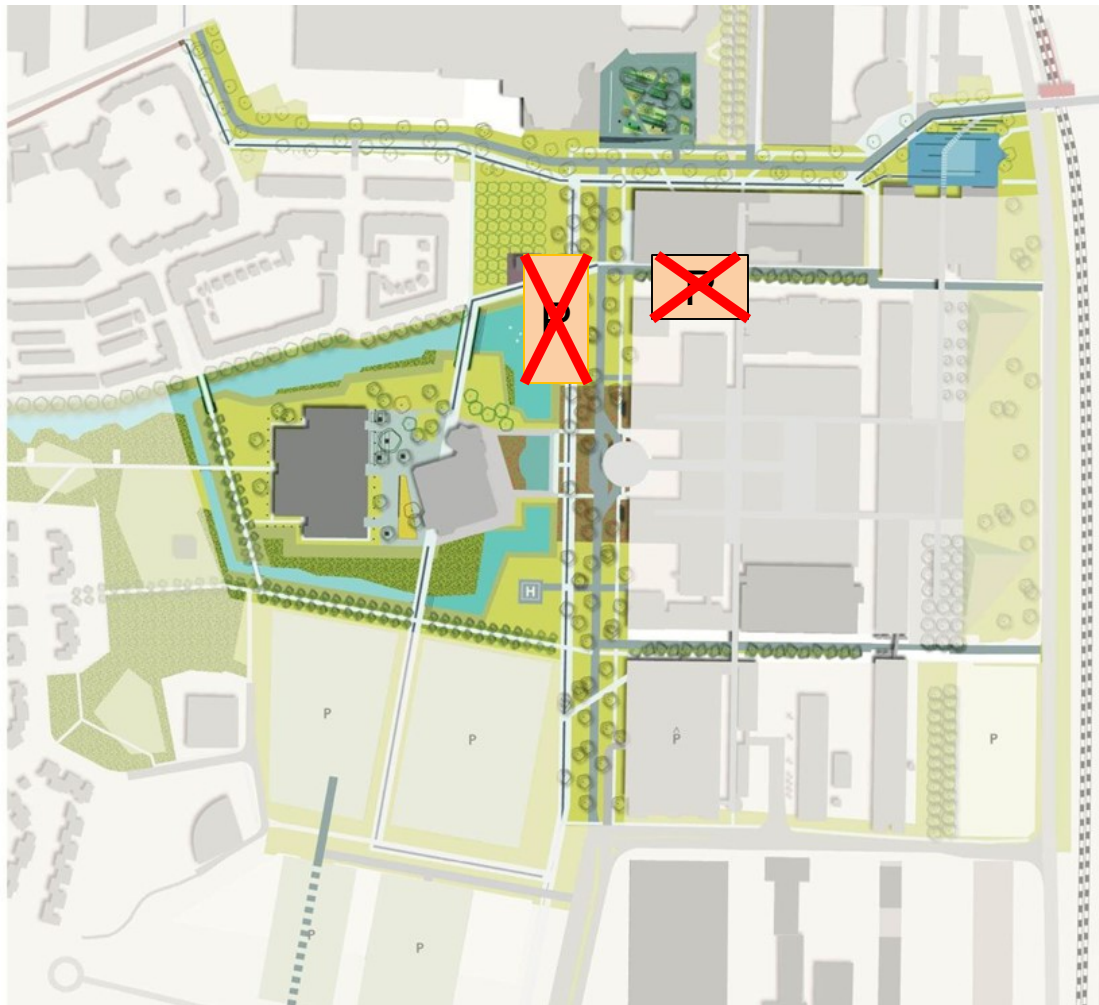


# Area Development

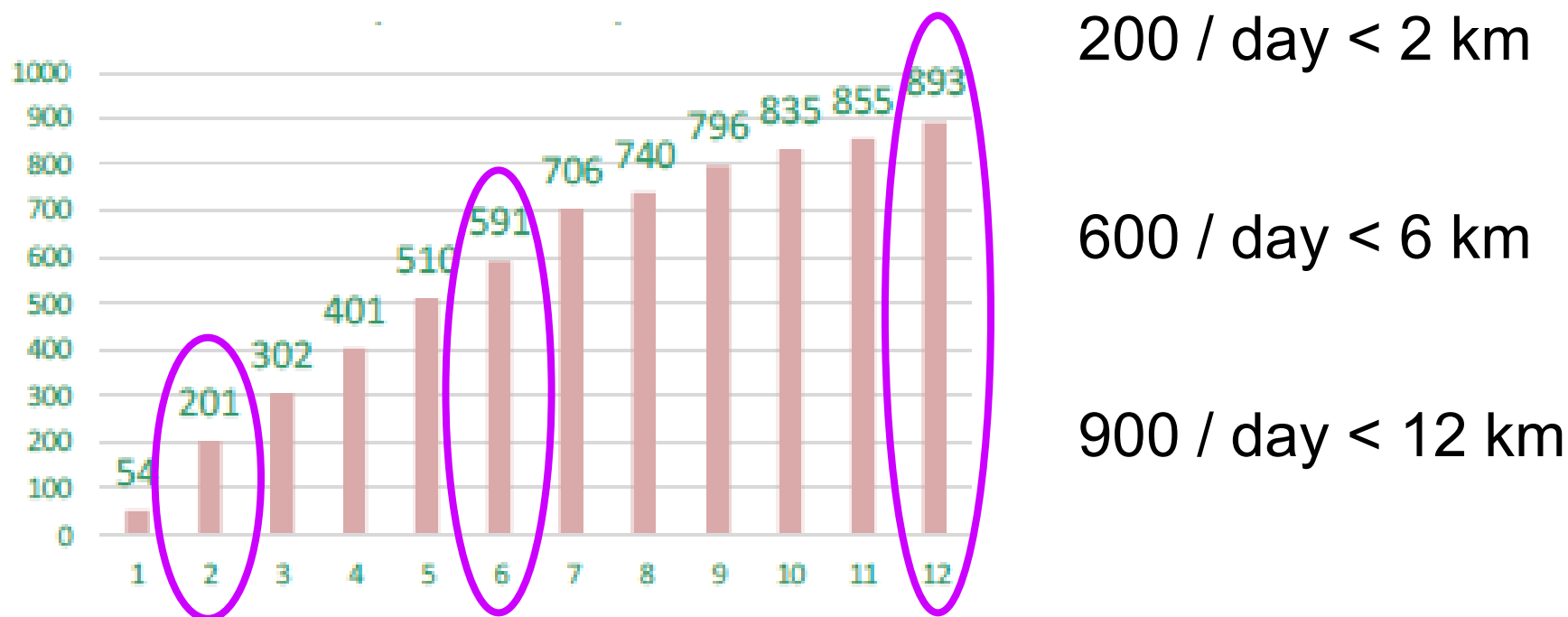
## Brightlands Maastricht Health Campus



# 450 parking spaces (25%) to be removed



# Walking and cycling/e-bike as options for daily commute - analysis

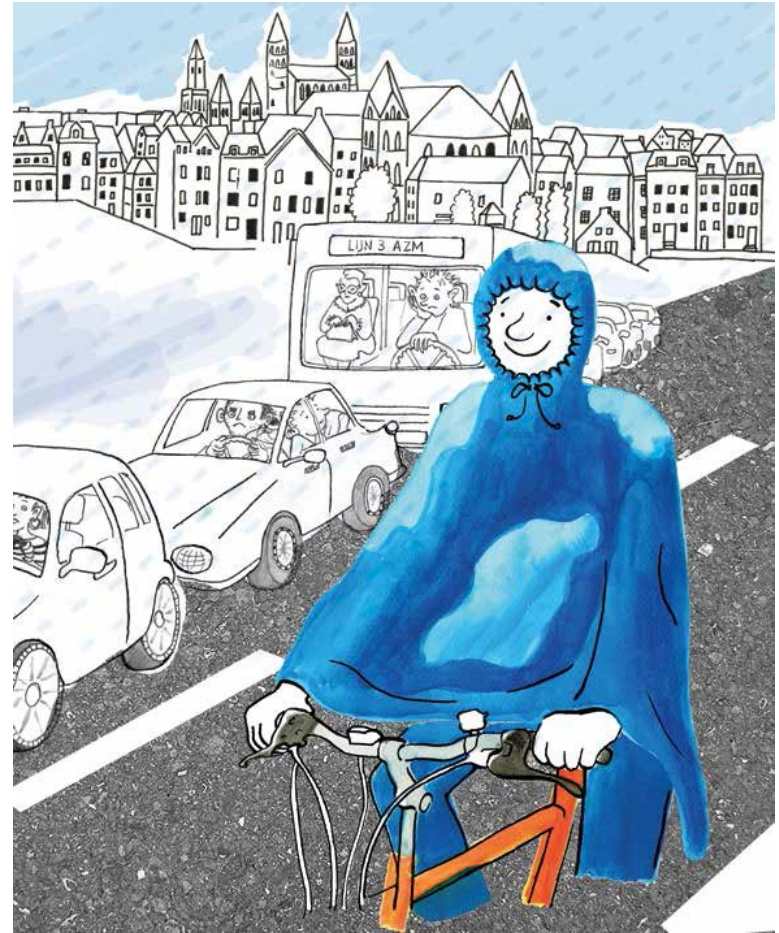


Parking transactions and commuting distance (n/day, average, cum.) (2014)



# Basic principle: preferably by bike, and by car if necessary

- Combination of 'sweet and sour' measures
- Fines for undesirable behaviour
- Rewards for desirable behaviour
- Scalable system
- Focus on bikes/e-bikes



# Demand Management:

## Adjust parameters to influence behaviour



- Parking fees: permits plus daily rates
- Differentiation on basis of commuting distance
- Differentiation between peak times/peak days and other times
- Cycling reward on basis of commuting distance


# Communication and feedback on corporate and individual levels

Reiswijzer  
Minder parkeerruimte, winst of verlies?

Vertalen Voorleeshulp Print

Actueel · Fiets · OV · Auto · Slim werken · Beleid · Zoeken

## Bekijk je reisgedrag



Maastricht UMC+

**Reparatieservice**  
Korting  
Fietsrouteplanner

**Koop nu een e-bike of fiets met korting!**

**Nieuws**  
Facebook

Maastricht Bereikbaar op Facebook

29 maart 2016  
**Weekendafsluiting A2 en A79**  
In april en mei krijgen de snelwegen ten noorden van Maastricht nieuw asfalt. De A2 richting richting Eindhoven en A79 richting Heerlen zijn doorvoor allebei een volledig weekend afgesloten ter hoogte...

Nieuws »

## Fietsbeloningen

Onderstaande tabellen tonen de totale vergoedingen voor het naar het werk komen op de fiets en de registraties per dag in de geselecteerde maand.

Pasnummer: 100004, Woon werk verkeer: 6.7 Km

< [Eerder](#) 03-2016 [Later](#) >

Datum	Tijd	Dag	Poort	Vergoedingen
22/03/16	07:30:00	di	850	€ 1,00
21/03/16	07:28:40	ma	850	€ 1,00
18/03/16	08:11:10	vr	850	€ 1,00
17/03/16	19:36:38	do	850	€ 1,00
11/03/16	17:18:26	vr	850	€ 1,00
10/03/16	16:00:14	do	850	€ 1,00
08/03/16	07:33:16	di	850	€ 1,00
07/03/16	08:07:18	ma	850	€ 1,00
04/03/16	07:53:58	vr	850	€ 1,00
03/03/16	17:34:54	do	850	€ 1,00
01/03/16	07:26:24	di	850	€ 1,00
Totaal				€ 11,00



# The impact of paid parking and bicycle subsidies on employees' parking demand

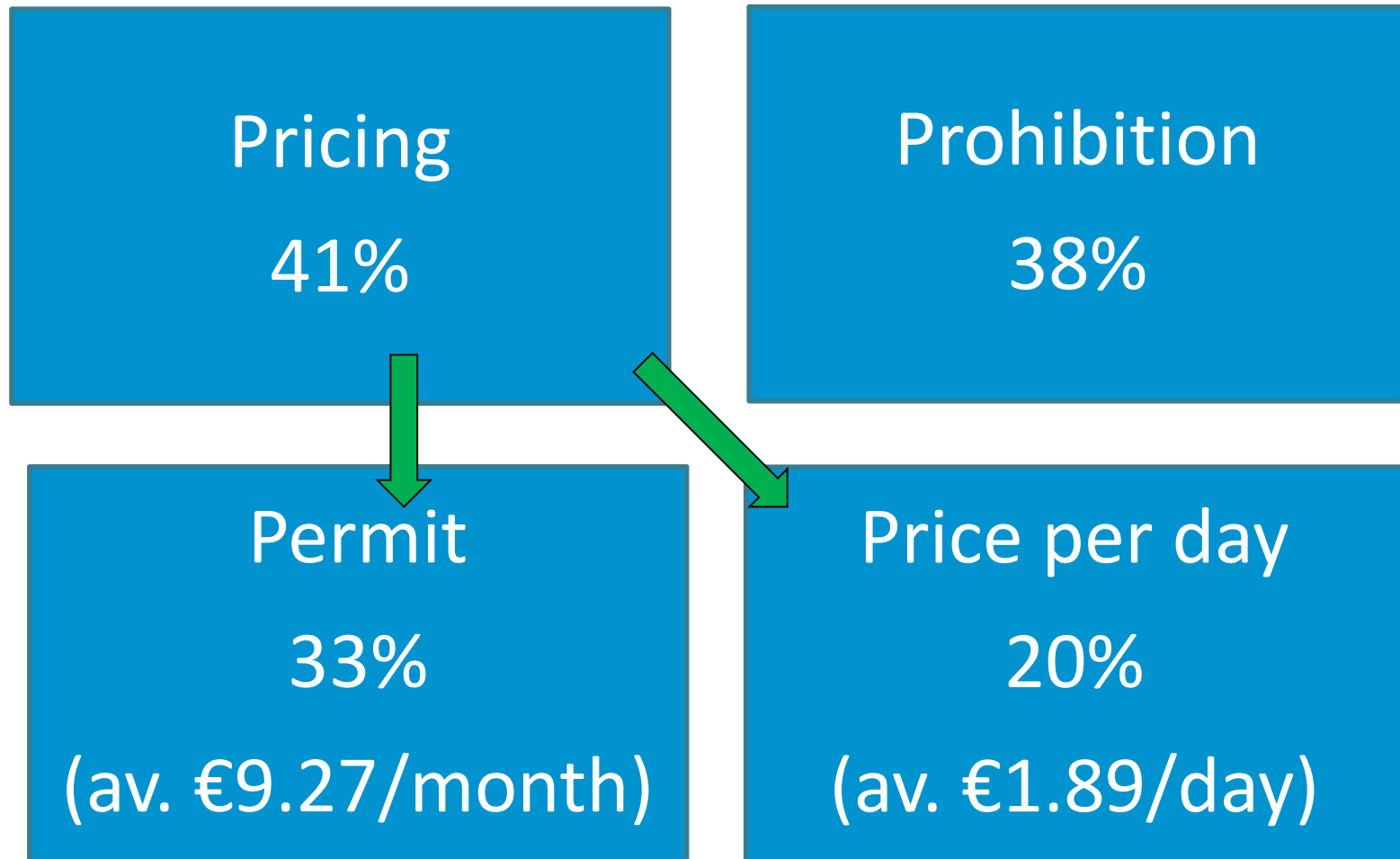
Prof. Dr Jos van Ommeren

- Professor of Urban Economics, Dept. of Spatial Economics, VU University Amsterdam

Jesper de Groote

- Researcher, Dept. of Spatial Economics, VU University Amsterdam

# Benchmark for hospital parking policies - options



(source: benchmark, [www.mobiliteit.nu](http://www.mobiliteit.nu))

# The evaluation: 2015-2016-2017

## Dataset:

- Parking activities and cycling activities (journeys)
- 2.7 million individual activities

## The evaluation:

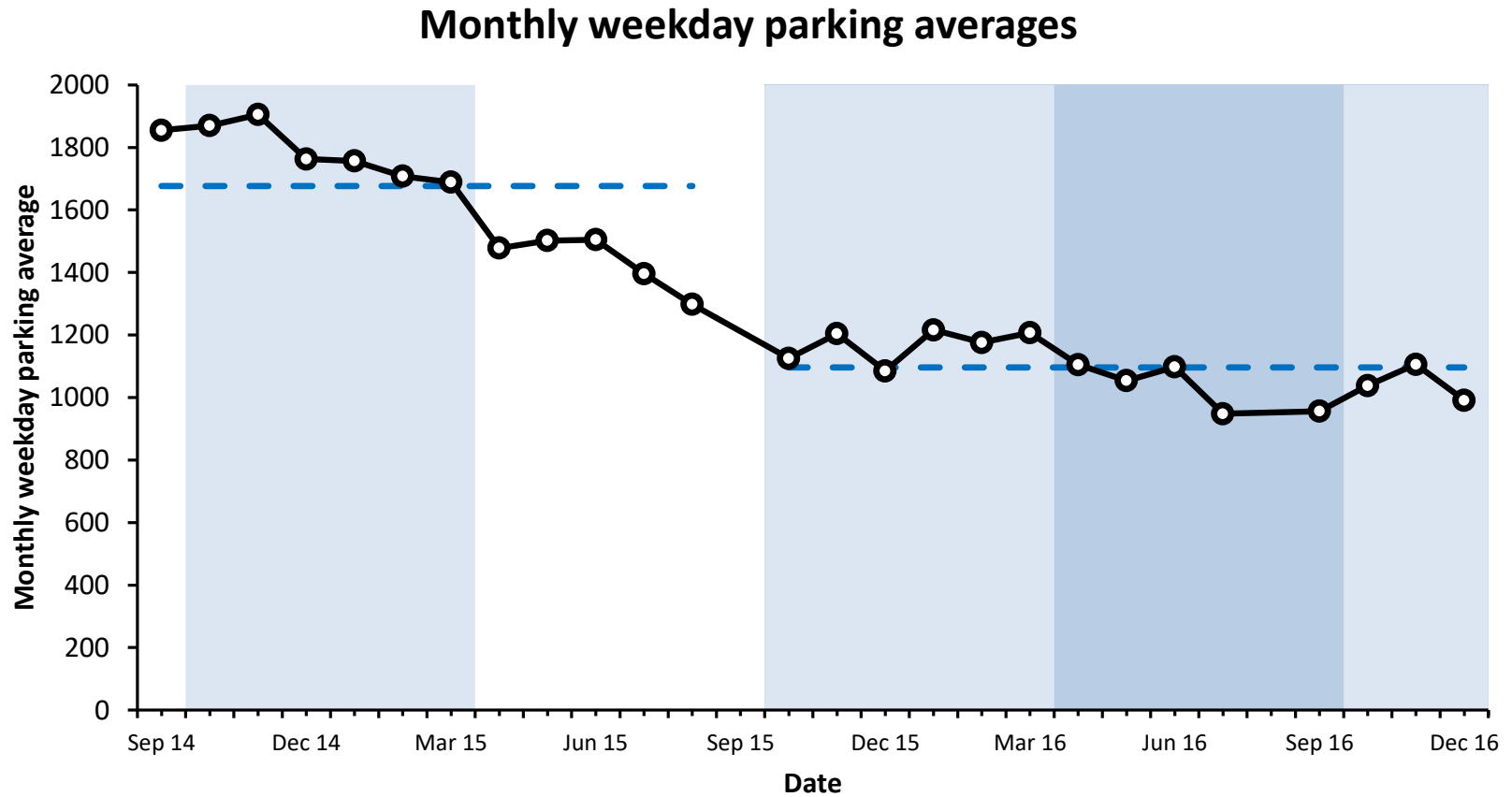
- Propensity to use car and to park
- Changes due to new policy
- Converted to number of employees



# Research Question

- What's the influence of paid parking and bicycle subsidies on parking demand?
- Policy change Maastricht Hospital September 2015:
  - Parking tariff *increase* (e.g. by € 2.25 for commuting distance less than 2 km)
  - Bicycle subsidy (at least € 0.50 in winter months)
- Used data:
  - Employee data (2016)
  - Parking data (September 2014 – end of 2016)
  - Weather data (September 2014 – end of 2016)

# Parking activities: suggestive evidence 35% decrease since October 2014



# Methodology

- Linear regressions with month, day of the week, and weather controls
- 5370 workers that have parked at least once during observation period
- Aggregate analysis:
  - Number of workers parking per day
- Micro data analysis
  - Uses commuting distance to calculate individual tariff increases
  - Unknown commuting distance for some workers: we assume a distance distribution
  - With worker fixed effects .



# Parking policy

- Aggregate analysis:
  - 24-27% reduction on peak days
  - 20% reduction on Fridays
  - About 400 fewer parked cars per day

# Parking policy

- Micro analysis (tentative results):
  - Tariff increase strongly reduces parking demand
  - €2.25 increase (0-2 km): 15-25% lower parking probability
  - €1.25 increase (2-5 km): 12% lower (daily) parking probability
  - €0.75 increase (5-7 km): 8% lower (daily) parking probability
  - €0.75 increase (7 + km): 2-5% lower (daily) parking probability

# Bicycle subsidy results

- Micro-analysis (tentative results )
- In winter months (October to March) only
- Larger decrease of parking usage in winter months after bicycle subsidy introduction
  - This implies that bicycle subsidy is effective
  - Parking usage is reduced by about 200 cars per day
  - Does not depend on rain

# Conclusions

- There are about 400 fewer parked cars during peak days in the new parking régime
- Bicycle subsidy reduces parking usage by about 200 cars per day during winter months
- The effect of bicycle subsidy is unaffected by rainfall

# MUMC+: Tips for steps to be taken

1. Strategic targets => MANAGEMENT
2. Desired behaviour => FACILITIES DEPT.
3. Behaviour: attractive & transparent => HR DEPT.
4. Enabling online tools => COMM. DEPT., ICT DEPT.



# MUMC+: Tips for the approach to the project

- Multidisciplinary working group
- Closely involving employees
- Don't prohibit; entice
- Focus on the peak times
- Scalable and future-proof system

# Contact information

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