

Using Behavior-Change Strategies to Reduce Littering in Lambeth

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WPI



Lambeth

Why is Addressing Littering Important?



Unattractive

81% of British people frustrated or angry at the sight of litter

Reduces tourism



Expensive

Taxpayers of Great Britain pay £500+ million each year to clean streets of litter

£7+ million just in Lambeth



Environmental Effects

Contaminates water systems

Alters and obstructs marine habitats, damaging aquatic life

Poses physical and toxicological dangers to wildlife

Dangerous chemicals can enter the food chain



Burden to Society

Damages community spirit, well-being, and health

Impacts national prosperity and happiness ranking

2015-17: delayed 1,348 Underground trains for 121.32 total hours

Behavioral Change Strategies for Litter Reduction



Identity Motivations

Accountability

Community involvement

Environmental Motivations

Advertisements

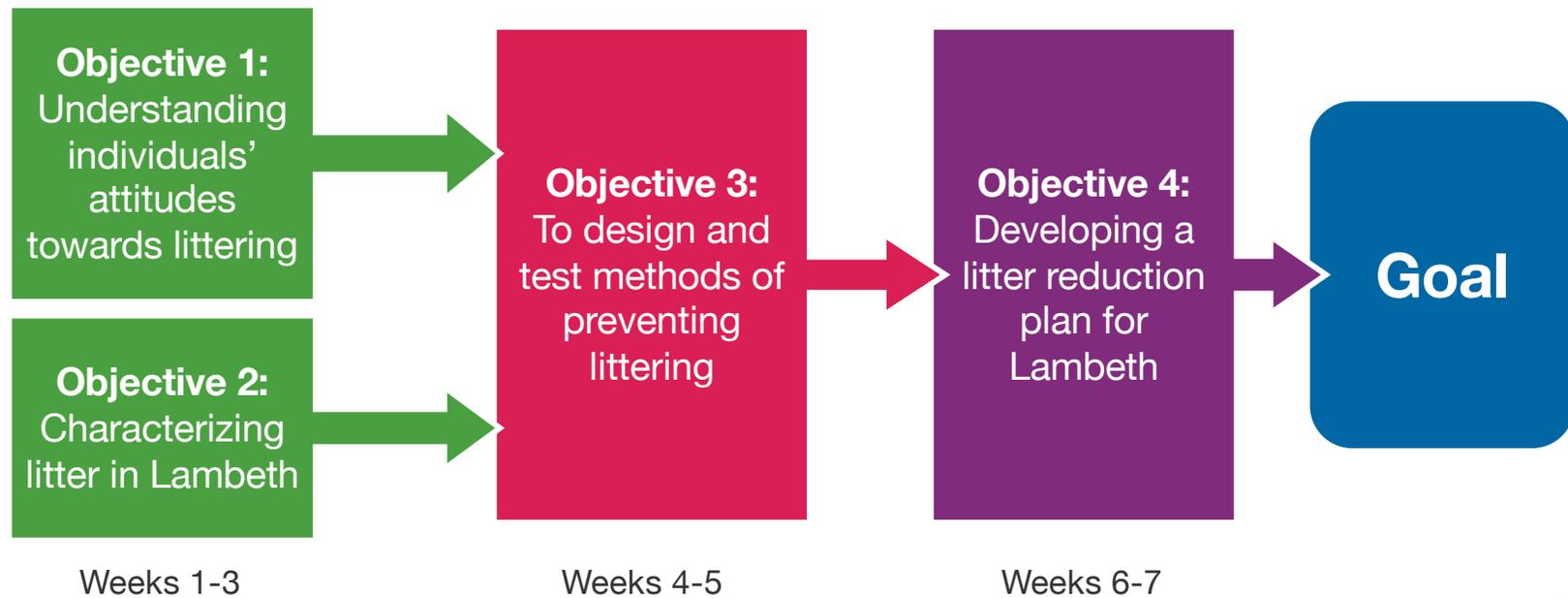
Bin design and appearance

Project Goal

To develop and test an implementable anti-littering strategy that will assist Lambeth Council in addressing the problem of excessive littering in their borough.



Project Plan



Resident + Visitor Survey

Measuring attitudes towards littering and gathering opinions from residents and visitors

Design



5 Minutes



Multiple choice, rating scales, optional free response

13

Questions

Distribution

(80 responses)



Paper Survey (21%)



Lamnet (19%)



Email (49%)



Twitter (11%)

Resident + Visitor Survey

Survey Opinion Trends



Believed littering is a significant issue



Supported recent FPN increases



Litter seen on street, at public transportation, near businesses



Wanted more litter bins



Most not in favor of higher FPNs



Supportive of public education initiatives

Resident + Visitor Survey

Results Discussion

- Littering is primarily an opportunistic behavior
 - ✓ **Environmental nudges** (posters, etc.)
- People blame external factors for littering rather than internal factors
 - ✓ **Promote sense of ownership by using community attachment**
- Most residents of Lambeth identify as Londoners rather than residents of Lambeth or their ward
 - ✓ **Use broad or London-centric messaging**
 - ✓ **Use widely-recognizable Lambeth landmarks**

Civil Enforcement Officer Interviews + Observations

- Characterize the littering problem

Topics Included:

- Workings of their job
- Experience of litterer demographics
- Opinions on efficacy of FPNs

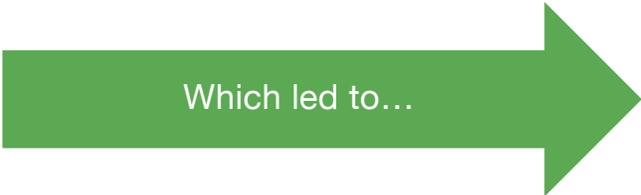
Objective Goals:

- Understand Lambeth's littering dynamics
 - *Where, when, and what*
- Refine the target of our anti-littering campaign

Civil Enforcement Officer Interviews + Observations

Results Summary

- Litter is most often:
 - In areas and times of high foot traffic (i.e. transportation hubs, rush hours, lunch break)
 - Cigarette ends
- FPNs alone do not change littering behavior
 - ✓ **Most officers recommended advertising FPN prices with anti-littering policy**
- Many smokers improperly dispose of their cigarettes due to current bin designs
 - ✓ **Some officers agreed that improvements to bin or ashtray designs would reduce litter**



Which led to...

Civil Enforcement Officer Interviews and Observations

Updates to Our Campaign Focus

Where?

- Underground stations
 - Brixton, Waterloo, and Vauxhall

When?

- Morning commute and lunch rush hours

What?

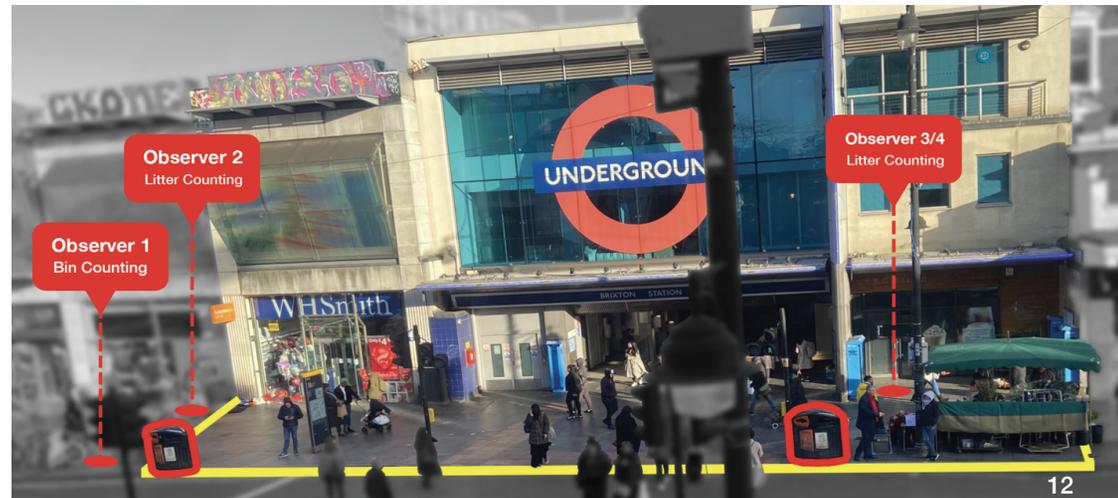
- Cigarette ends



Cigarette Littering Observations

Method of Observation

- 1 day per location
- 2 hours of observation per day
- Talled total number of cigarettes disposed of properly, improperly, or littered in our zone

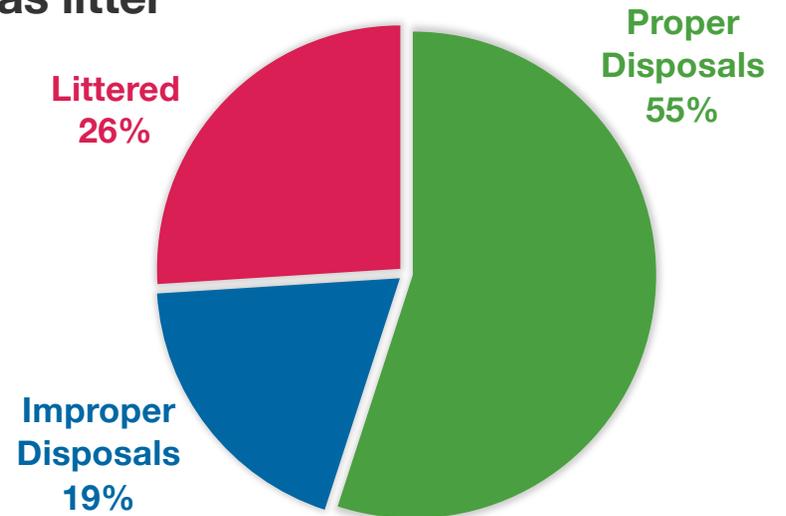


Cigarette Littering Observations

Baseline Results Summary

45%

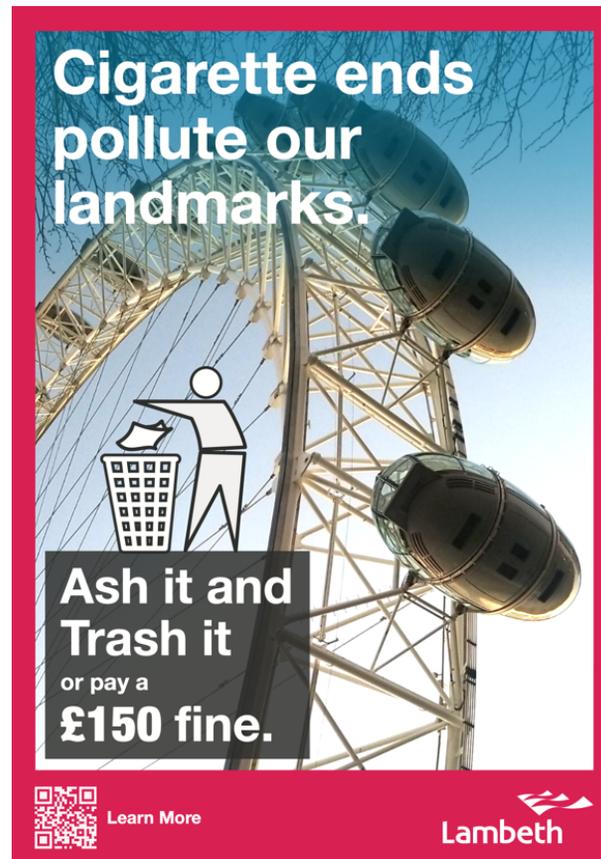
of all 213 discarded cigarettes observed ended up as litter



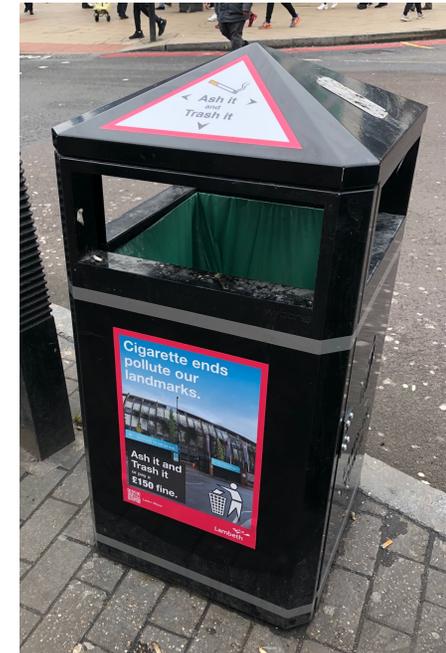
Pilot Litter Reduction Campaign: Bin Posters

Main components:

1. Target community attachment
2. Post FPN price
3. Use recognizable imagery



Pilot Campaign: Posters in Action

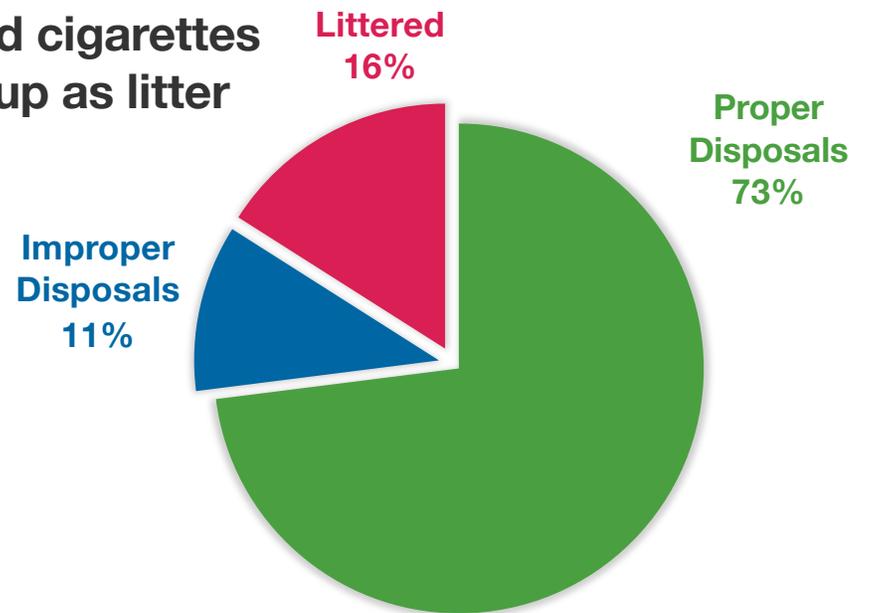


Pilot Campaign: Observations

Post-Campaign Results Summary

27%

of all 186 discarded cigarettes observed ended up as litter



Pilot Campaign: Efficacy

Confounding variables:



Baseline **45%** → Post-Campaign **27%**

39%
less

cigarette littering
and improper
disposal

Advertisement Campaigns

Reasoning:

- Success of our campaign

Poster Design Suggestions

- ✓ Build off residents' community attachment
- ✓ Post the price of FPNs



Locations



- ✓ High foot traffic locations
- ✓ Transportation hubs

Use Bin Toppers

- ✓ Educate smokers
- ✓ Have officers start to enforce improper disposals



Bin Designs: Current

Reasoning:

- Officer interviews
- Our own observations

Brixton Bins



- ✓ Has an ashtray
- ✓ Two compartments
- ✗ Small ashtray openings
- ✗ Small trash compartment openings

Waterloo & Vauxhall Bins



- ✓ Easy to use
- ✓ Stubber plate
- ✗ No recycling
- ✗ Trash blows out of bin
- ✗ No ashtrays

Bin Designs: Our Suggestion

Reasoning:

- Our research and personal observations

Our Proposed Design

- ✓ Separate compartments
- ✓ Accessible openings
- ✓ Stubber plates
- ✓ Large, easy to operate ashtray



Bin Locations

Reasoning:

- Our own observations
- Survey responses



- Bins should be spread out more to cover larger areas & placed in high-visibility locations

- Consider placing bins or ashtrays where people typically smoke



Community Cleanup

Reasoning:

- Background research
- Survey responses

54%

of residents
showed interest in
a cleanup event

In four weeks,
the Great British
Spring Clean
accumulated over

950,000
bags of litter

Educational Campaign for School Children

Reasoning:

- Background research
- Survey responses

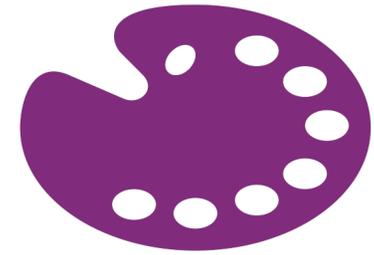
Educate

Information sessions on litter



Apply

Create campaign materials



Thank You for Listening!

And a special thank you to our sponsors
at Lambeth Council:

Ashley Brandon,
Gaynor Brown,
and Andy Skilton



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Questions?

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