

Community Severance from Major Roads: Can We Measure its Effects on Determinants of Health? Lessons from Finchley Road, London, UK

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Street mobility and network accessibility: towards tools for overcoming barriers to walking amongst older people

www.ucl.ac.uk/street-mobility

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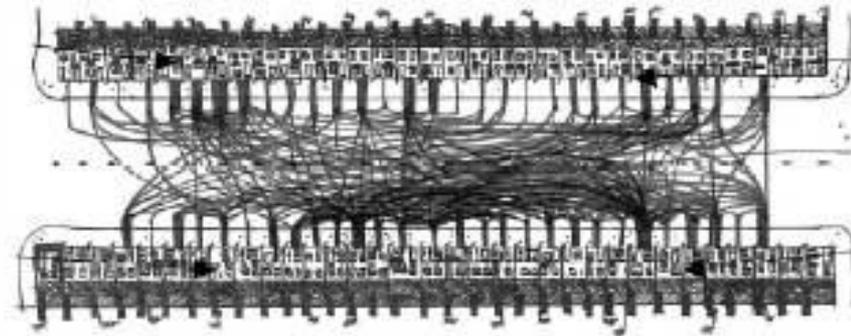
Community severance

- Appleyard and Lintell,
- San Francisco

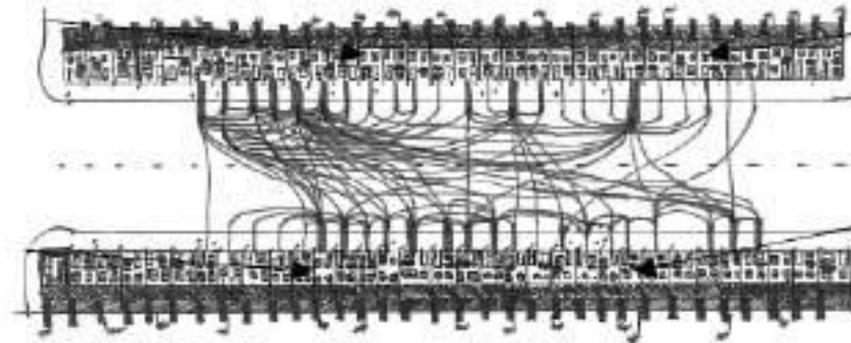
Appleyard & Lintell. *Am Inst Plan J.* 1972;38:84–101.

Appleyard. *Livable Streets*, 1981

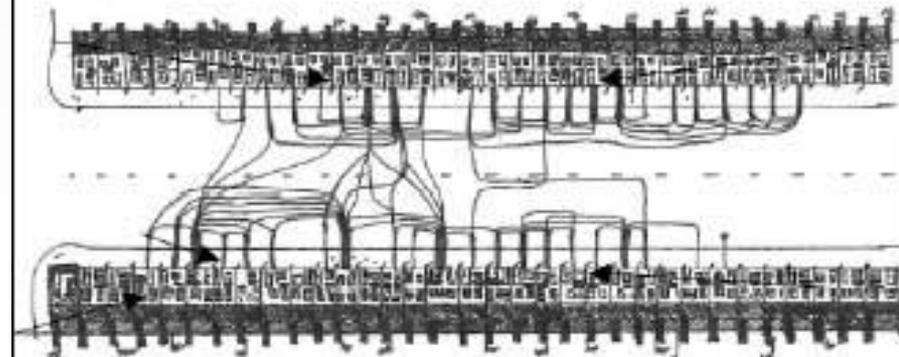
**Mindell J, Karlsen S.
Community severance
and health: What do we
actually know? *J Urban
Health.* 2012;89:323-46.**



LIGHT TRAFFIC: 140 VEHICLES PER DAY
5.35 friends per person/ 8.1 acquaintances



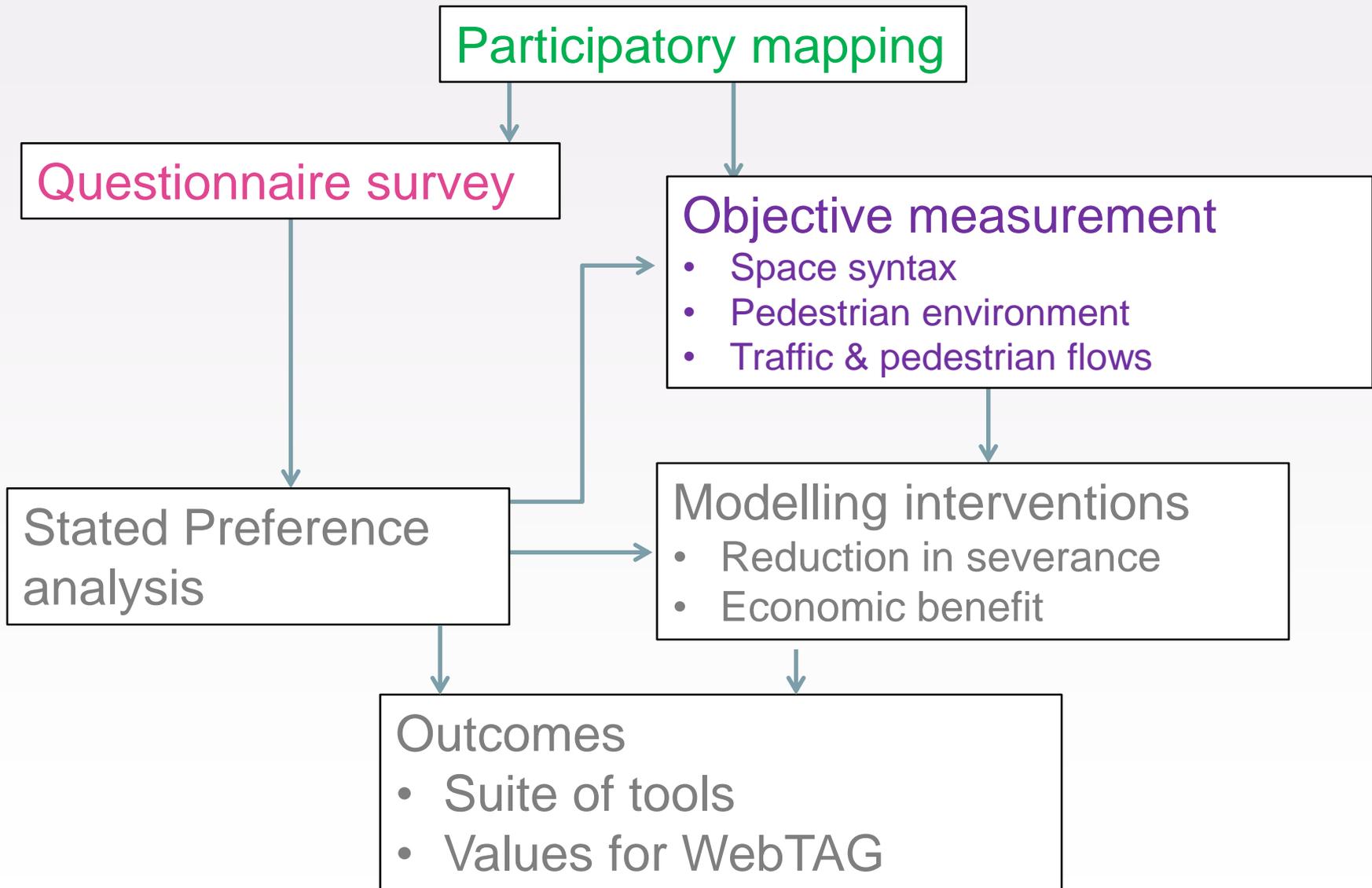
MEDIUM TRAFFIC: 8,420 VEHICLES PER DAY
2.45 friends per person/ 3.65 acquaintances



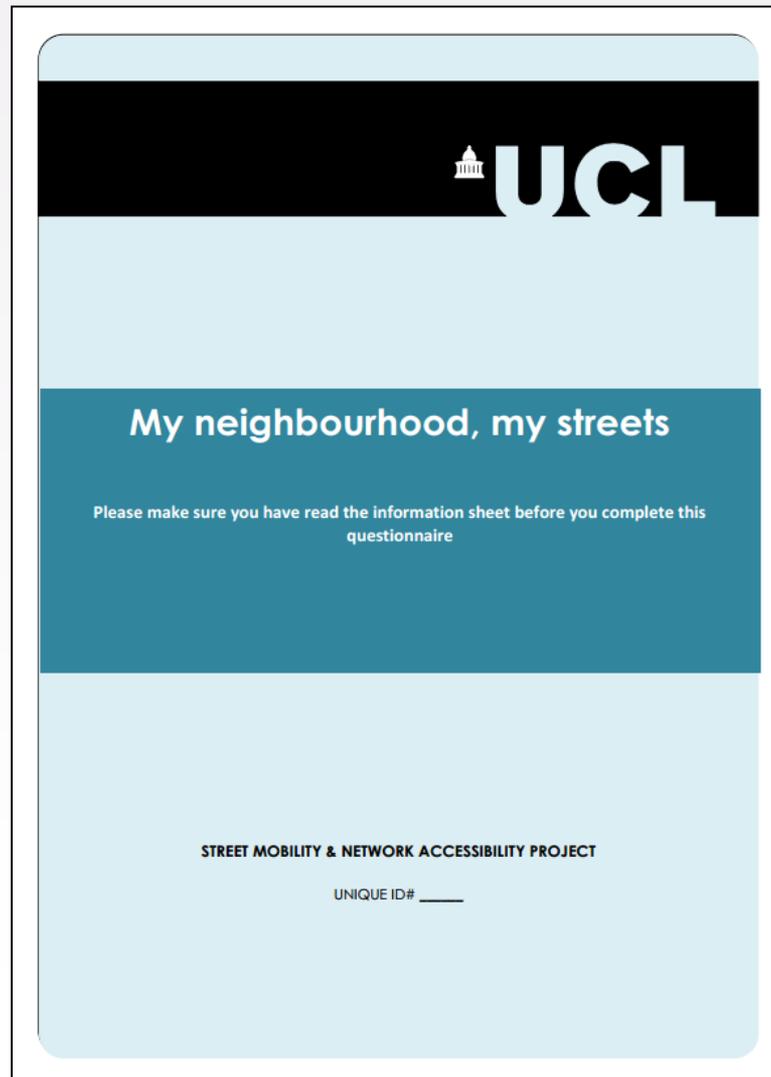
HEAVY TRAFFIC: 21,130 VEHICLES PER DAY
1.15 friends per person/ 2.8 acquaintances

Community severance





My neighbourhood, my streets questionnaire

The image shows the cover page of a questionnaire. It has a light blue background with a black header bar at the top containing the UCL logo. Below the header is a teal band with the title 'My neighbourhood, my streets' and a note to read the information sheet. At the bottom, it identifies the project as 'STREET MOBILITY & NETWORK ACCESSIBILITY PROJECT' and includes a unique ID field.



My neighbourhood, my streets

Please make sure you have read the information sheet before you complete this questionnaire

STREET MOBILITY & NETWORK ACCESSIBILITY PROJECT

UNIQUE ID# _____

Developing a survey tool

- Pre-existing questions:
 - Demographics
 - Socio-economic factors
 - Self-rated health
 - Longstanding illness
 - Disability
 - Wellbeing (SWEMWBS)
- Developed questions about perceptions of own road, busiest road, and walking around in their area
- Cognitive testing
- Pilot
- Survey of random sample of residents

Study results

Finchley Road

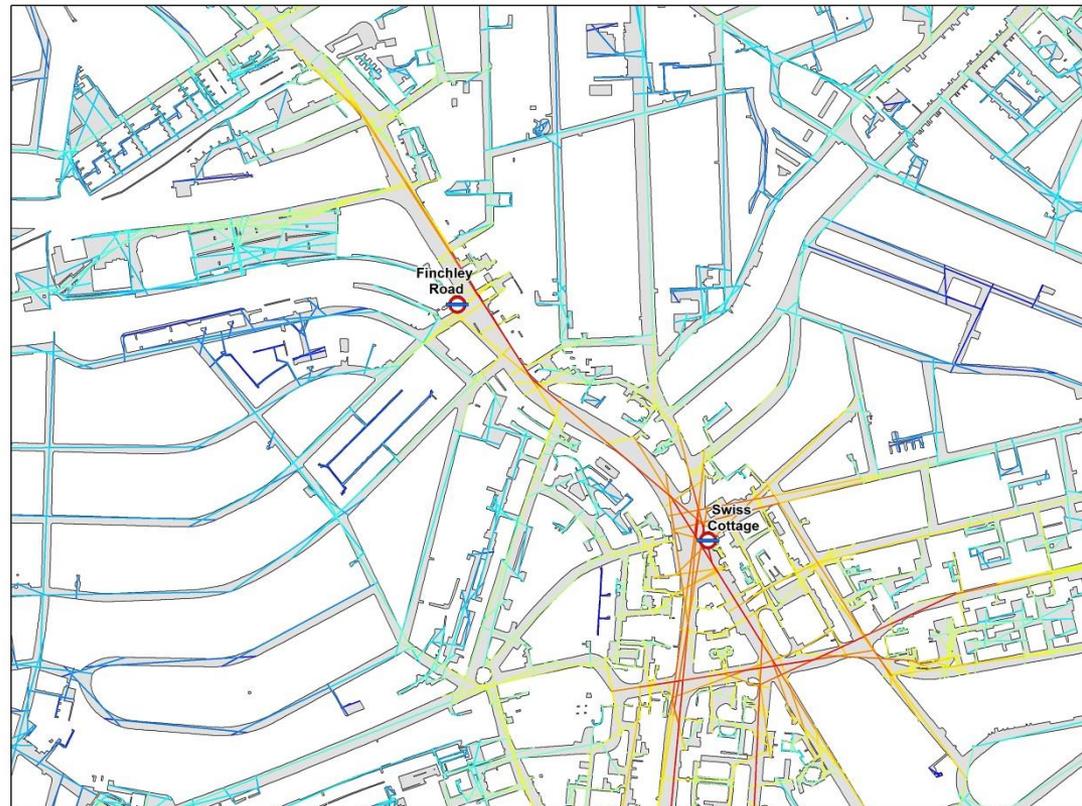


1. Qualitative interviews of 101 people August 2014
2. Survey of 209 people July/August 2015
3. Stated preference survey 100 participants August 2015
4. Video observation of vehicle movement and pedestrian flows 6th November 2014 (20 locations)
5. PERS survey of 114 street segments
6. Local and global spatial analysis of the area
7. Model of walkability for London area

Context

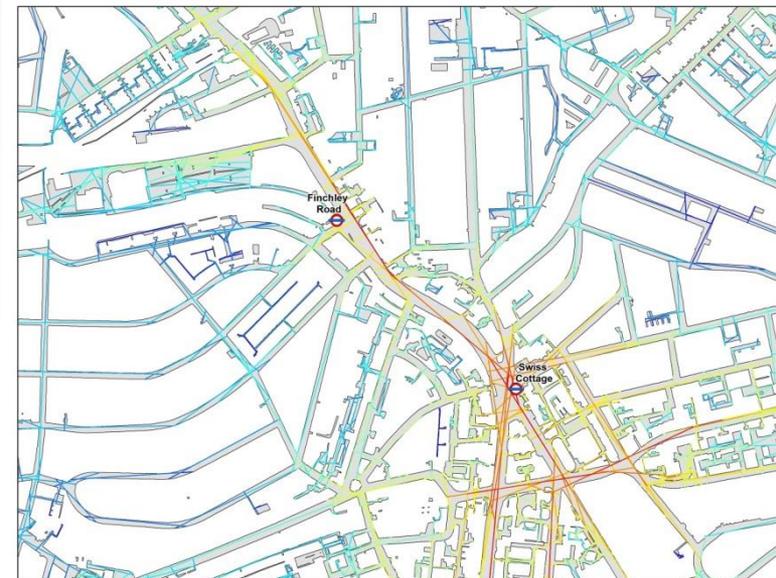
Spatial analysis:
Finchley road is
structurally
important to both
local center and
wider urban area

1.
Syntax analysis (local scale)



Local residents asked on the street reported the road is a strategic destination

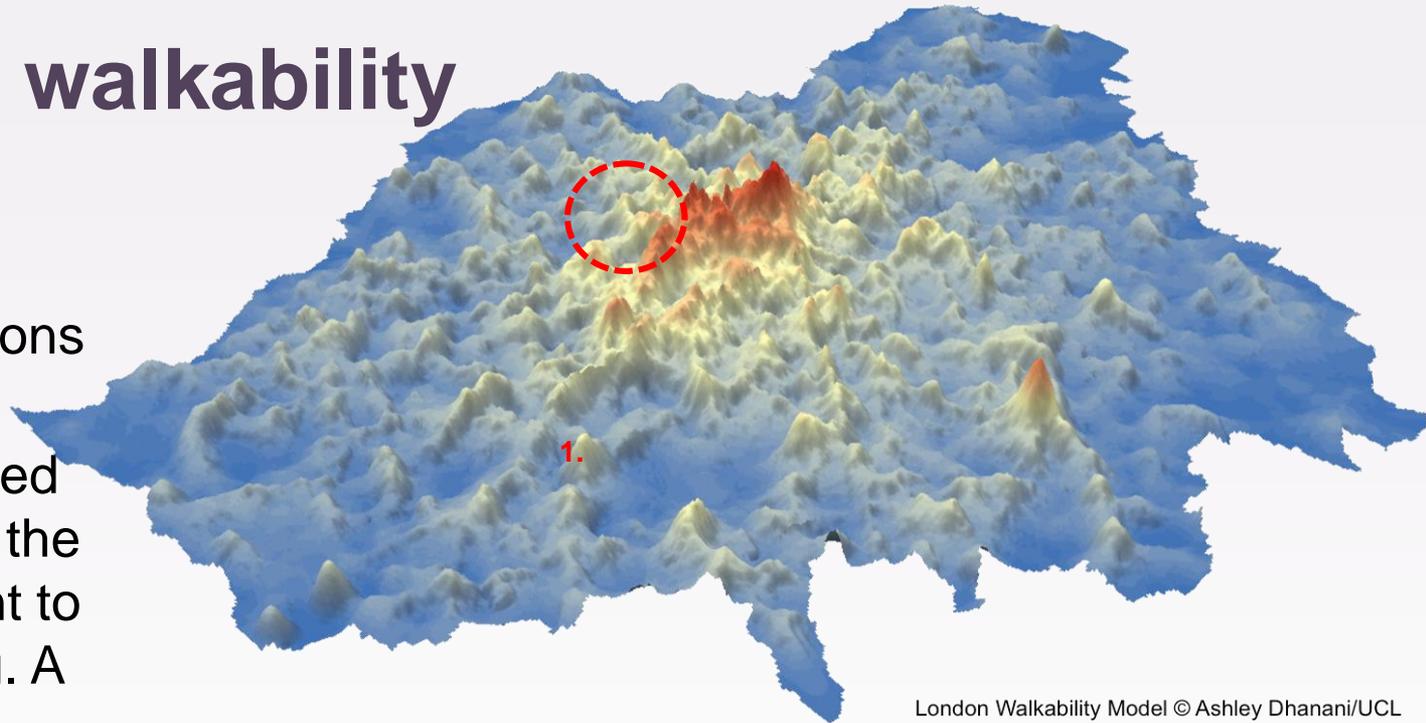
- popular local amenities: Swiss Cottage Farmers' Market, Leisure Centre, O2 Shopping Centre



London's walkability

Finchley Road:
one of the peak
walkability locations
in London.

Walkability defined
as a potential of the
built environment to
promote walking. A
high walkability
score does not
necessarily mean a
high level of walking



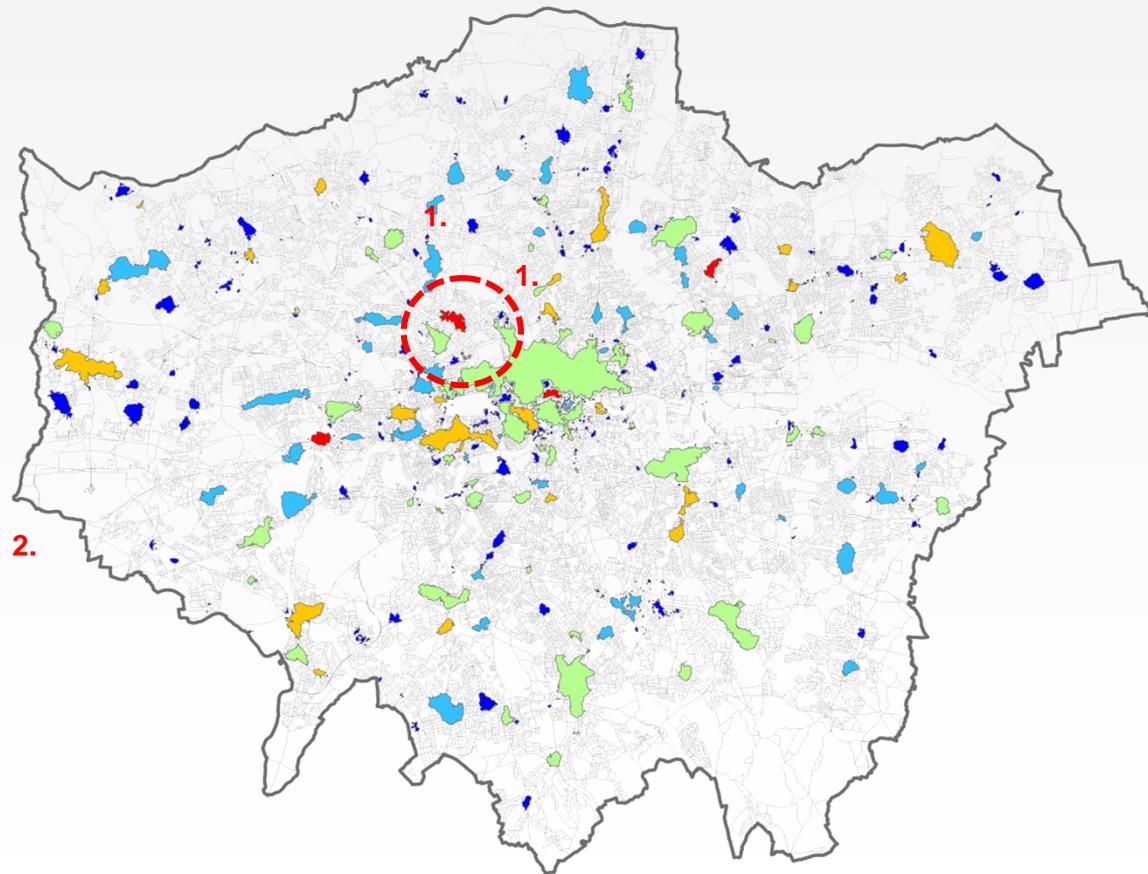
London Walkability Model © Ashley Dhanani/UCL

*“Proximity to green spaces
and pleasant back routes are
a positive factors of the road.”
(Street survey)*

Based on DfT data
considerable amount
of traffic passes
through the area

Levels of traffic within peak walkability boundaries

Survey participants
reported that the
ability to walk to local
places often or always
affected by the speed
of traffic (14%) or its
volume (15%)
(almost half
sometimes affected)



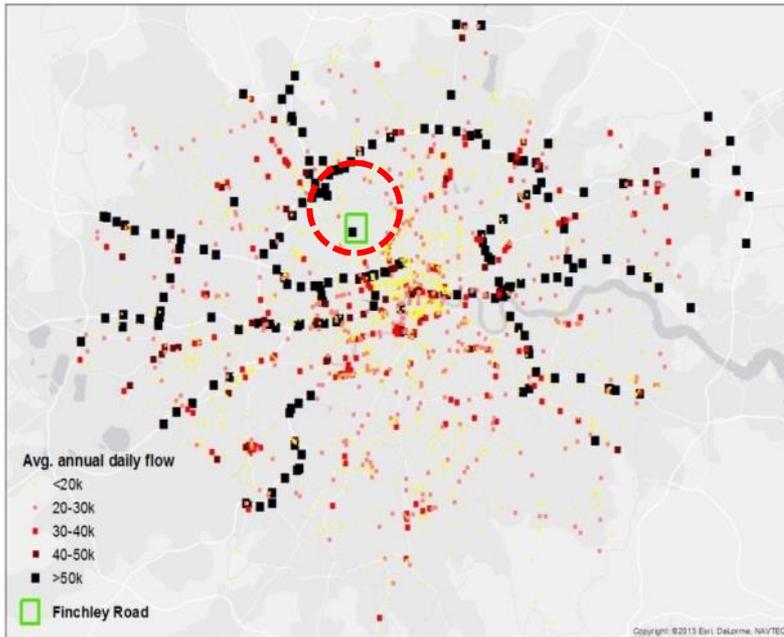
Perception of road as socioeconomic border between two different groups, reinforced by findings from the IMD (from Oliver O'Brien's blog of IMD deciles)



Mobility and destinations

The video survey shows that road traffic levels along the road are very high, compared with similar roads in London. The values are similar to some motorways

London: Traffic levels (2011)



Street survey:

A number of local residents reported that they do not cross the road near Swiss Cottage due to risks involved from car traffic

Questionnaire survey:

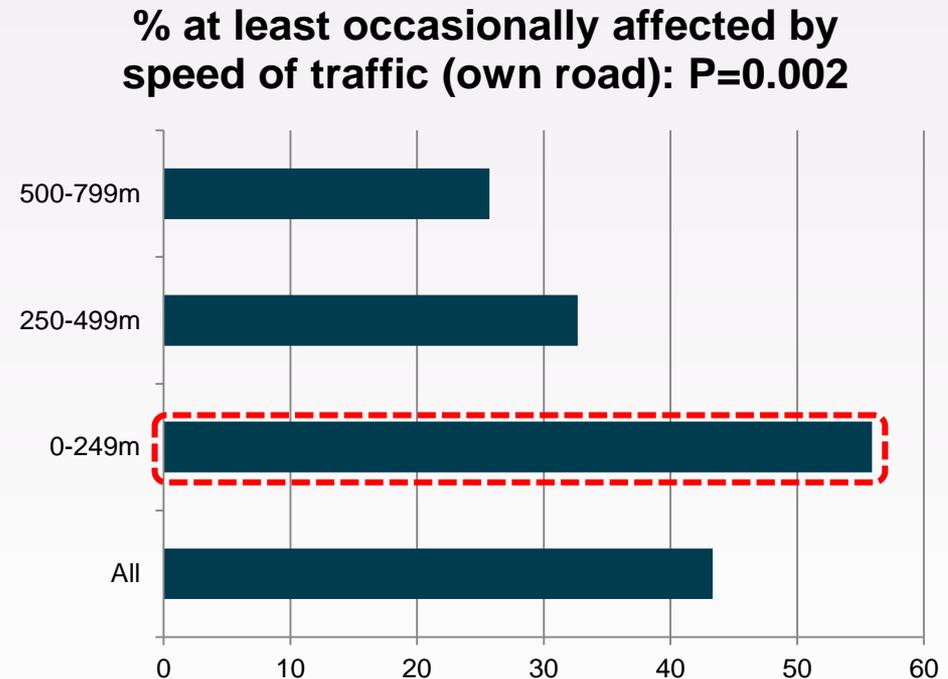
- 25% of participants were concerned about the crossing facilities at Swiss Cottage.
- Difficulty walking around their area:
 - 18% mentioned a lack of crossing points
 - 25% the lack of adequate time to cross

Mobility and destinations

“I don’t like crossing at Swiss Cottage – I nearly got killed there one night.”
(Street survey)

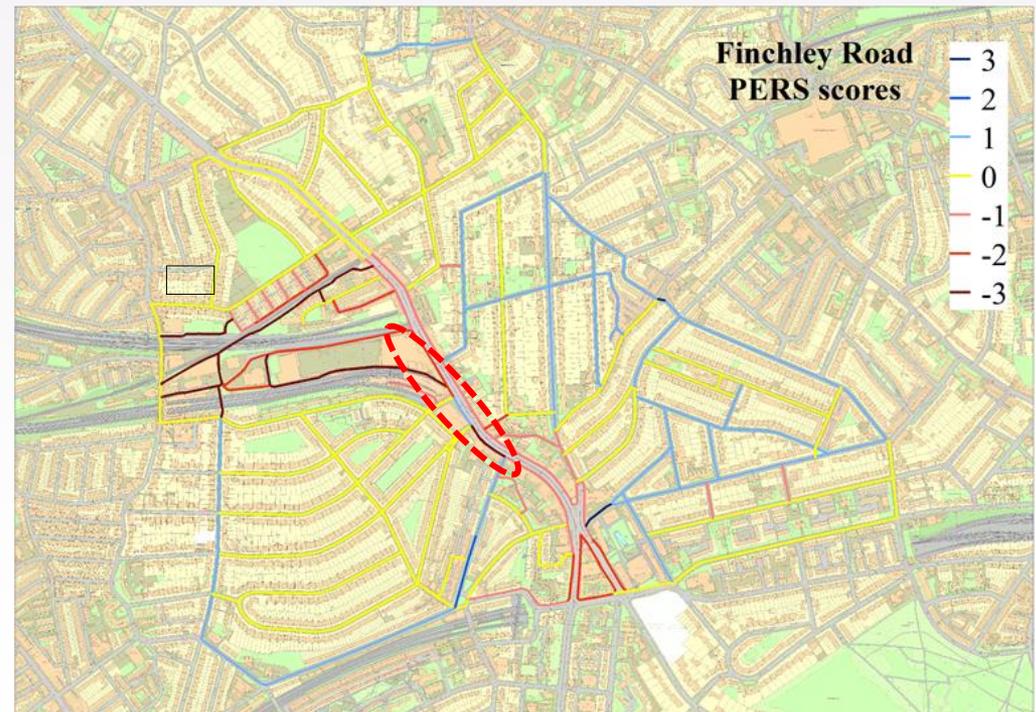
Mobility and destinations

- >50% of survey participants, who were located close to the busy road (≤ 3 minutes walk) were at least occasionally affected by speed of traffic
- >60% by the traffic volume



The PERS survey results show there are barriers to walking other than road traffic, such as railways and dark alleyways (in the NW part) and slopes (in some streets leading to the Finchley road in the E part)

Mobility and destinations

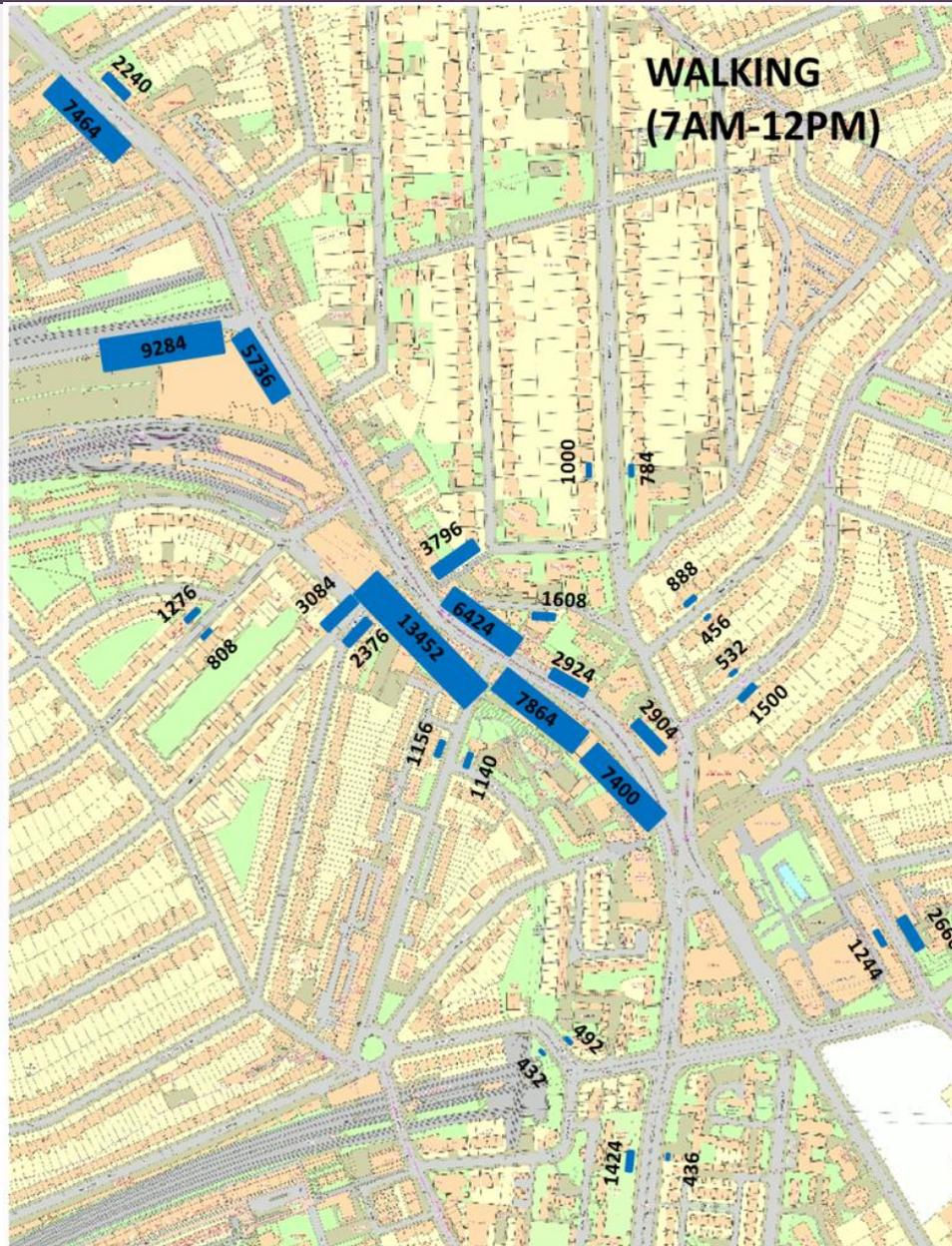


Mobility and destinations

Other difficulties in walking around the local area was related to poor lighting, pavements and paths (13%) and the fear of crime (11%) (Questionnaire survey)

11% of local residents (street survey) raised the issue of fear of crime when walking around locally or using underpasses





Pedestrian flows

“I avoid the pollution on Finchley Road by using the bus – it’s foul crossing by the cinema (Swiss Cottage), really disgusting.”
(Street survey)

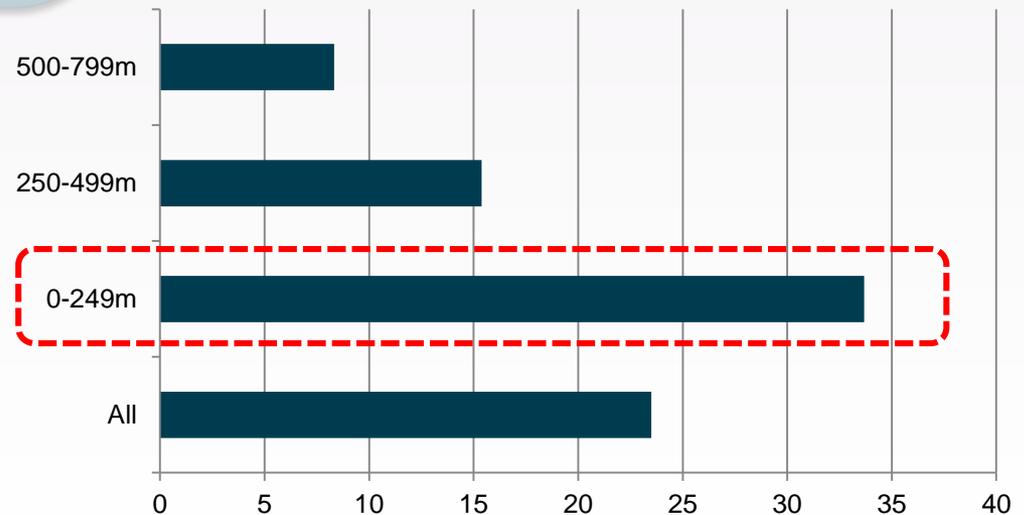
Environmental qualities

“Exhaust fumes from huge airport buses are dreadful. Killing us.”
(S1 survey participant)

- October 2014 – October 2015:
 - Mean NO₂ **61** µg/m³
 - EU limit 40 µg/m³
 - Maximum **345** µg/m³ 18 February 2015
- 20% (street survey) raised pollution as a negative perception of the road
- 36% (questionnaire) reported air or noise pollution as a difficulty for them in walking around the local area

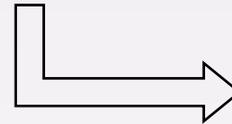
*“I have arthritis and use a walking stick. Many of the pavements are cracked and I have fallen on several occasions.”
(S1 survey participant)*

**Noise / air pollution
(% problem on road): P=0.002**



First two inner London case-study areas (WD & FR)

310 participants \Rightarrow 35% aged ≥ 55 years

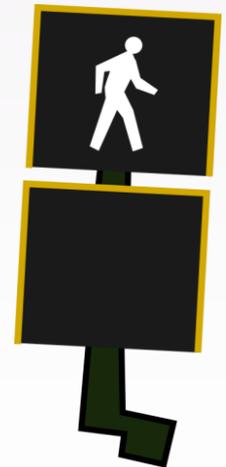


42% of aged ≥ 55 years reported longterm, activity-limiting, health condition



Significantly more likely than those without such a condition to report:

- Walking is often/ always affected by
 - traffic speed
 - traffic volume
- Problems on their own road:
 - Lack of crossing points
 - Insufficient time to cross
- Traffic speed is fairly/very fast, and Wait >30 seconds to cross
 - Own road
 - Busiest road



New definition

Transport-related community severance is the variable and cumulative negative impact of the presence of transport infrastructure or motorised traffic on the perceptions, behaviour, and well-being of people who use the surrounding areas or need to make trips along or crossing that infrastructure or traffic.