

Geodemographics for Policing and Public Service Delivery

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Achieving Value
from the Census

The Market Research Society Census and Geodemographics Group Seminar
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Abstract

- The application of neighbourhood typologies for efficient public service delivery and resource allocation
- Leveraging extra value from national surveys using geodemographics e.g. British Crime Survey
- The analysis of recorded crime data by neighbourhood type
- Using geodemographics for customised service delivery and performance benchmarking in the public sector
- Promoting intelligence-led, proactive policing styles using Census data products

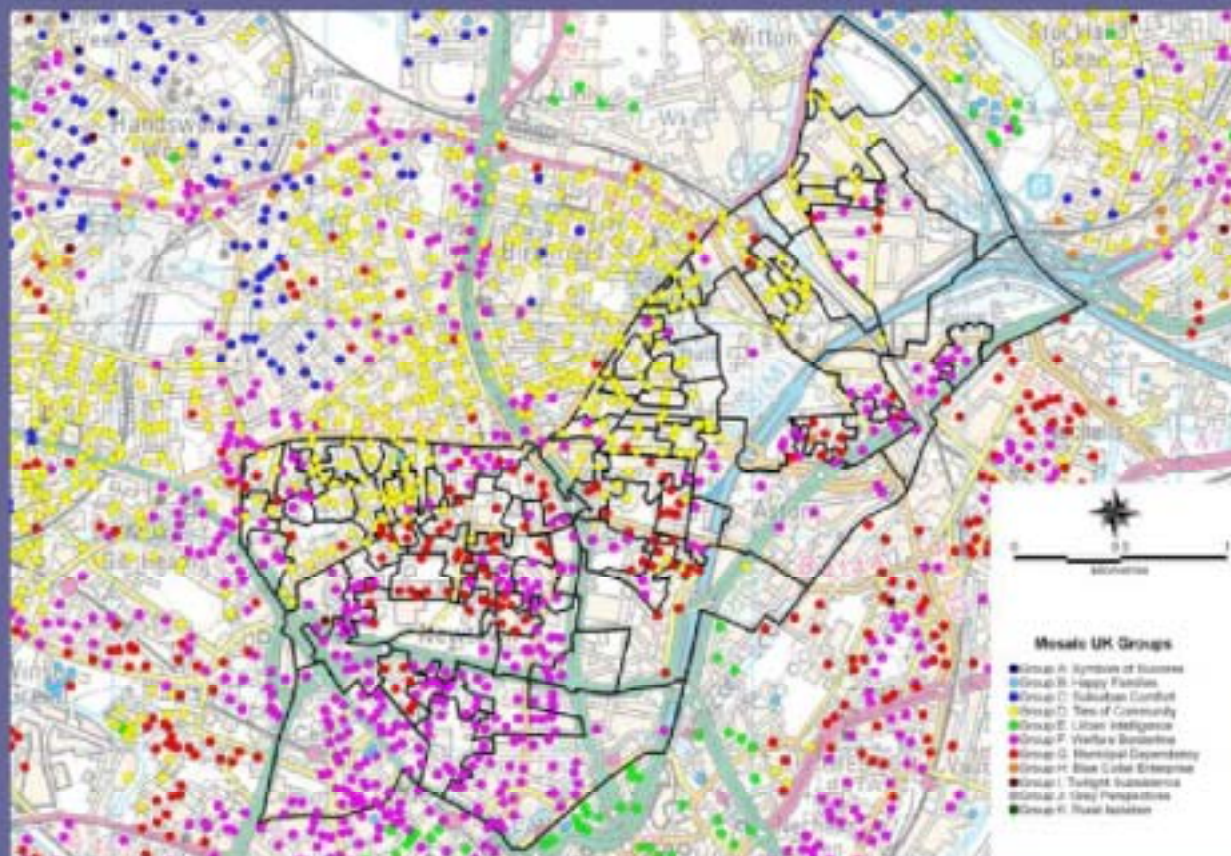
Definitions

geodemographic indicators

small area measures of social, economic and demographic conditions

scale

neighbourhoods as aggregations of unit postcodes

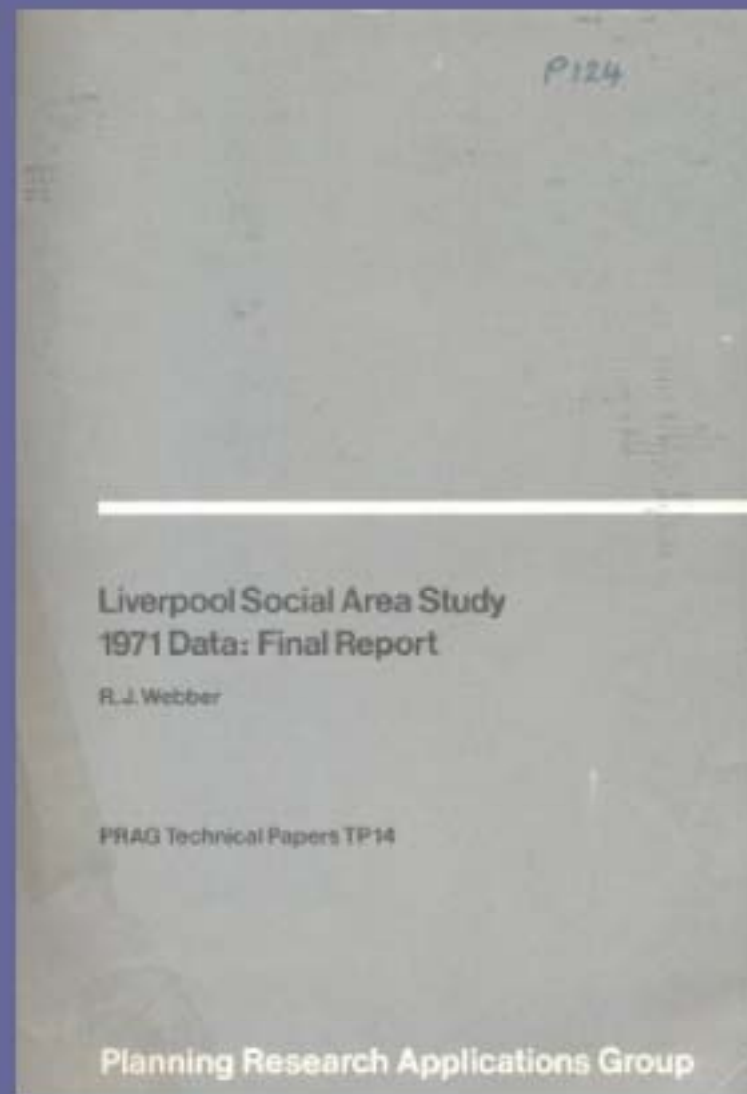
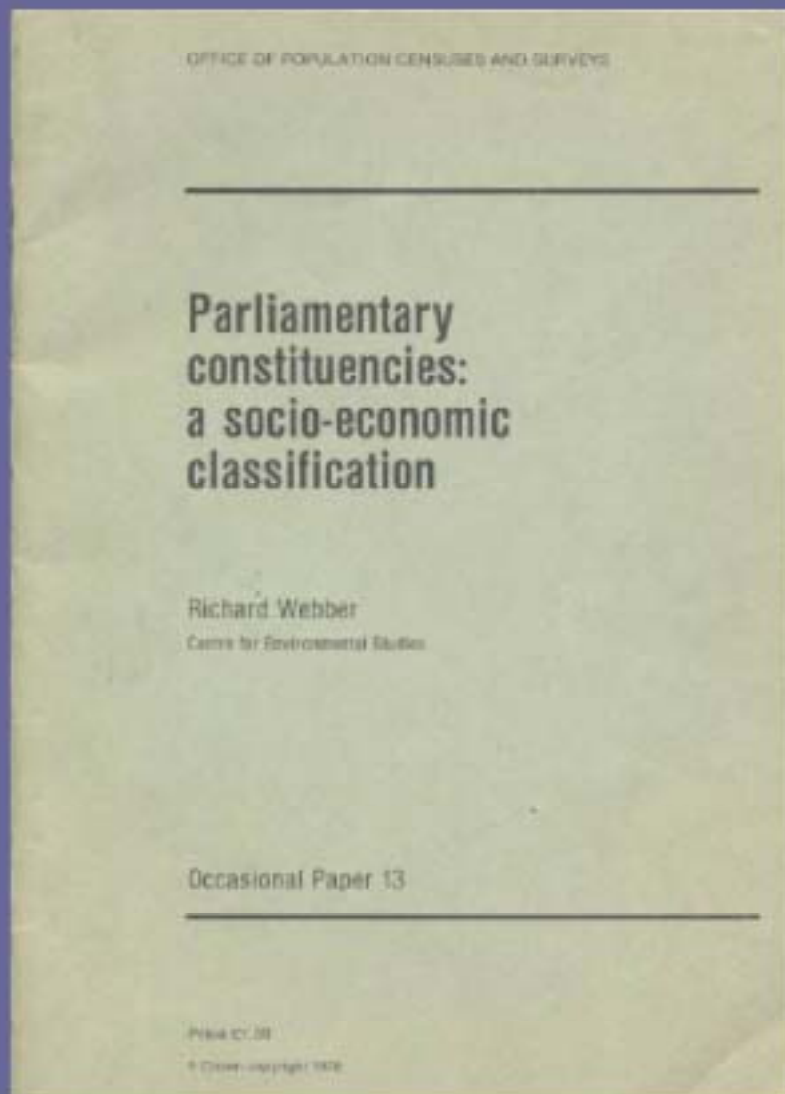




- Demographics**
 - Household demographics
 - Population movement
 - Health
 - Background & beliefs
- Socio-economics and consumption**
 - Occupation
 - Industry
 - Employment status
 - Qualifications
 - Socio-economic status
 - Cars and transport
 - Product and media
- Financial Measures**
 - Directorships
 - Shareholdings
 - Bad debt
 - Credit behaviour
- Property Characteristics**
 - Housing age
 - Second residences
 - Amenities
 - Tenure
 - Building
- Property Value**
 - Council tax band
 - Property value
 - Property sales
- Location**
 - Accessibility
 - Rurality
 - Urbanisation
 - Islands



Origins



Developments: *Site location*



Developments: *Targeting of communications*



J54 : Grey Perspective / Bungalow Retirement



Nottingham Road, Clacton on Sea, CO15 5PG



Hazeldown Road, Teignmouth, TQ14 8QR



Fife Road, Herne Bay, CT6 7RE



Haysom Close, New Milton, BH25 6PN

K60 : Rural Isolation / Pastoral Symphony



Wern Ddu, Tyn y Groes, Conwy, LL32 8SS



Lumburn, Tavistock, PL19 8HT



Melmerby, Penrith, CA10 1HF



Dalemoor Farm, Dale, Ilkeston, DE7 4PH



Spatial granularity

Different zones are built using postal geography provided the Royal Mail

Postcode

NG34 5AH

1.6 million postcodes
15 households in each

Postal Sector

NG34 5

9,000 sectors
2,600 households in each

Postal District

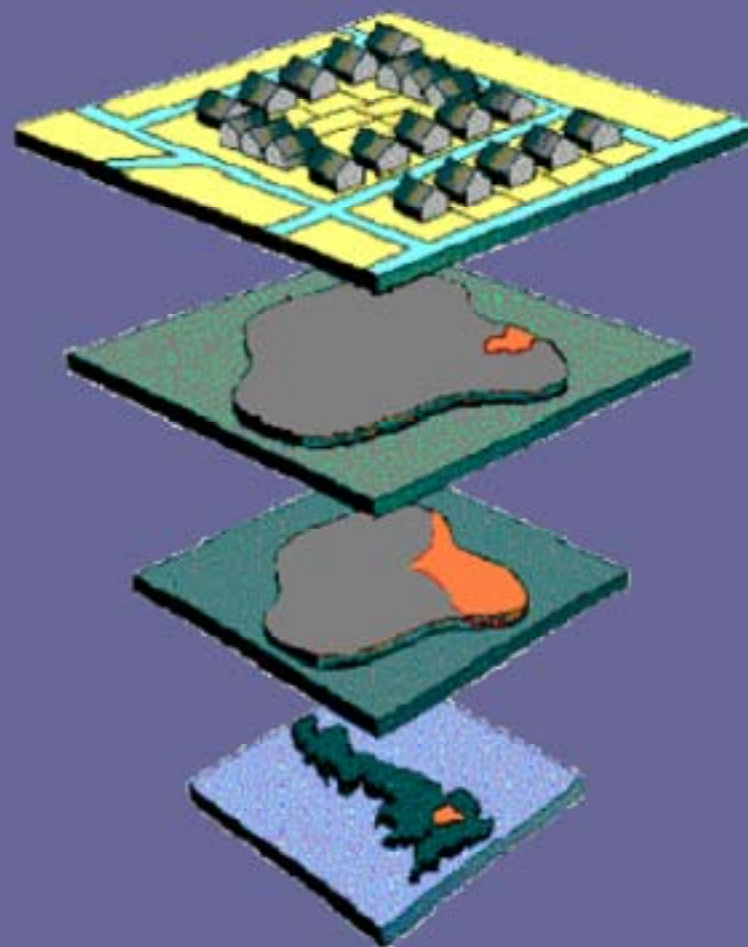
NG34

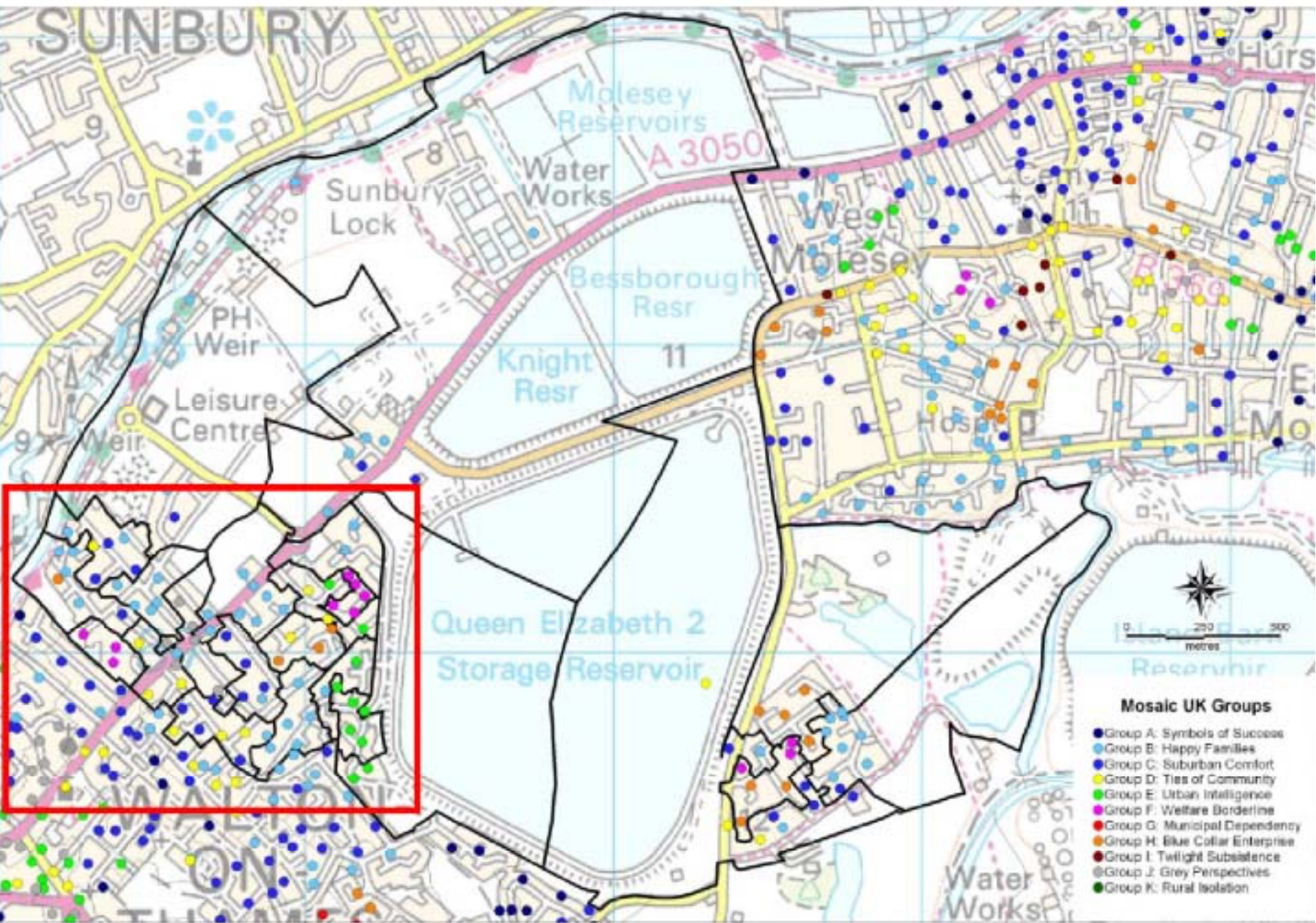
2,700 districts
8,600 households in each

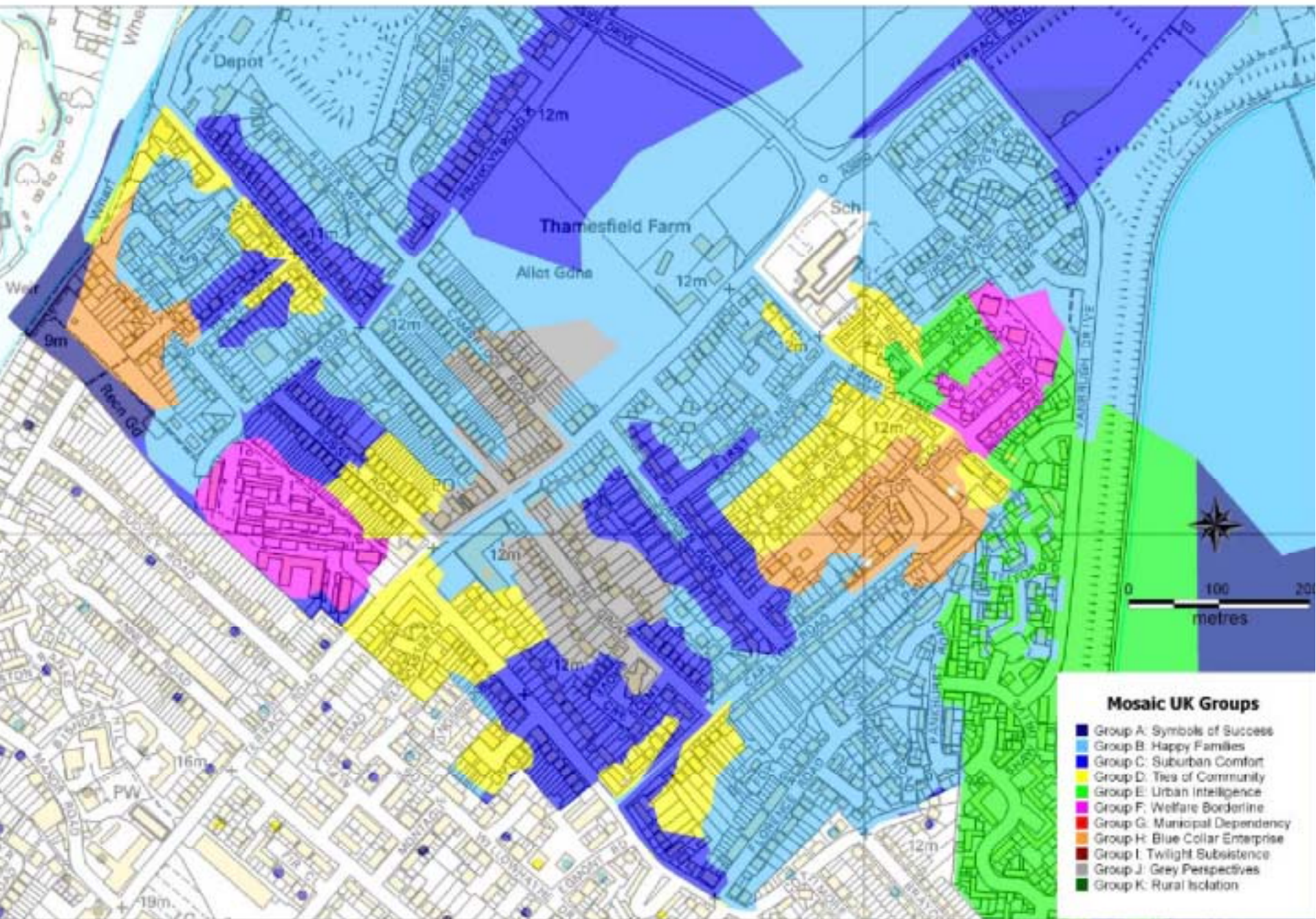
Postal Area

NG

120 areas
194,000 households in each







Research applications

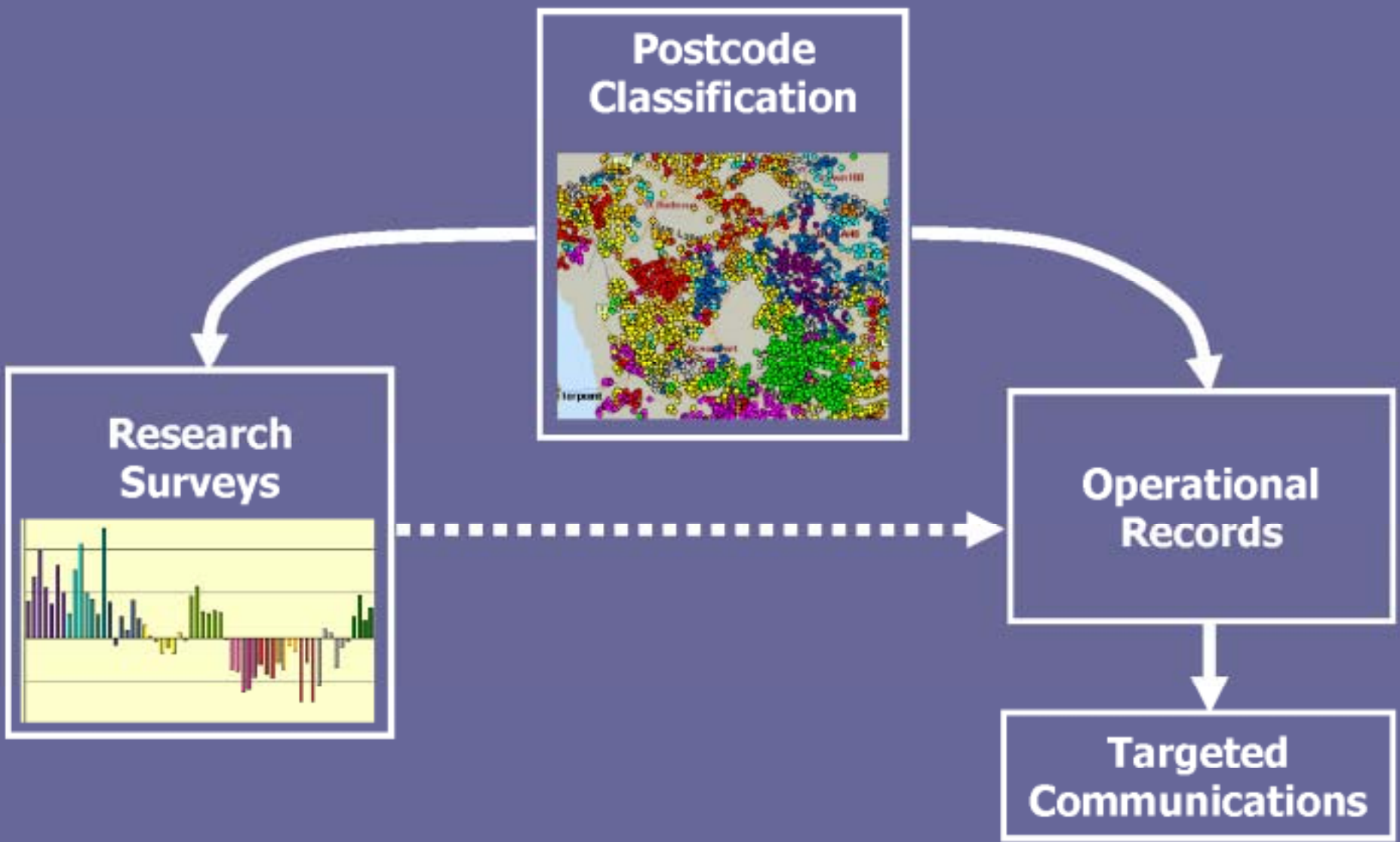
Significant domains of geodemographic analysis:

1. Area profiling (e.g. for administrative units)
2. Extrapolation of survey data (e.g. British Crime Survey)
3. Coding operational data sets (e.g. hospital admissions)

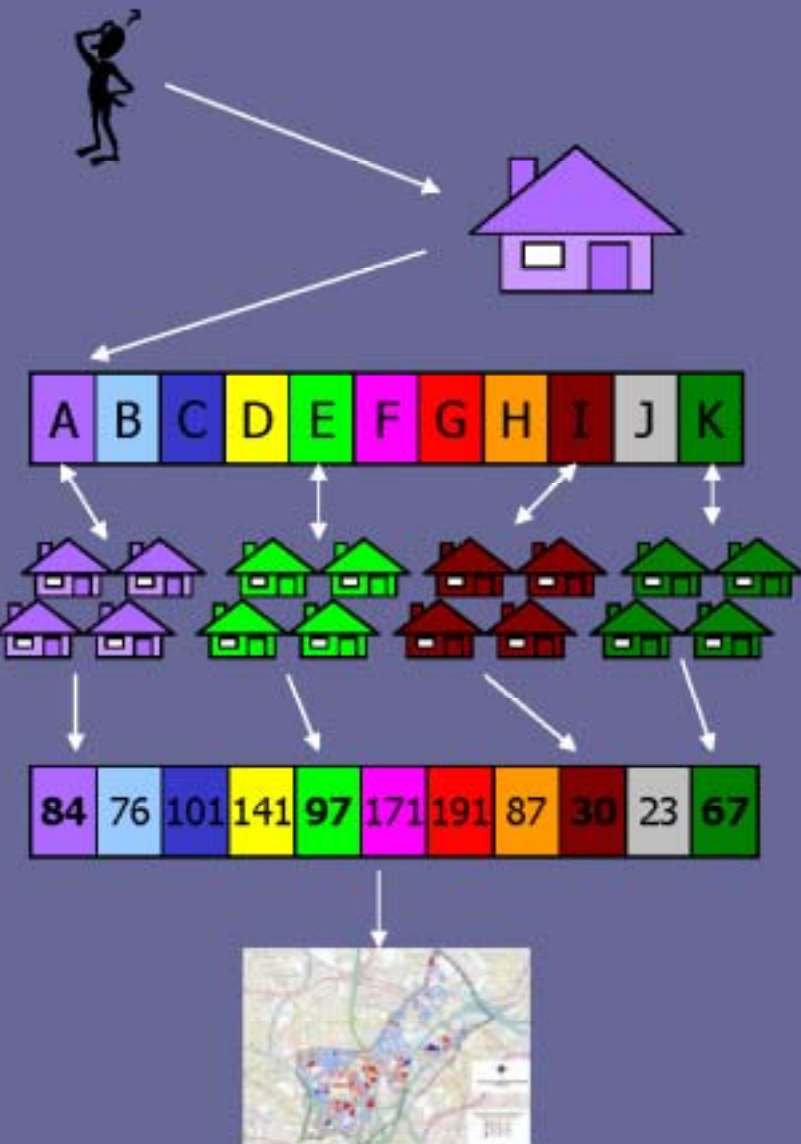
Specific applications of these techniques for Central and Local Government:

1. Performance benchmarking / assessment
2. Efficient communications programmes

Linkages

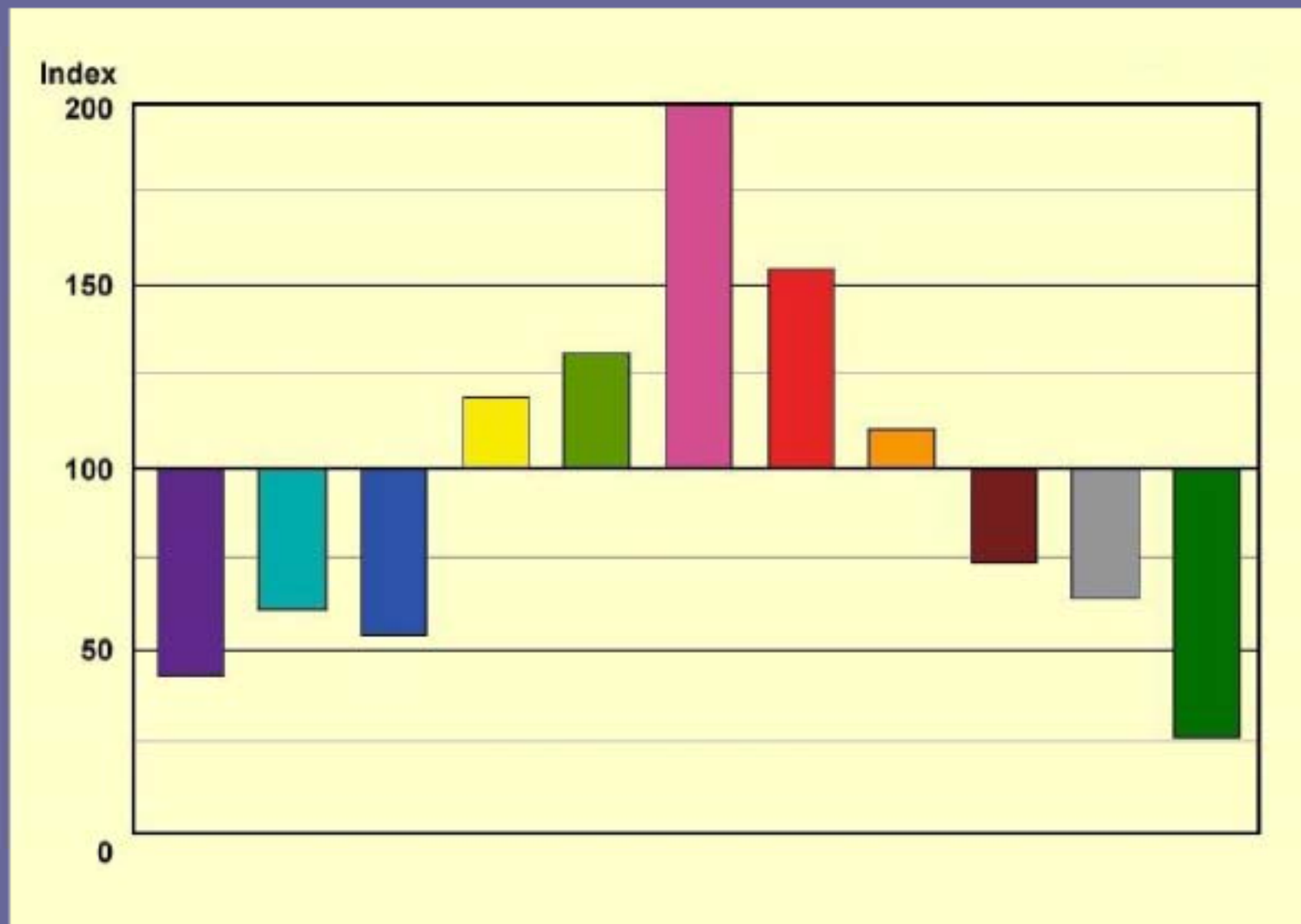


Geodemographic coding of surveys

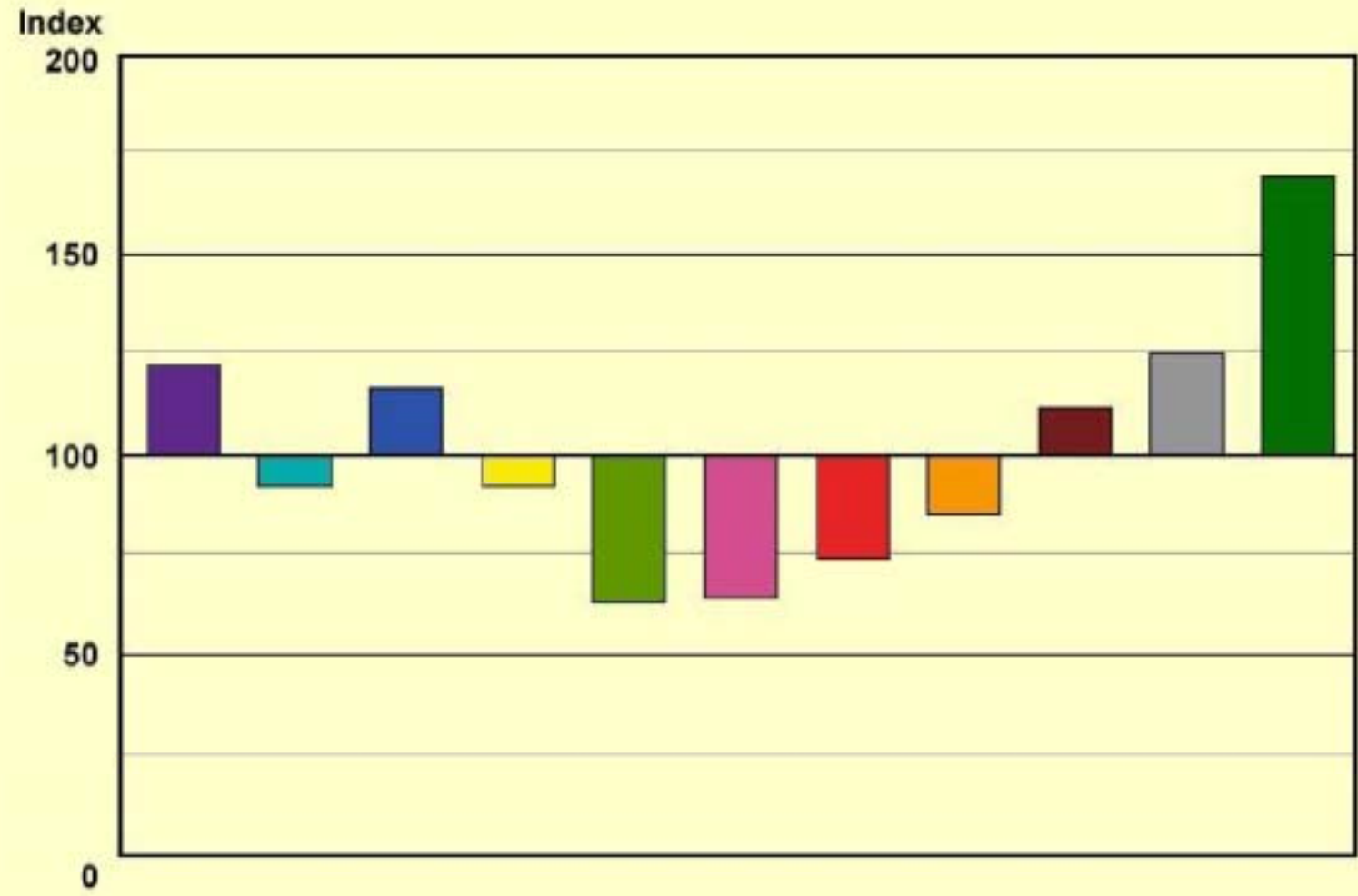


1. Survey sample
2. Respondents referenced by residential postcode
3. Geodemographic code appended to each respondents' postcode
4. Responses collated and summed by geodemographic categories
5. Index values created for each question/response for all 'neighbourhood types'
6. Index values analysed by category or for different geographic regions. Can be mapped to every postcode.

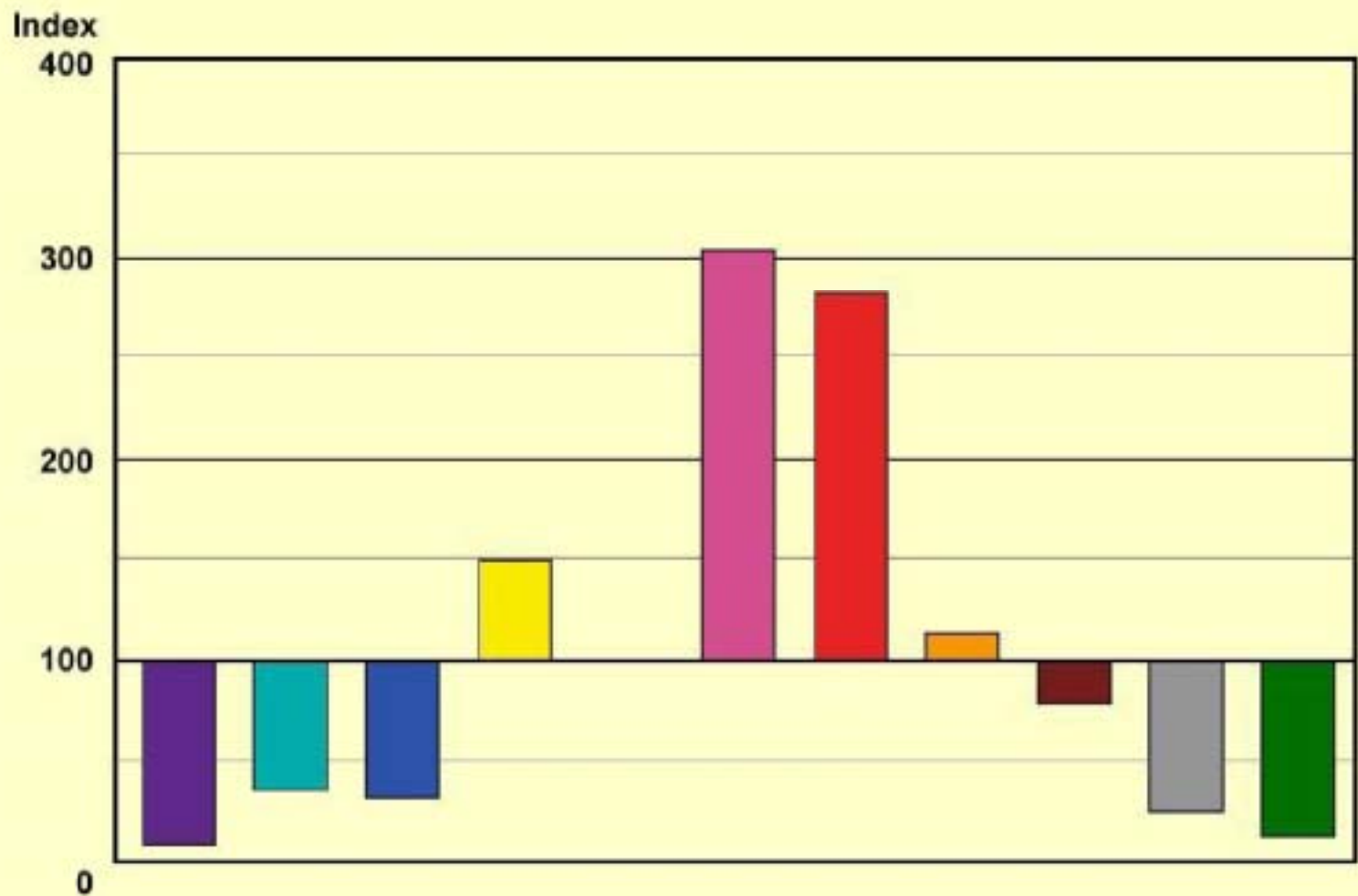
Noisy neighbours common problem



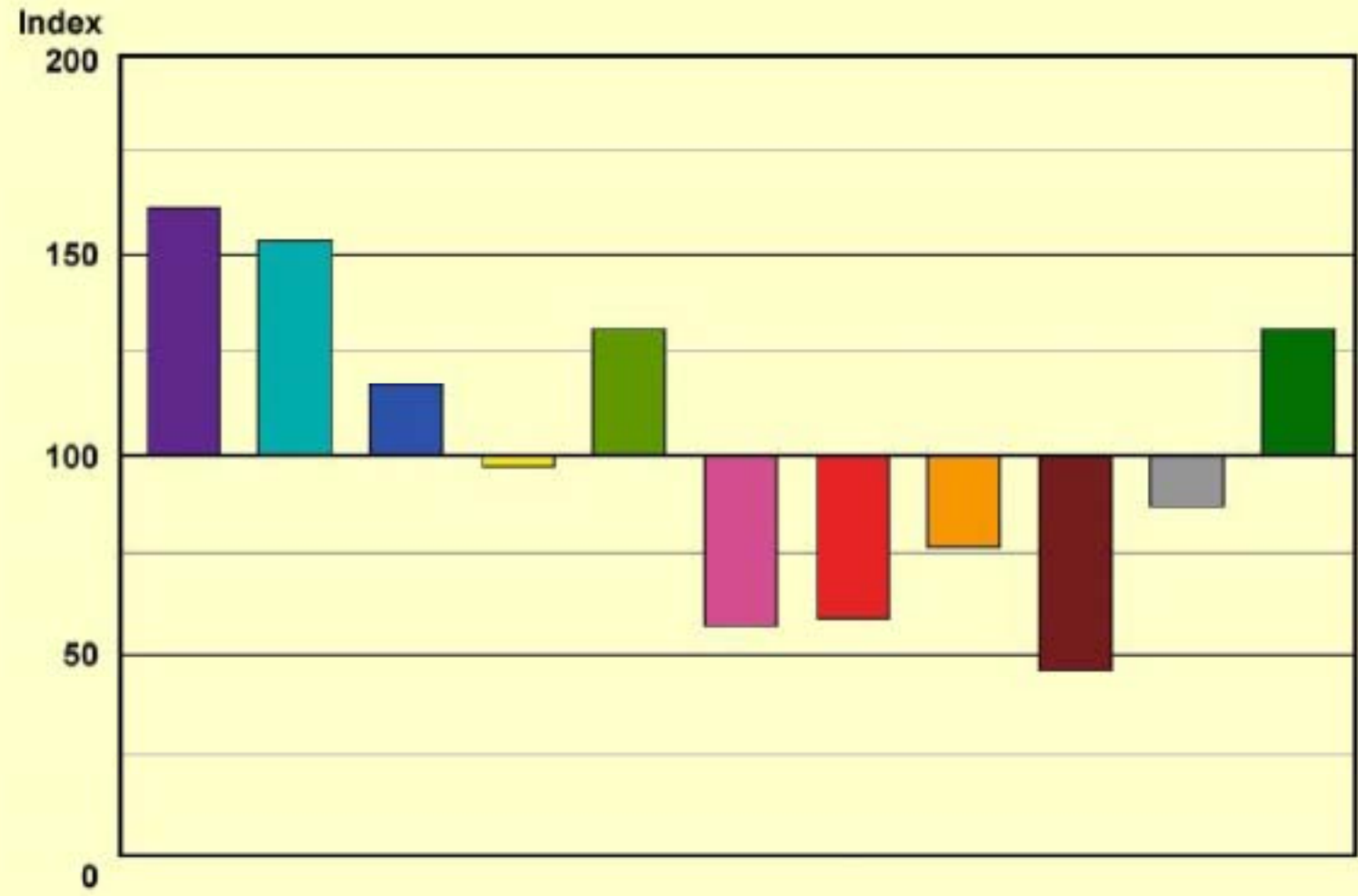
Neighbours help each other

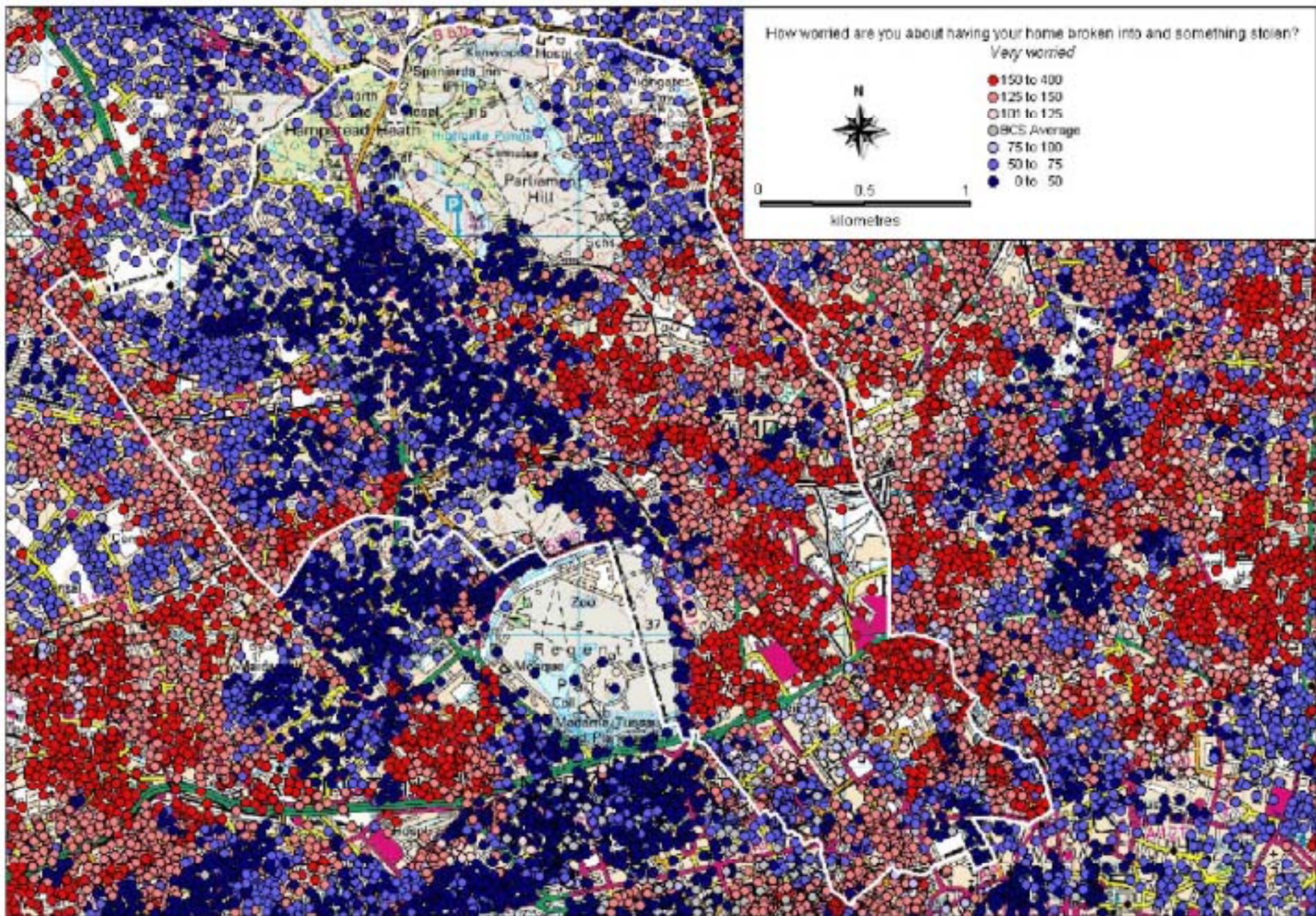


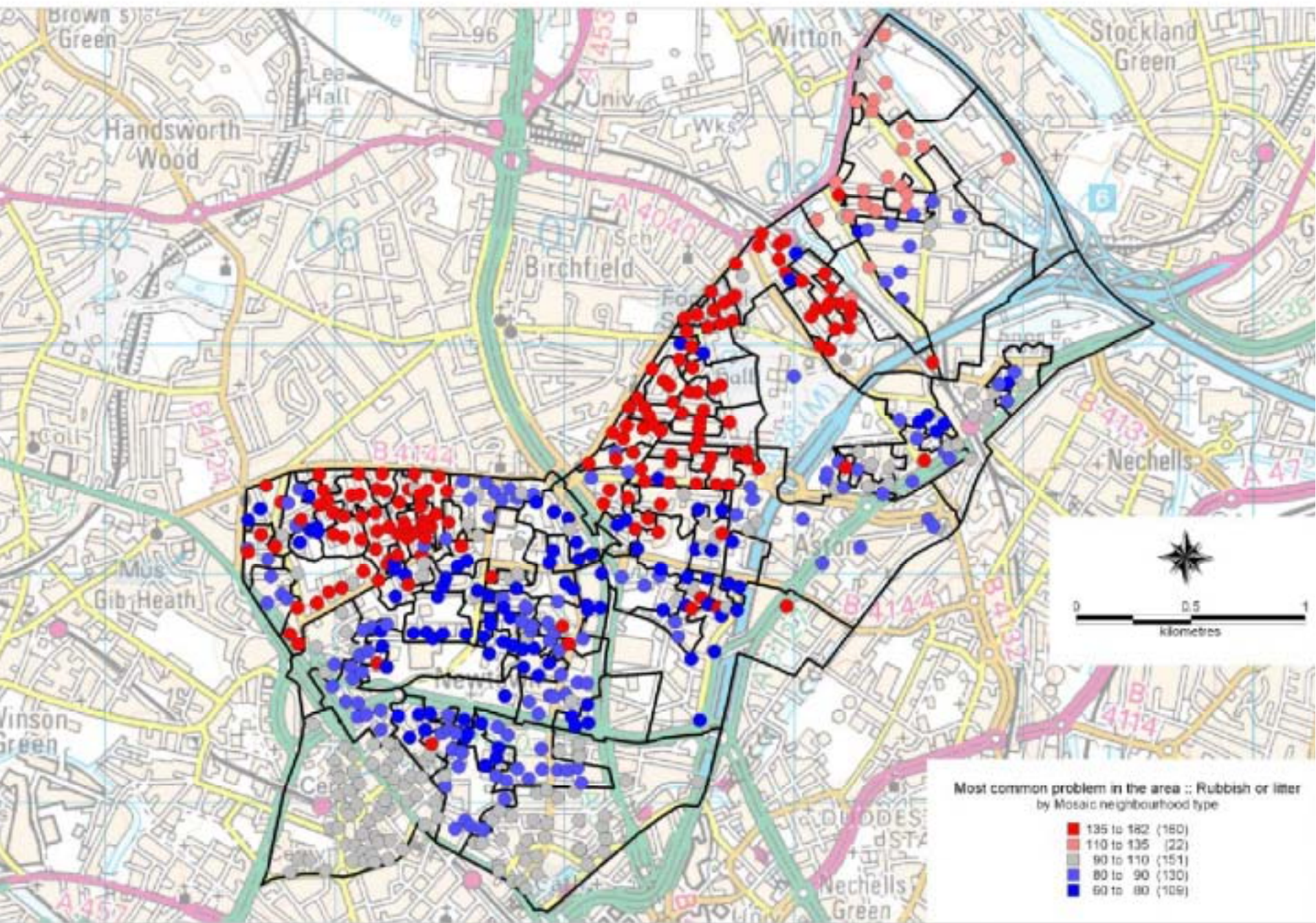
Bad place to live



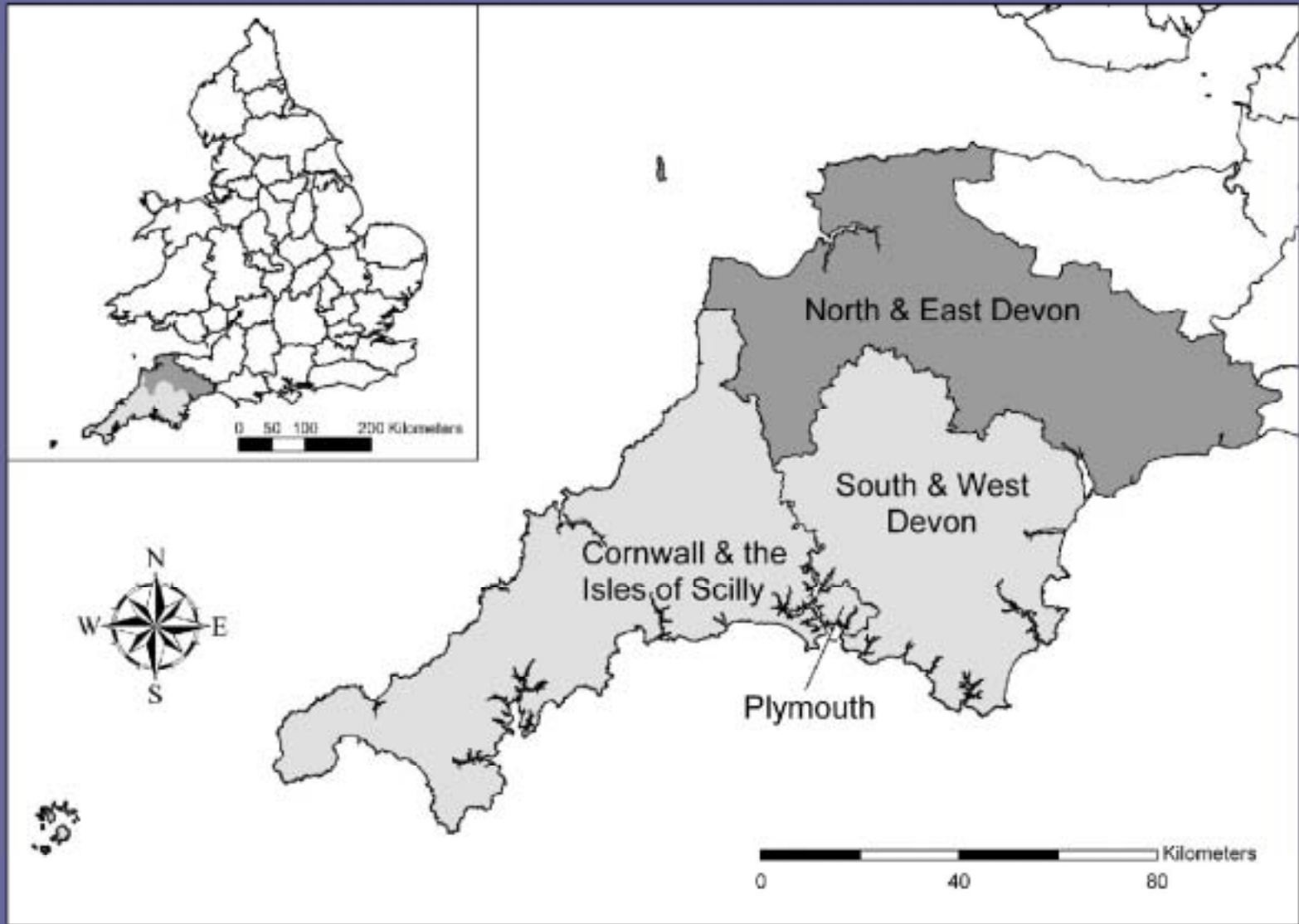
Connected to Internet







Devon and Cornwall Constabulary





North & East Devon BCU

- Key locations
 - Exeter, Barnstaple, Tiverton, Exmouth

- Total recorded crime in 2003/4
 - Devon & Cornwall Constabulary – 131,453

 - North & East Devon BCU – 36,247 (28%)

 - Exeter 14,332 (11% Force : 40% BCU)

Implementation of the National Intelligence Model

- Incident & Intelligence Management
- Community Intelligence?
- Analytical provision
- Predictive analysis

Why use geodemographics?

- Nappies
- Intelligence focus
- Opportunity to be effective and efficient
- Police performance in partnership

Operational data coding

- Reference each 'event' to a postcode
e.g. residence of: victim of crime, school pupil or hospital patient
- Collate records and calculate index values for each geodemographic group and type
- Extrapolate these index values (propensities) to the local

Example data include:

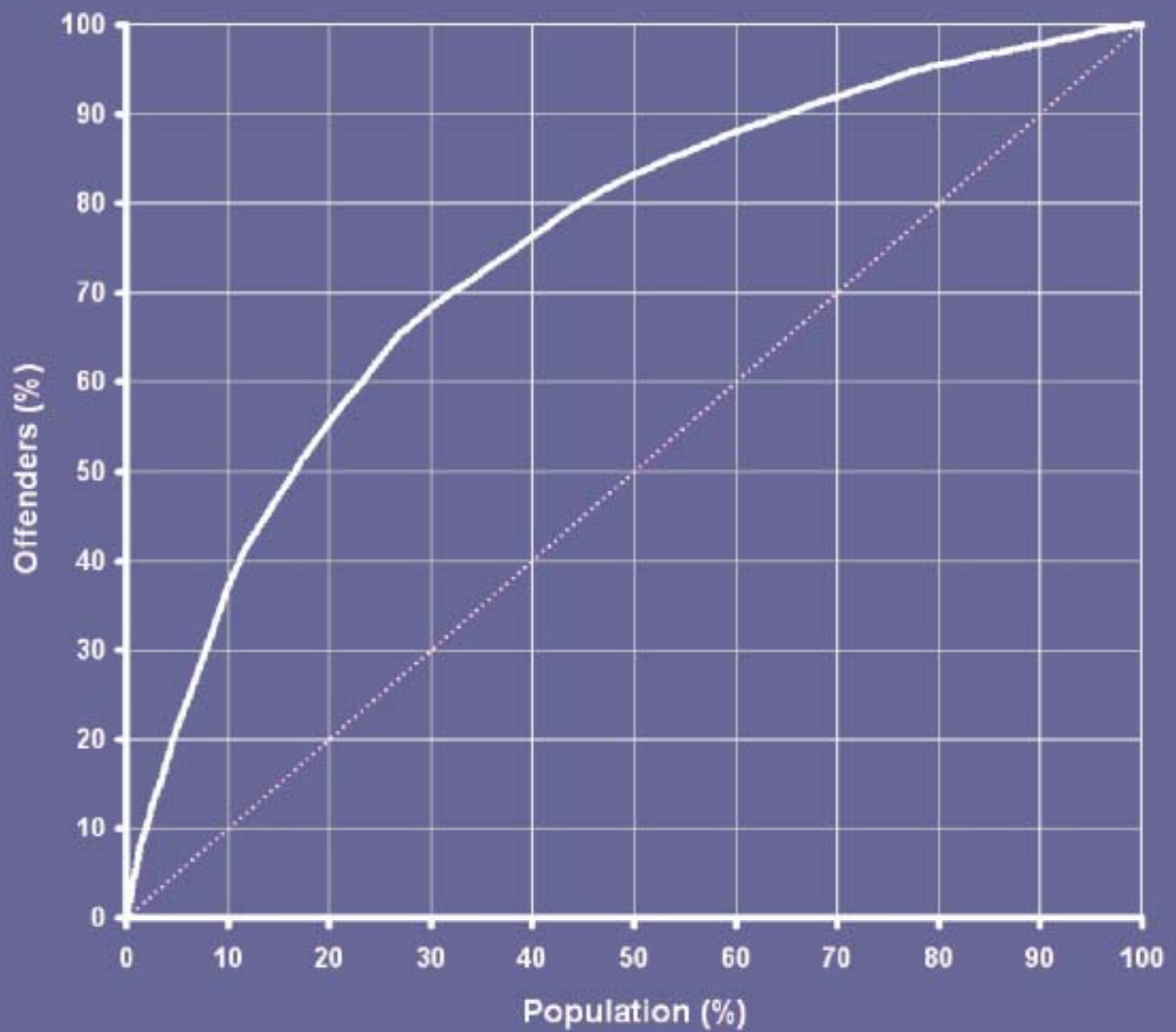
Event type, time, seasonality, reporting method, etc.



Operational data analysis

North and East Devon BCU

	Victims	Offenders	Detected	Desk	V=L postcode
A Symbols of Success	73	<i>18</i>	94	179	95
B Happy Families	85	100	95	110	82
C Suburban Comfort	69	43	74	108	<i>81</i>
D Ties of Community	172	183	124	63	111
E Urban Intelligence	186	129	98	<u>261</u>	113
F Welfare Borderline	<u>300</u>	372	<u>166</u>	165	<u>133</u>
G Municipal Dependency	168	<u>439</u>	130	135	101
H Blue Collar Enterprise	117	217	109	116	88
I Twilight Subsistence	88	115	95	77	101
J Grey Perspectives	<i>68</i>	45	78	60	97
K Rural Isolation	<i>68</i>	38	<i>73</i>	<i>33</i>	96

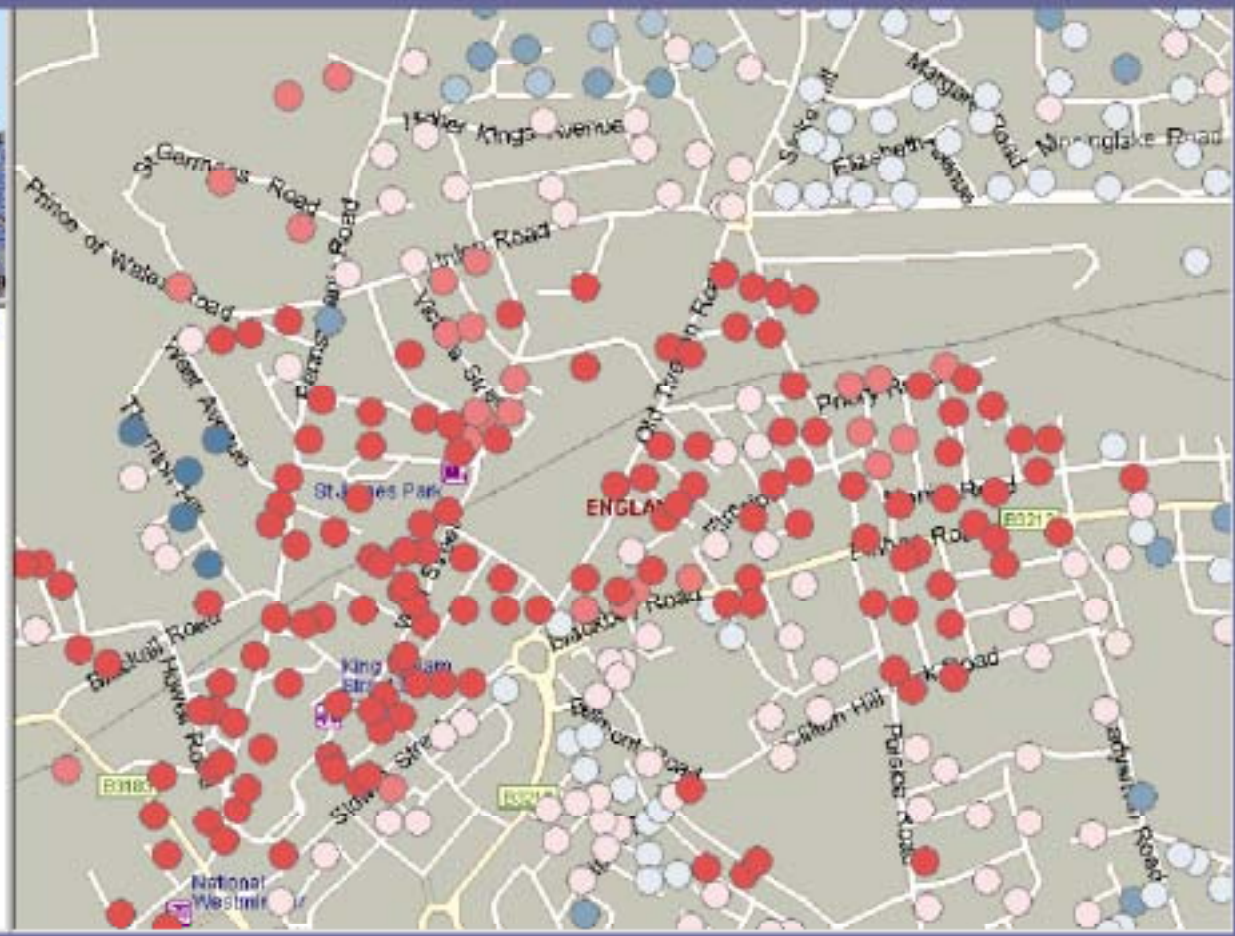


Predicted High Levels of Dwelling Burglary in Exeter



Dwelling Burglary by Pos...

- 351 to 400
- 251 to 350
- 201 to 250
- 151 to 200
- 111 to 150
- 91 to 110
- 50 to 90
- 0 to 49

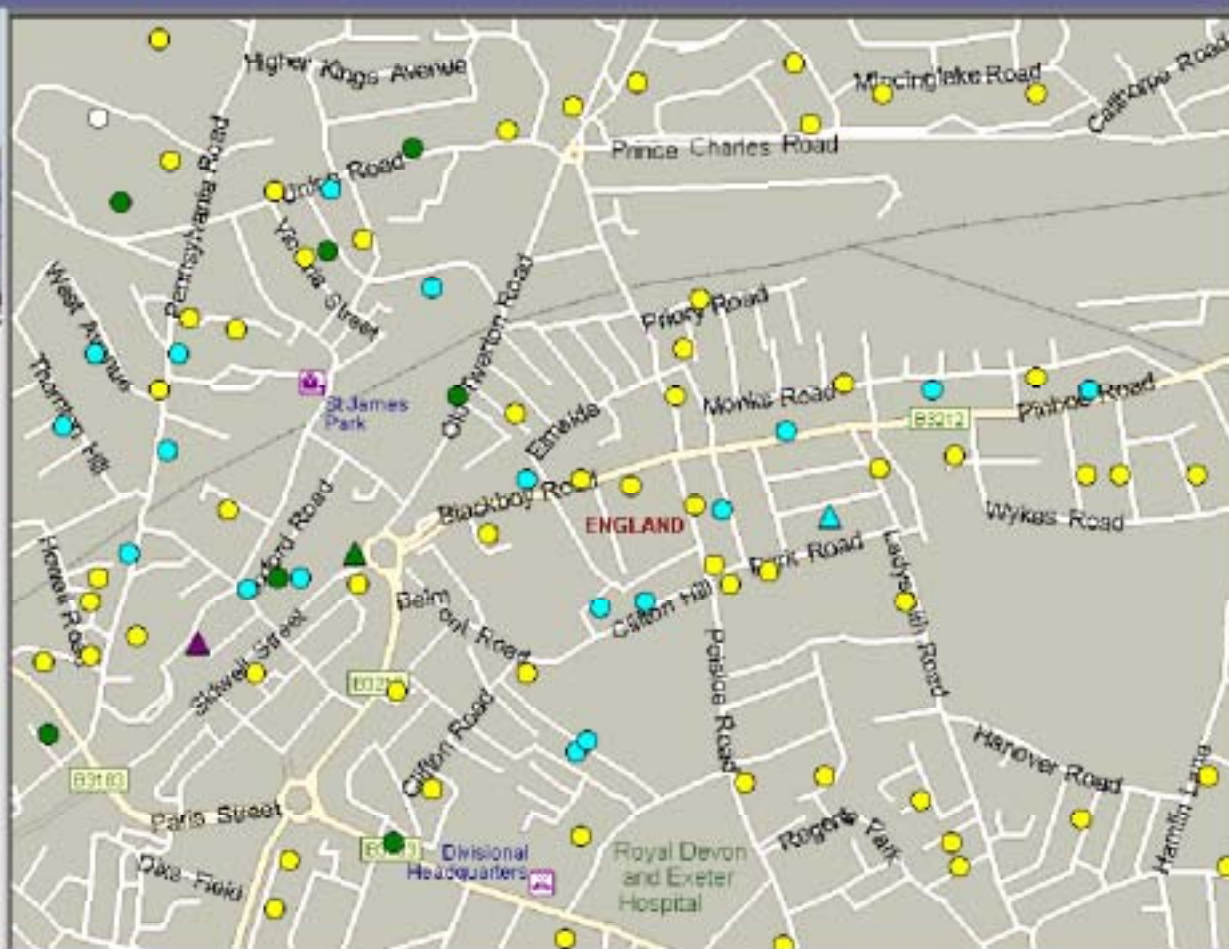


Actual Dwelling Burglaries in Exeter postcodes 2003 - 2004



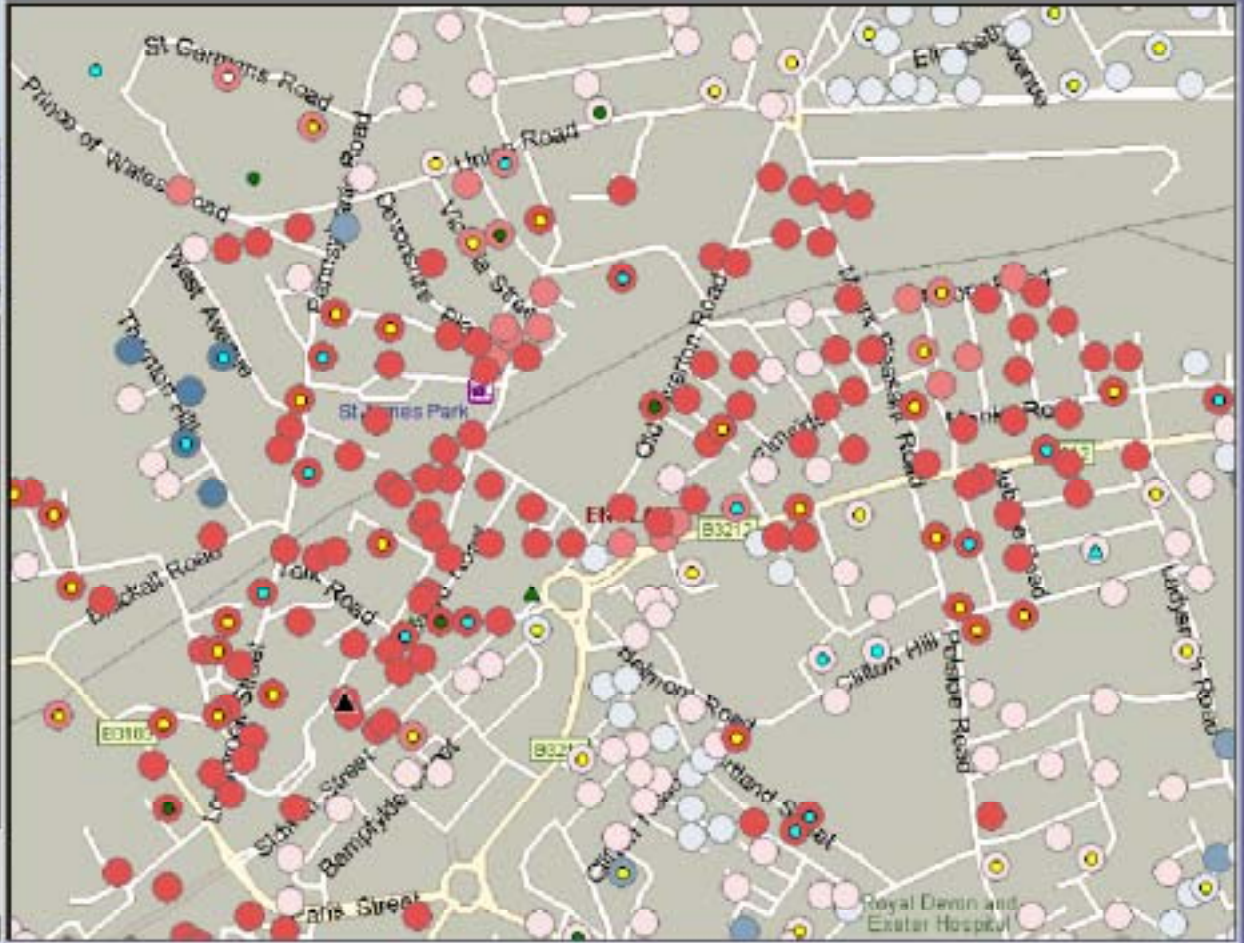
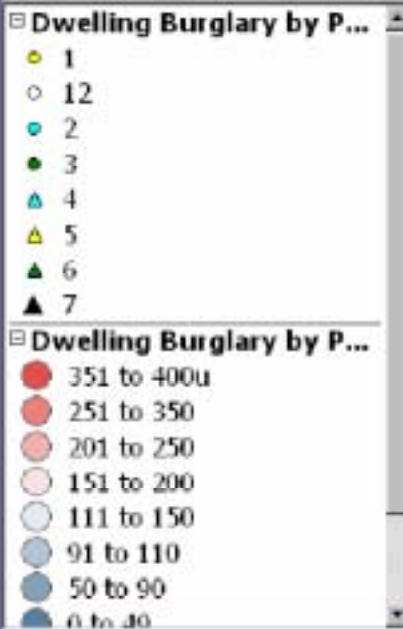
Dwelling Burglary by Pos...

- 1
- 12
- 2
- 3
- ▲ 4
- ▲ 5
- ▲ 6
- ▲ 7

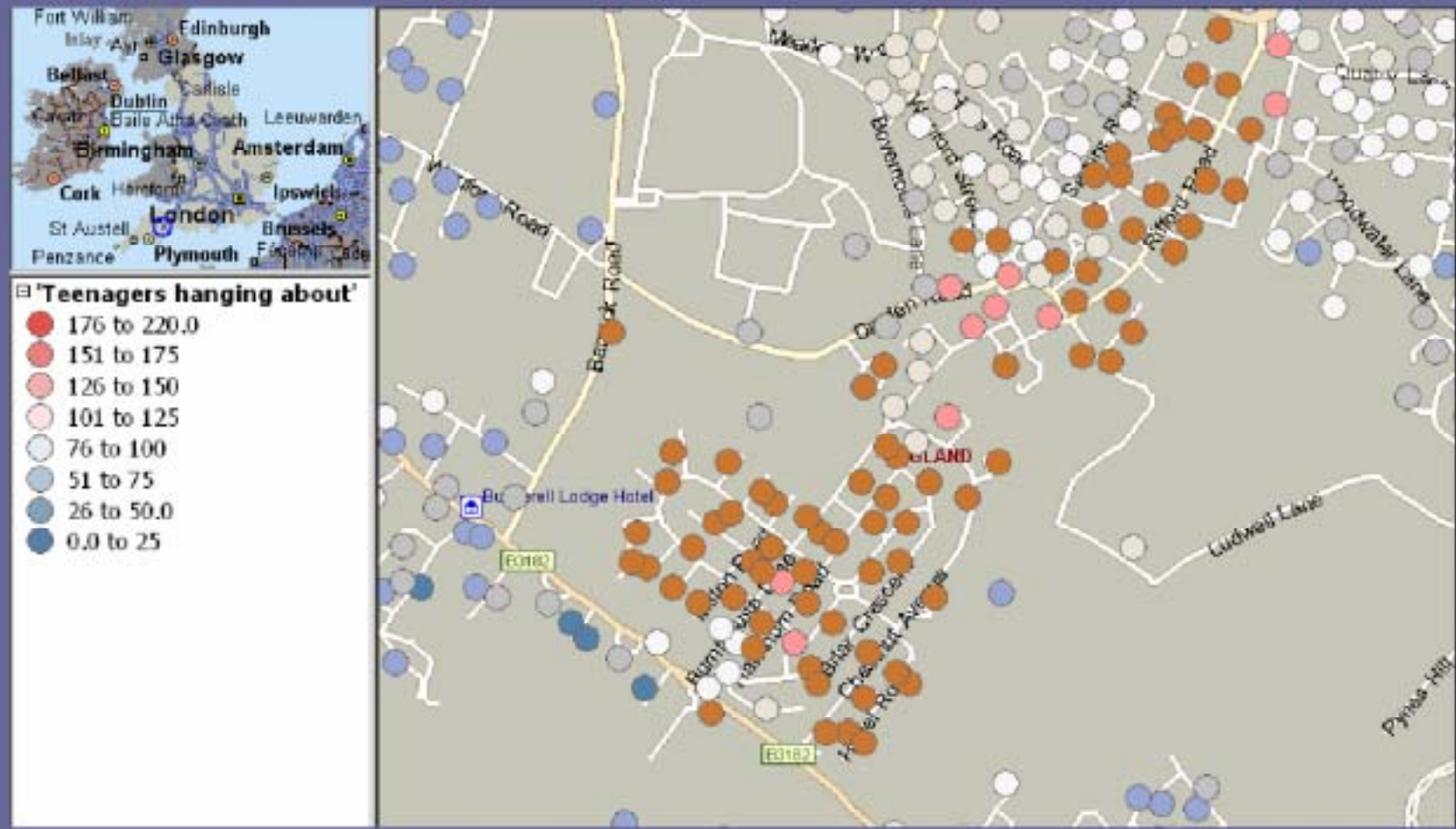




Predicted and Actual Dwelling Burglaries in Exeter by postcode 2003 - 2004



Concerns over 'Teenagers Hanging About' (from BCS)



Highest Levels of Concern

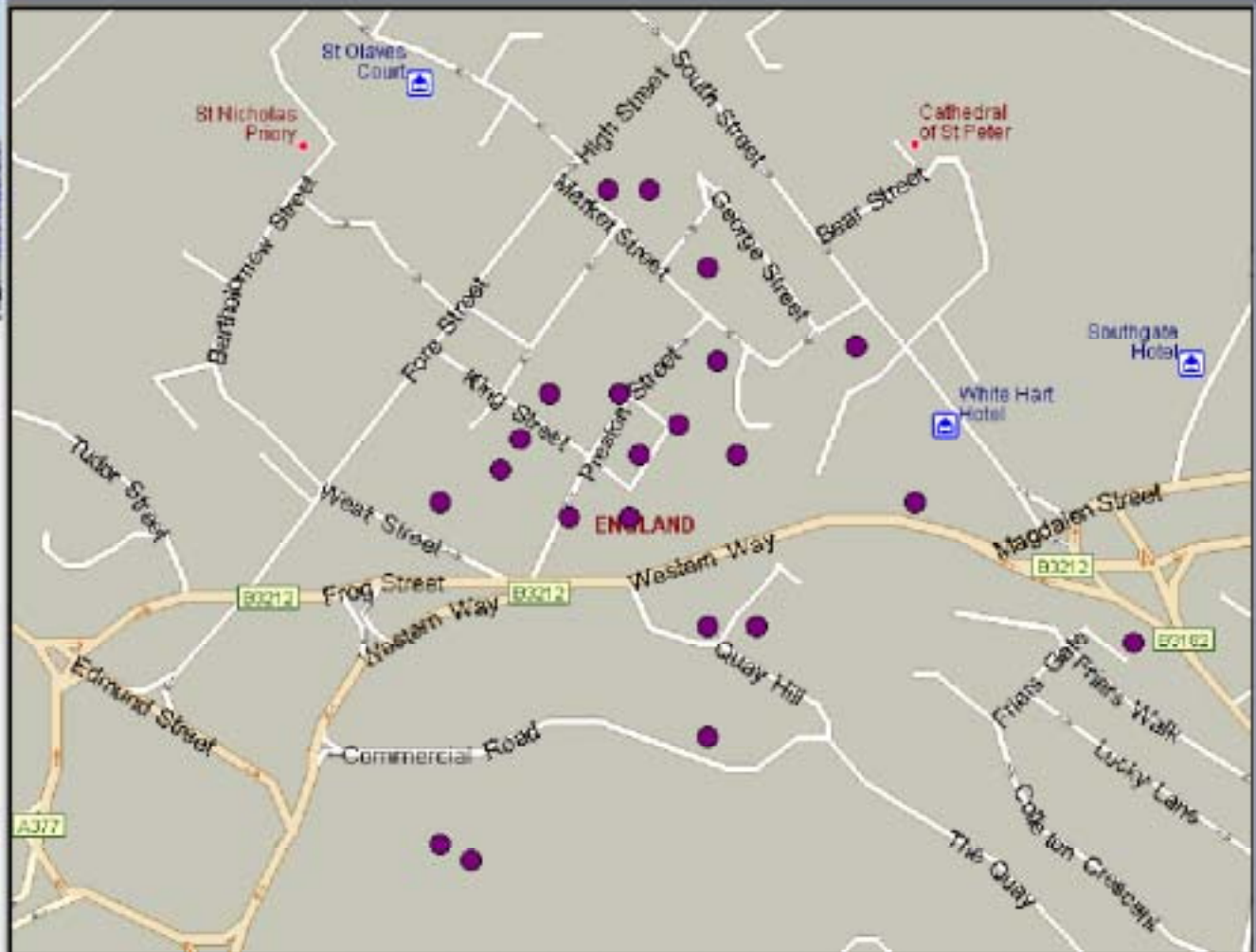
- From the British Crime Survey, the highest levels of concern regarding:
 - * Burglary
 - * Vehicle crime
 - * Rape
 - * Mugging
 - * And the greatest dissatisfaction with the police
- were expressed by a MOSAIC type with c. 1,000 people in the BCU.

Highest Levels of Concern (BCS)



Highest Concern (BCS)

● F39



Policing Styles

a neighbourhood framework

	Crime Profile			Social Capital			Summary	Policing Strategies		
	Common Crime Types	Crime Level	Fear Level	Level of trust	Informal Contacts	Formal Association		Appropriate Options	Reassurance – Control Signals	
A	Symbols of Success	Fraud, Traffic Offences	Low	Low	Fairly high (but not among Global Connections)	Low	High	Networks are often instrumental and not locally based	Engage with representatives	Leaflet drops to communicate information and campaigns
B	Happy Families	Fraud, some marital violence	Moderate	Low	Fairly high	Moderate	Moderate	New communities tend to have shallow networks	Child safety orientation	School based programmes
C	Suburban Comfort	Traffic Offences	Low	Low	High	Quite high	High	Well established networks	Engage with representatives; neighbourhood watch	Leaflet drops to communicate information and campaigns
D	Ties of Community	Alcohol related; domestic violence	Average (high in ethnic areas)	Moderate - low	High among local residents; fear of outsiders	Quite high (especially among minorities)	Quite high	Tends towards 'self policing'. May not be inclusive	Identify representatives; recognise parallel communities	Community wardens (Ethnic areas); response to environmental problems such as abandoned cars
E	Urban Intelligence	Snatching; mugging; credit card theft	High	Considered fact of life	Low	Informal contacts are not local	Patchy : high for those who are not transient	Networks are not local; local networks are often transient and one dimensional	Reliance on communications programmes; target hardening; intelligence led policing	Community wardens
F	Welfare Borderline	Drug dealing; child abuse; car crime	Very high	High	Low	Low	Very low	Low levels of social cohesion	Work with housing dept and social services;	Community wardens
G	Municipal Dependency	Drug usage; marital disputes; vandalism; graffiti; petty theft	Very high	High	Low	Low	Low	People may know each other but not trust each other	Liaison with schools and social services; surveillance; target hardening	Rapid response to criminal damage to the environment

Policing Styles

a neighbourhood framework

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		Common Crime Types	Crime Level	Fear Level		Informal Contacts	Formal Association		Appropriate Options	Reassurance – Control Signals
H	Blue Collar Enterprise	Alcohol related offences; serious traffic offences	Moderately high	Above average	Moderate	Moderate	Below average	Not ideologically communitarian but are responsible on specifics	Default strategy	
I	Twilight Subsistence	None	Moderate	Quite high	Moderate	Moderate	Below average	Low level of mobility impairs social integration	Reassurance; CCTV; anti-fraud campaigns	Enhanced visibility
J	Grey Perspectives	Few	Low	Underlying but unfocussed need for reassurance	High among known people / low among outsiders	High	Above average	Highly responsible for local conditions. Are at home much of the day. Natural 'wardens'	Reassurance; anti-fraud campaigns; neighbourhood watch	Enhanced visibility
K	Rural Isolation	Theft of equipment; planned, high value burglaries	Low	Anxiety about quality of police response	High among known people	High	High	High levels of responsibility to other community members	Reassurance on response times	More intensive communications with community leaders



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