

WASTE MANAGEMENT IN PARTY AREAS - INVESTIGATING LITTER BEHAVIOR

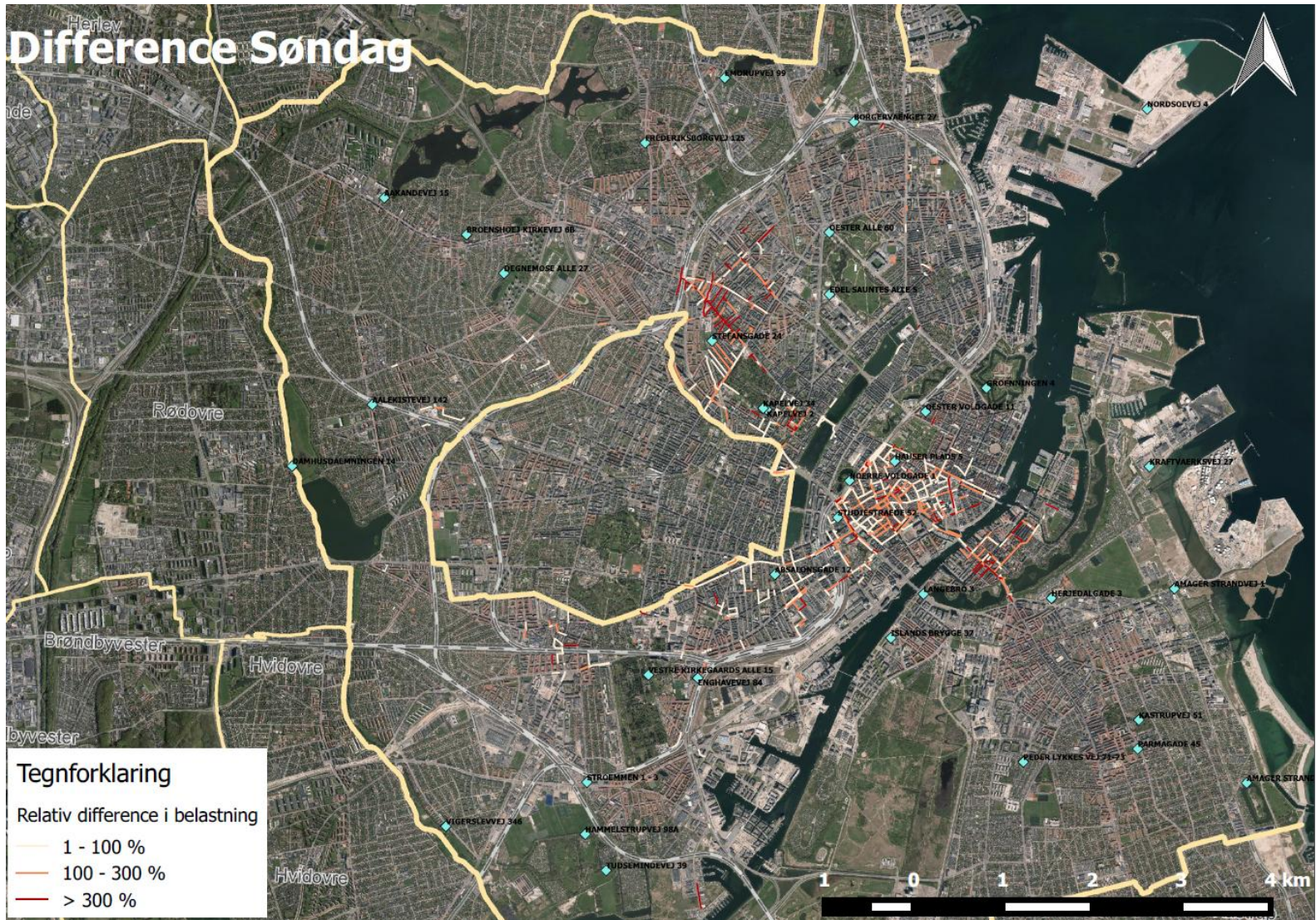


KIRA THUME
CITY OPERATIONS, CITY OF COPENHAGEN

Urban Waste - Mutual Learning Open Event
Waste Management Planning
01.06.2017 - Copenhagen

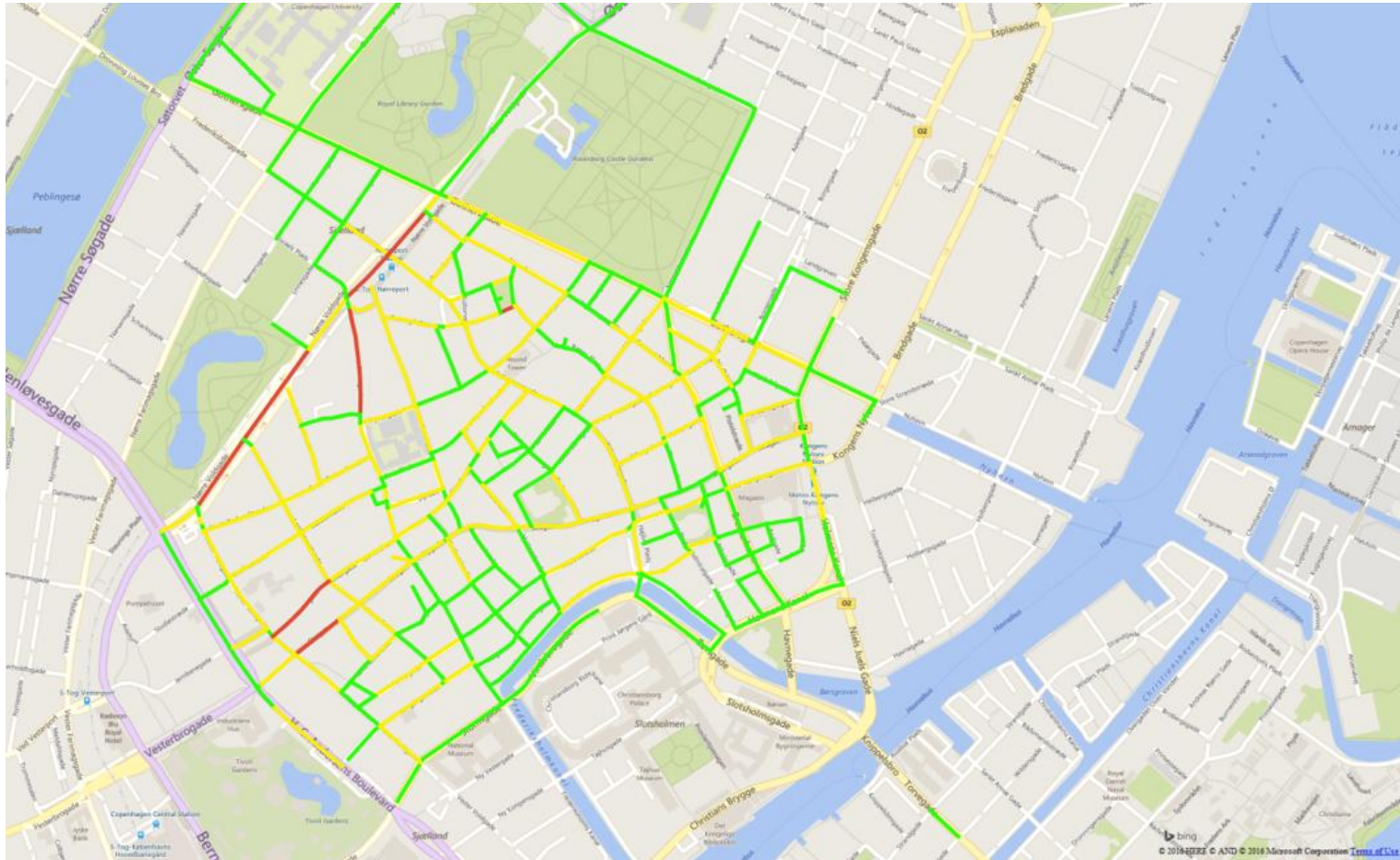


// PARTY AREAS IN COPENHAGEN - FROM GPS DATA



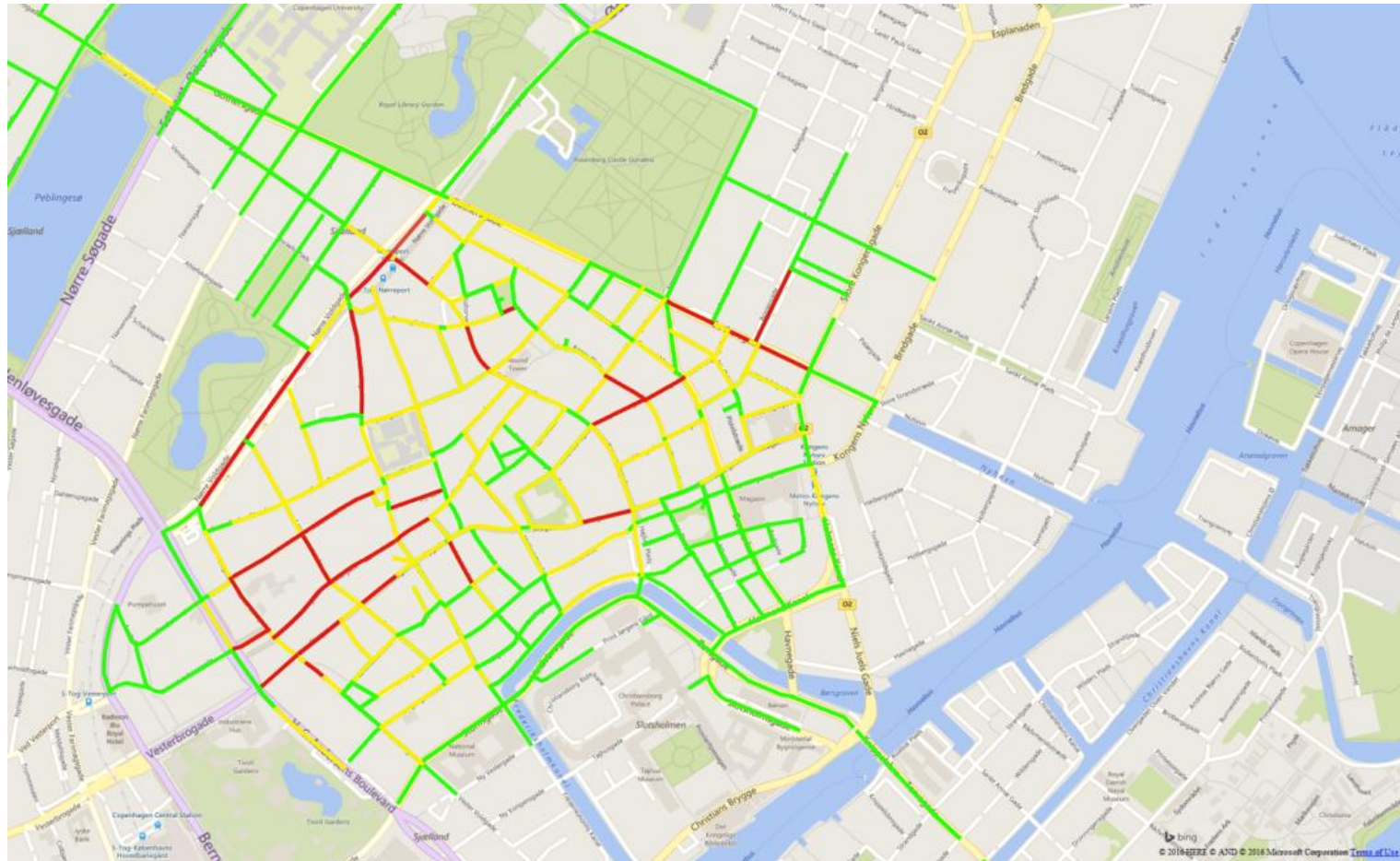


// PARTY AREAS IN COPENHAGEN - FROM GPS DATA

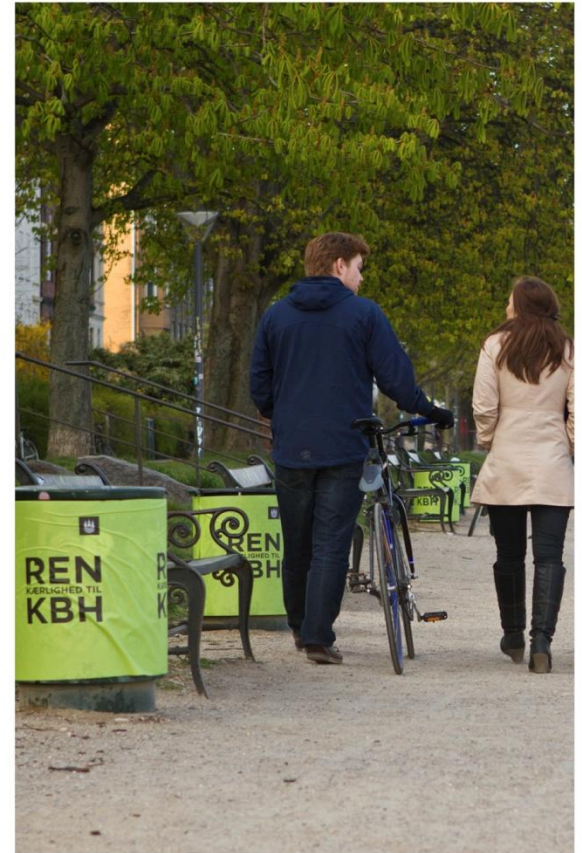




// PARTY AREAS IN COPENHAGEN - FROM GPS DATA



// NUDGING - MAKING IT EASY TO DO THE RIGHT THING



// BEHAVIORAL DESIGN APPROACH





// LITTERING IN THE NIGHT LIFE

**EVENING
AT 10 PM**



**MORNING
AT 6 AM**



// THE BEHAVIOR ANALYSES

Qualitative and quantitative studies:

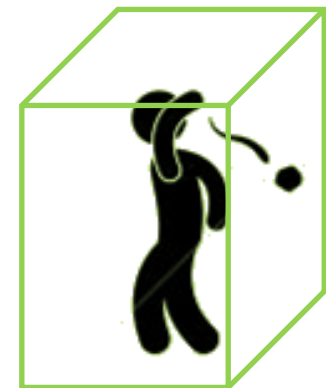
- **880** observations of actual litter behavior
- **707** mini-surveys
- **Counted pieces of litter**, in- and out of the bins
- Video and foto documentation **Before** and **After**
- **Dialog with shop owners** in the area



THE LITTER



THE BEHAVIOR



THE FRAME



// 880 OBSERVATIONS OF SPECIFIC BEHAVIOR



Skraldesituation						Personvurderinger			
Skraldekategori: A) Mad B) Emballage C) Cigarettskod D) Pizzabakke E) Slikskrald F) Drikkevarer G) Papir/pap H) Andet	Afstand til udsmidning: A) Ca. 10-15 m. B) Ca. 5-10 m. C) Ca. 1-5 m. D) Under 1 m.	Størrelse på skrald: A) Over ca. 25 CM B) Ca. 10-25 CM C) Under ca. 10 CM	Mennesketæthed: A) Flere end 10 pers. var indenfor 10 m B) ca. 5-10 pers. var indenfor 10 m C) mindre end 5 pers. var indenfor 10 m D) Ingen andre var indenfor 10 m.	Bevægelse: A) Stående B) Siddende C) Gående D) Løbende E) Cyklende F) Lige stået ud af bil/bus G) Ved at gå ind i bil/bus/bar	Vejr: A) Vindstille ingen regn B) Vindstille regn C) Vindstille sne D) Vind & ingen regn E) Vind & regn F) Vind og sne	Intention: A) Smed det bevidst B) Tabte det ubevidst C) Efterlod det D) Placerede det E) Andet	Påvirket: A) Stærkt påvirket B) Meget påvirket C) Middel påvirket D) Lettere påvirket E) Helt upåvirket F) Umuligt at sige	Køn: A) Mand B) Kvinde	Alder: A) 15-19 B) 20-27 C) 28-39 D) 40-59 E) = 60+



// OBSERVATION RESULTS

LACK OF VISIBILITY



MAIN TARGET GROUP IDENTIFIED

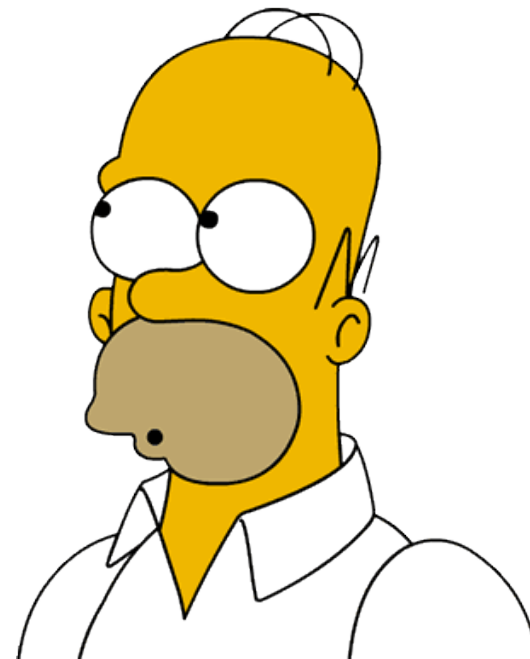


PICNIC BEHAVIOR





Holmes vs. Homer



/KL.7

// DESIGNING FOR A DRUNK HOMER SIMPSON...



DRUNK PEOPLE AND REPTILE BRAINS





// TESTING PROTOTYPES – THE SLEEPY GHOST





// TESTING PROTOTYPES – THE PARTY BENCH



**56%
LESS LITTER**

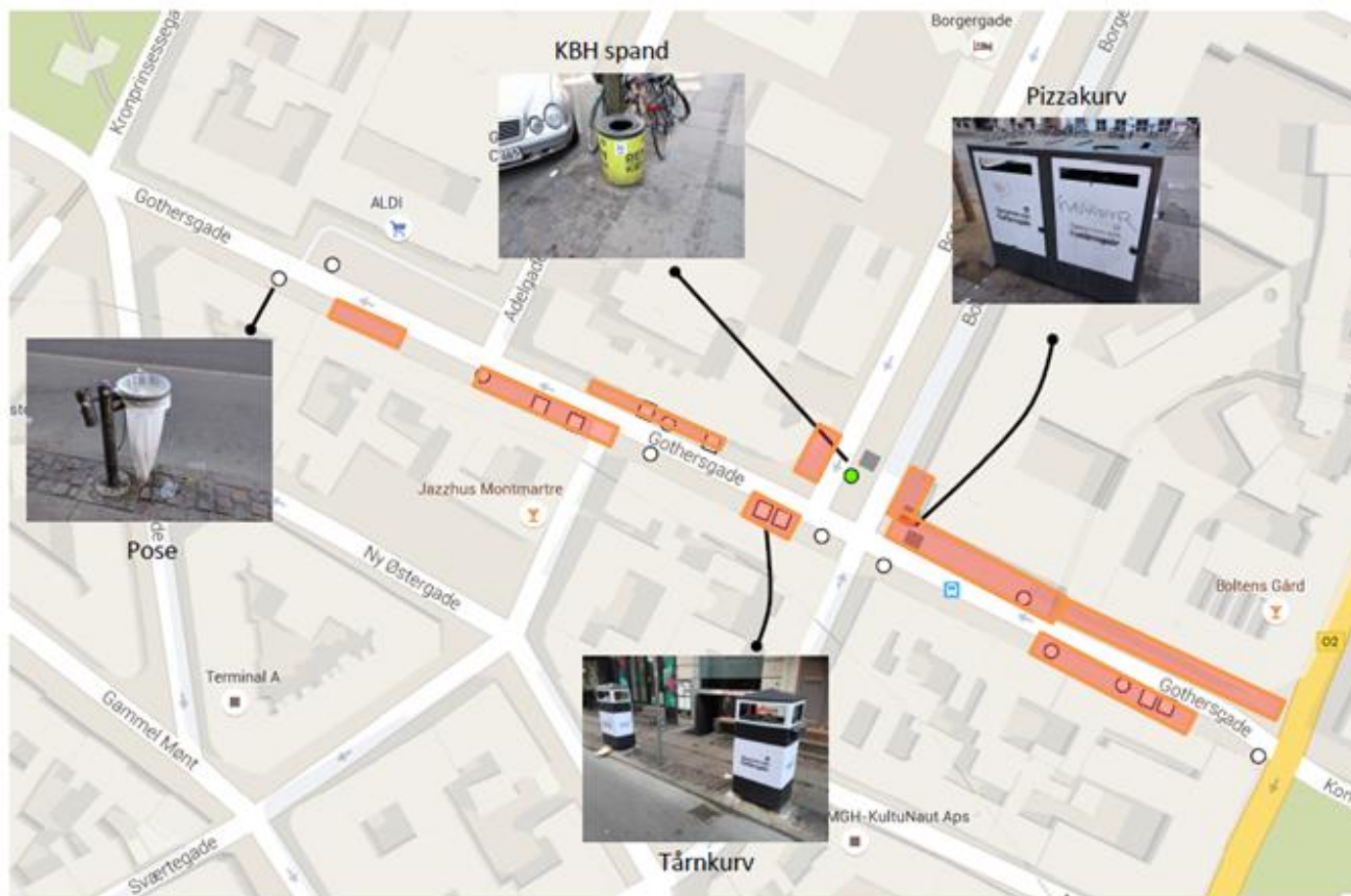


// TESTING PROTOTYPES – VALUE ON LITTER



69%
LESS LITTER

// 2016 – BIGGER SCALE





// 2016 – BIGGER SCALE & MONITORING WASTE



Photo: Peter Bjerg

WHITE IS THE NEW BLACK...

New design to meet party behavior

The white wrap stands out more at night..





// 2016 – BIGGER SCALE & MONITORING WASTE

The screenshot shows the NordSense web dashboard. The browser address bar displays <https://wms.nordsense.com/#/dashboard>. The dashboard includes a navigation sidebar on the left with the following menu items: **NORDSENSE**, **KØBENHAVNS KOMMUNE**, **DASHBOARD**, **LOCATIONS**, **MEDARBEJDERE**, **ARBEJDSPLANER**, **ADVARSLER**, **TENDENSER**, **OPGAVER**, **SENSORER**, **KØRETØJER**, **BEHOLDER GRUPPER**, and **HJÆLP OG SERVICE**. The main content area features a map titled "Kort" showing a street view of Copenhagen with several green location pins. A status bar at the bottom of the map indicates "Sidst opdateret: 3 hours ago" and "Antal beholdere som overvåges: 73". On the right side, there is an "Aktiviteter" section with a warning icon and the text "ADVARSLER" and "8 Beholdere har brug". Below this, there is a "NIVEAU TRENDS" section showing "0 beholdere vil være f". The dashboard also includes a language selector set to "Dansk" and a user profile icon.



Photo: Peter Bierg

// 2016 – MESSURING EFFECTS

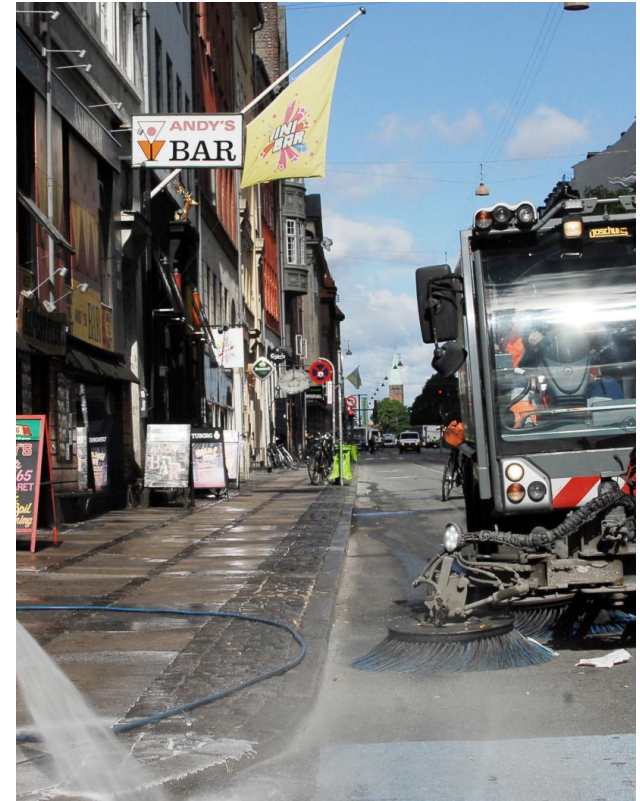


METHOD:

- GPS and GoPro-camera on sweeper
- Sensors in the bins

INTERVENTIONS:

1. Baseline
2. New bin design , white- wraps and bags
3. Emptying bins at night
4. Emptying bins at night and Citizens spreading good vibes



// 2016 – PARTY PEOPLE WANT TO DO RIGHT





// 2016 – EMPTYING AT NIGHT TIME

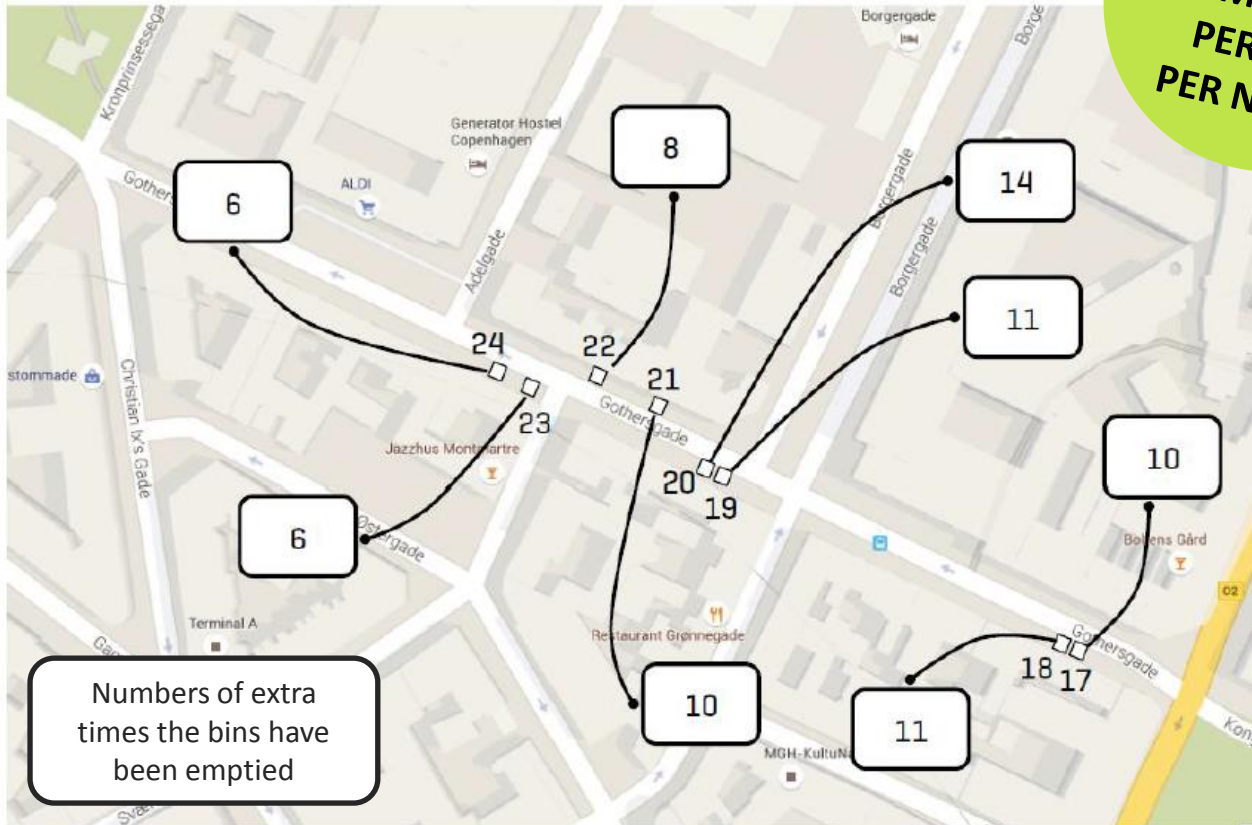
- 4 weekends with nightly emptying between 11pm and 5am – SMS service
- 1 weekend with additional cleaning and handing out water, condoms, puke-bags and good mood





// TESTING - EMPTYING AT NIGHT TIME

11pm – 5am

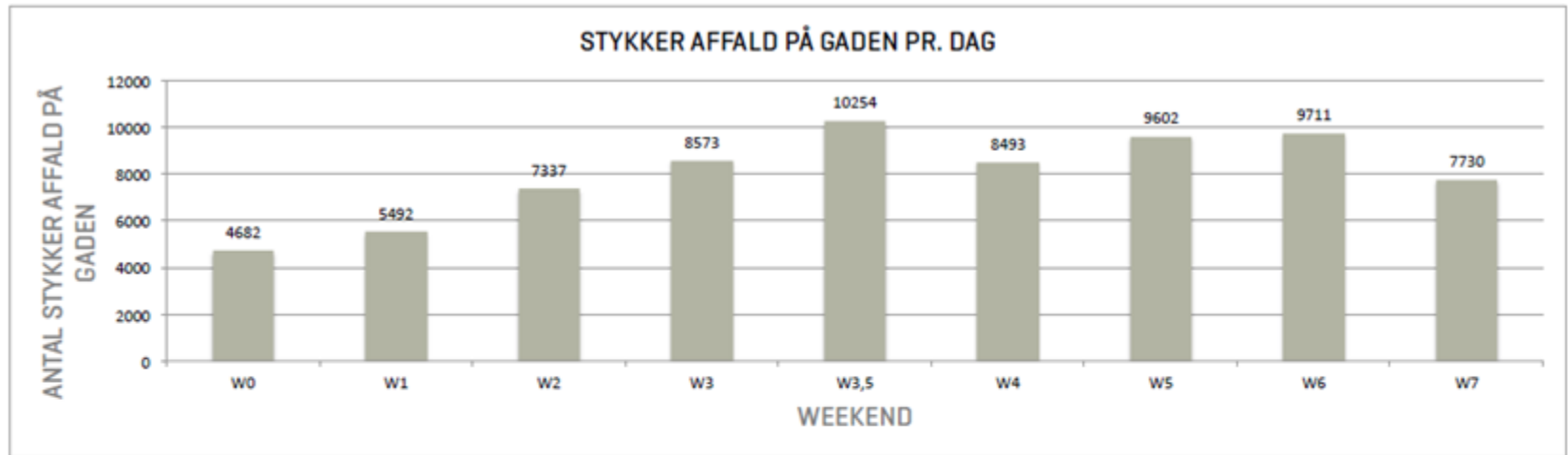


NEED FOR AT LEAST 1,2 TIMES EXTRA PER BIN PER NIGHT





// LITTER COUNTED IN THE TEST PERIODE



Aug

Sep

Okt

W0	W1	W2	W3	W3,5	W4	W5	W6	W7
20 C / 2 mm	23 C / 0 mm	24 C / 7 mm	22 C / 0 mm	24 C / 0 mm	18 C / 0 mm	20 C / 0 mm	15 C / 4 mm	13 C / 0 mm



// RESULTS - LESS LITTER IN THE PARTY STREET

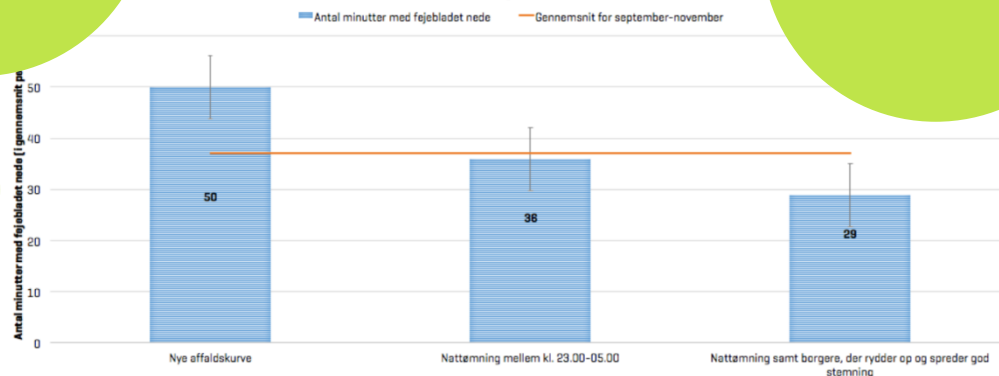


16 %
LESS LITTER

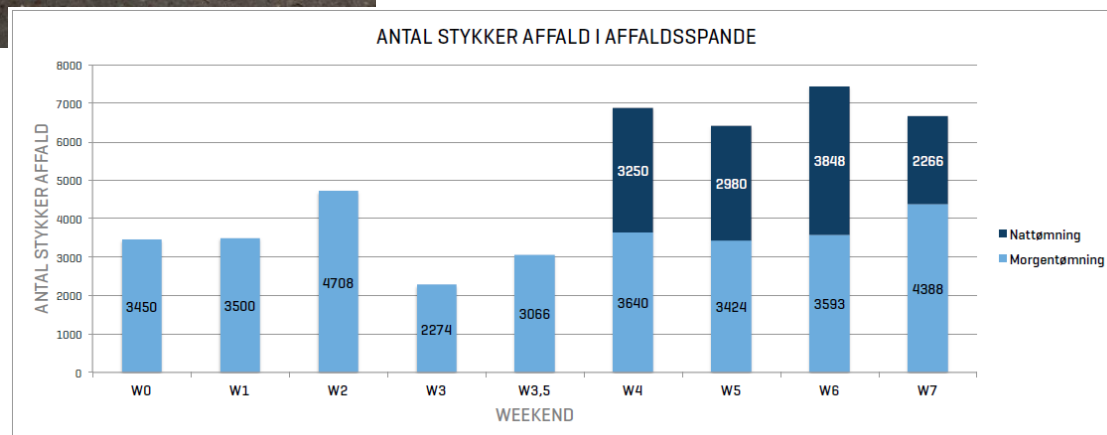
66 %
LESS PIZZA
BOXES

21 min.
LESS SWEEPING

GOTHERSGADE - MÆNGDE SKRALD PÅ GADEN (MED STANDARDAFVIGELSER OG GENNESNIT)



ANTAL STYKKER AFFALD I AFFALDSSPANDE



NEED FOR
EMPTYING AT
NIGHT OR
KOMPRIMATION

// TOGETHER ON GOTHERSGADE - 2017



**FUTURE BINS
COMPRESSES
THE WASTE**



**EXTRA BINS
WITH PARTNERS**



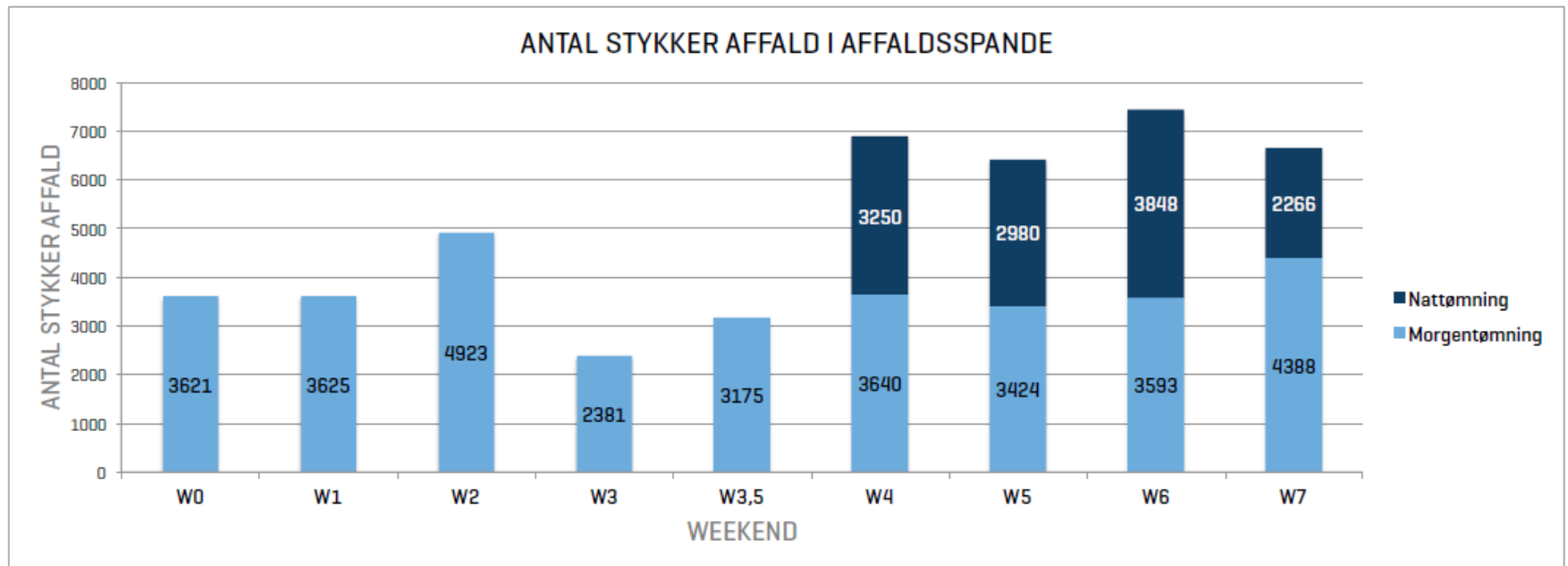


THANK YOU

REN
KÆRLIGHED TIL
KBH



// 2016 – THE NEED OF MORE VOLUME AT NIGHT





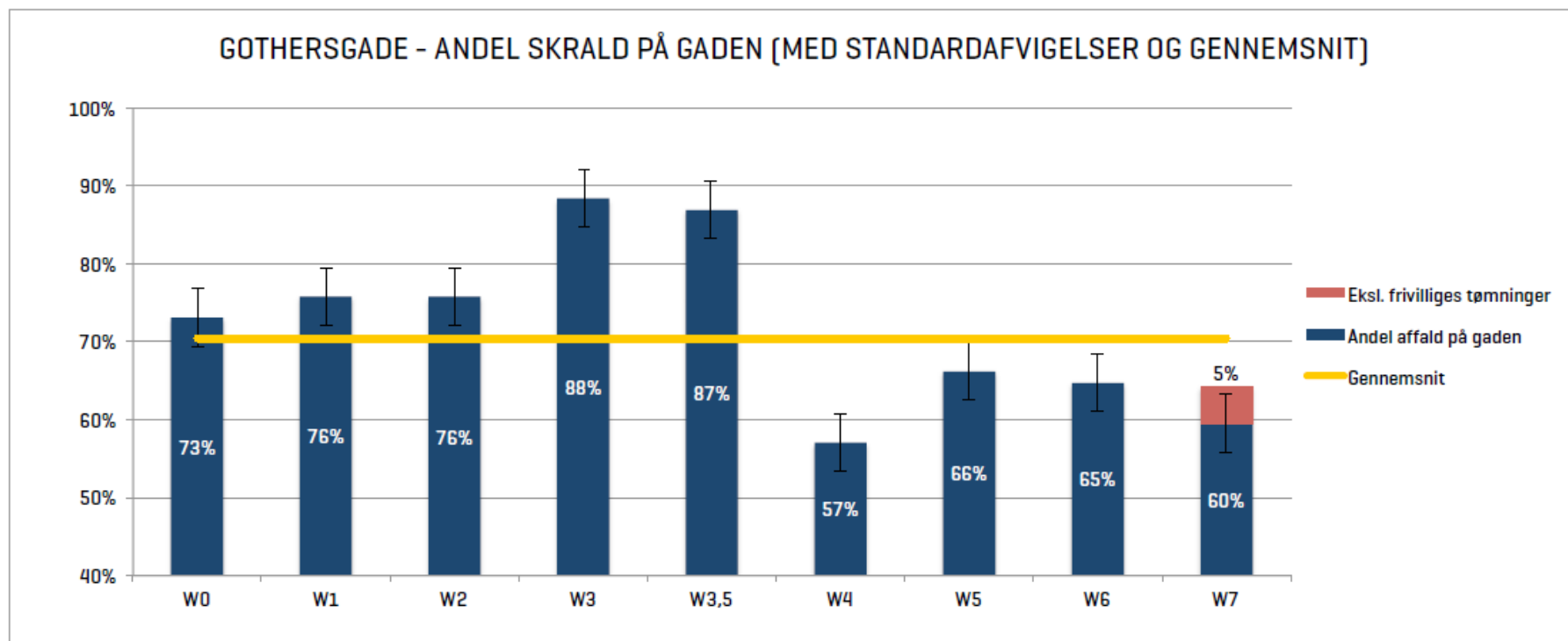
• Klik for at redigere typografi i masteren

MULIGHEDER:

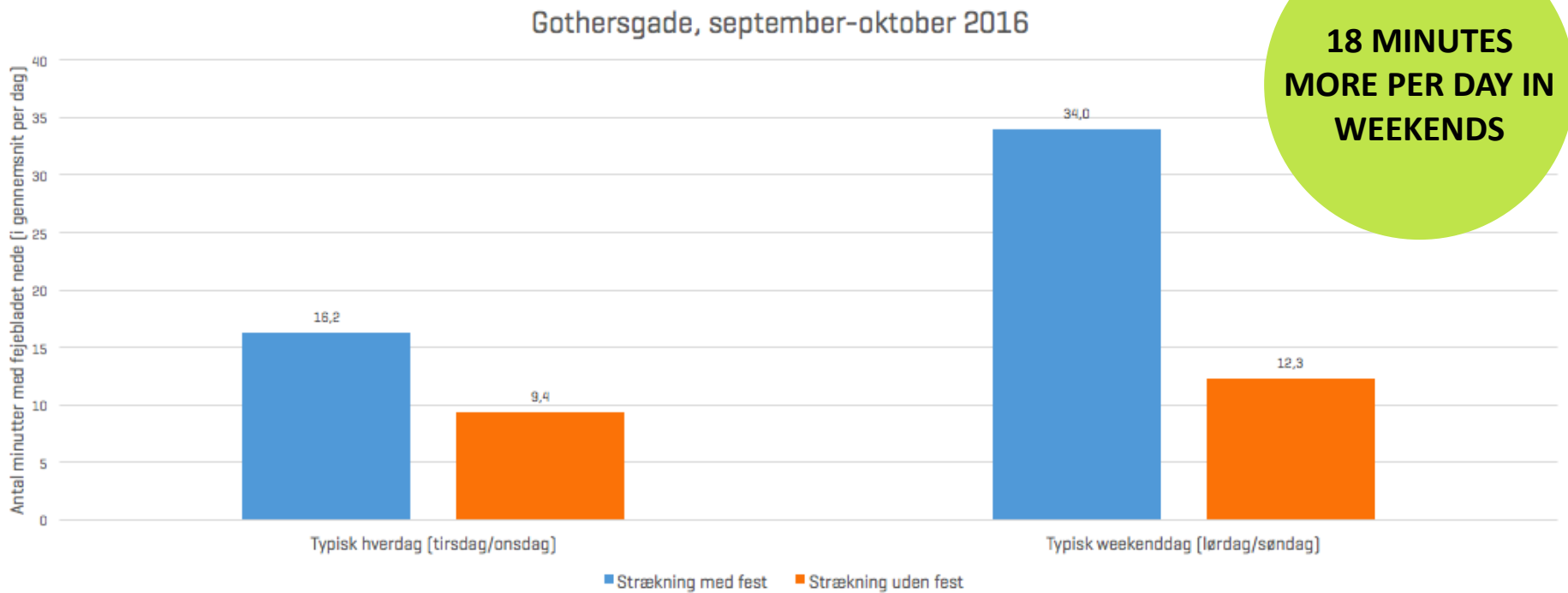
- Andet niveau
- 1. Påvirke adfærden gennem adfærdsdesign (kurvedesign og nudging)
- 2. Ændre den sociale norm (menneskelig interaktion – civil til civil)
- Tredje niveau
- 3. Kontinuerlig renholdelse døgnet rundt og undgå at affald avler mere affald (Broken window theory)
- Fjerde niveau
- 4. Sørge for at kapaciteten i affaldskurvene altid matcher behovet i gaden
 - » Fjerde niveau
 - » Fjerde niveau
 - Plastre gaden til med affaldskurve
 - Større kurve/underjordiske containere
 - Tømning ved opstået behov både dag, aften og nat
- 5. Mindske mængden af affald genereret i området (langsigtet indsats)
 - Øge genanvendelse og pant
 - Mindske udleveringen af emballage



// 16% LESS LITTER IN THE PARTY STREET



// 2016 - THE TIME IT TAKES TO SWEEP THE PARTY STREET





TEORI:

1. Mennesker er vanedyr og vi gider ikke anstrenge os.
 - *PATH OF LEAST RESISTANCE:*
 - *Mennesker kan godt li' lette opgaver. Fjern derfor besvær mellem nuværende adfærd og ønsket adfærd (om muligt).*
2. Vi ønsker at være en del af gruppen .
 - *SOCIAL PROOF (social norm):*
 - *Når vi er usikre på hvad der er det rigtige at gøre, så ser vi på hvad andre gør og kopiere dem. Derfor kan det være effektivt at henføre til, hvad majoriteten gør eller få andre til at vise vejen.*
3. Skrald avler skrald og anden uønsket adfærd.
 - *BROKEN WINDOW THEORY:*
 - *Er der beskidt, smadret eller meget graffiti (tags) er tendensen til uhensigtsmæssig adfærd større*



1) Forstå problemet:

- Observér adfærden
- Definér adfærden
- Definér målgruppen



ADFÆRD



ADFÆRDSDESIGN

2) Design løsningen:

- Definer den ønskede adfærd – hvad er det *præcist*, modtagerne skal gøre?
- Lav en barriereanalyse – hvad afholder dem fra at gøre det?
- Design løsning(er) – hvordan løser vi det?
- Test – fungerede det så?

[Morten Münster, adfærdsdesigner]



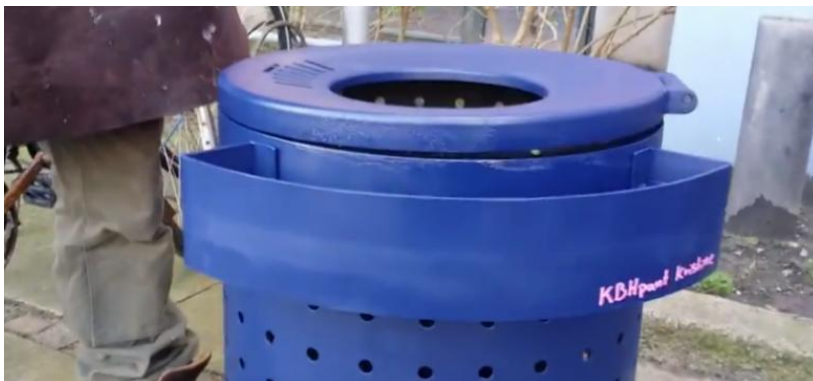
// BEHAVIORAL DESIGN APPROACH



THE REFUND TRAY



// MOCK UPS AND PARTNERSHIP



// 1000 BOTTLES – 4 INTERVENTIONS



-  Bins
-  Observers
-  Bottle hand outs





// INTERVENTION OBSERVATIONS - RESULT

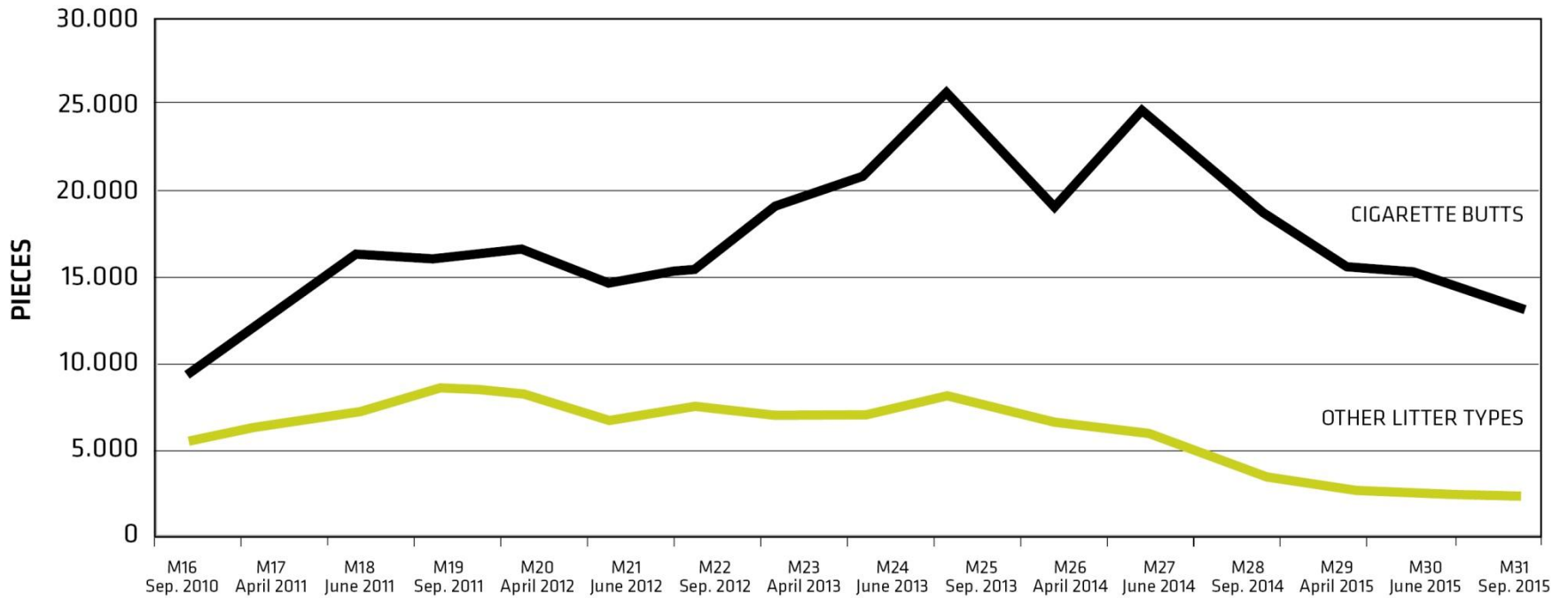


**59%
PLACED IN
THE TRAYS**

**76%
LESS OUTSIDE
THE BINS**

**49%
LESS BOTTLES
IN THE BINS**

// PURE LOVE PAYS OFF





// WHY PREVENT LITTER IN CITIES

**SATISFIED
TOURISTS**



LIVEABILITY



SAFETY



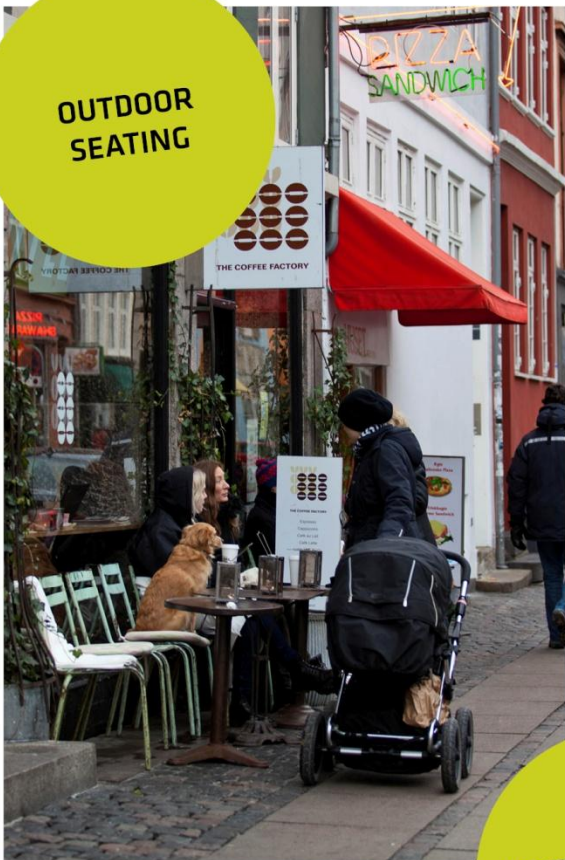
// EUROPE'S CLEANEST CAPITAL IN 2015





// OUR CHALLENGES

OUTDOOR SEATING



NIGHTLIFE PRESSURE



MORE PEOPLE IN THE STREETS



URBAN FESTIVALS AND PARTIES



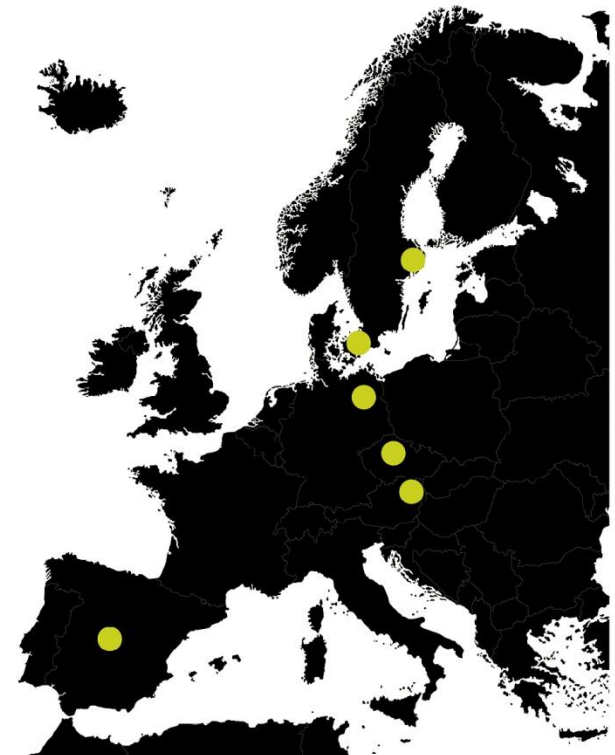
// HOW DO WE MEASURE OURSELVES?





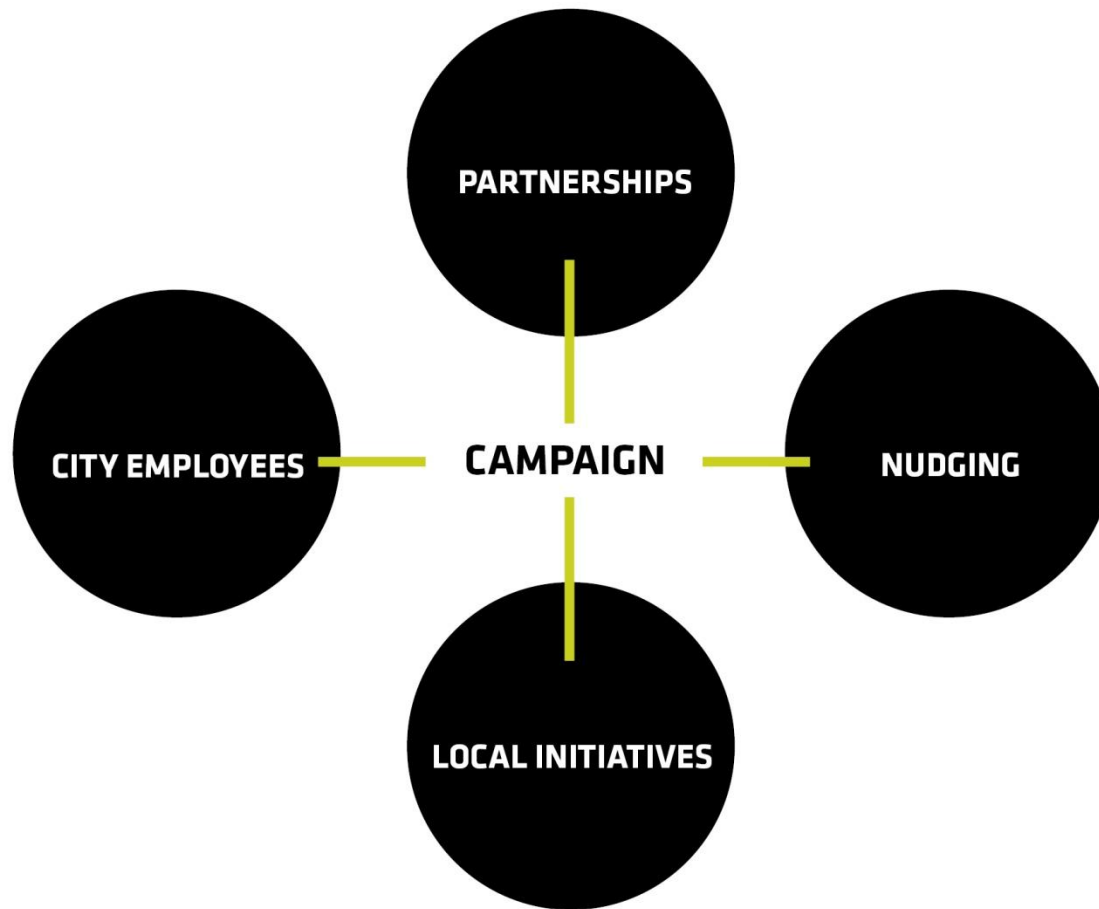
// HOW DO WE MEASURE OURSELVES?

RANKING	CITY	LITTER	DIRT	URBAN MANAGEMENT TOTAL
1	Vienna	4,7	4,1	4,4
2	Stockholm	4,4	4,3	4,3
3	Copenhagen	4,3	4,3	4,3
4	Madrid	4,1	4,3	4,2
5	Prague	4,4	4,0	4,2
6	Berlin	4,3	3,5	3,9





// 'PURE LOVE TO CPH' - OUR FRAMEWORK





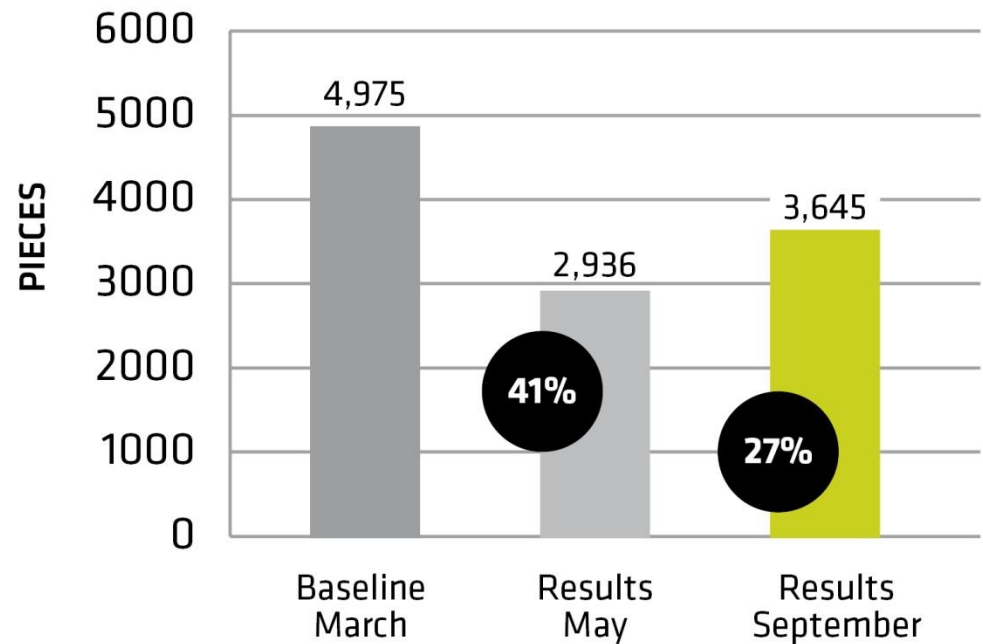
// VISIBILITY AND CPH CITY PRIDE



// PURE LOVE PAYS OFF



LITTER OUTSIDE THE BINS (PIECES)*



*in 5 different test areas



// WHAT DO THE COPENHAGERNERS SAY..?

- Broad knowledge – 75%.
- The bins are the most recognised – credit to the footprints and nudging.
- The citizens perceive the campaign as positive – credit to the message of LOVE and community feel.

'I like the nudging aspect... Now I look for the green colour when I need to get rid of my trash'.

Focus group, age 20–25 years.

