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Seeing Places, Shaping Places: the small area mapping revolution

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Introduction

This *Local Work* argues that the implementation of public policy in many areas can benefit significantly from some kind of small area perspective, from economic development and reduction in health inequalities to skills development and worklessness interventions. Small area mapping is especially pertinent because local degrees of inequality, even within ward boundaries, have been so decisively exposed. Over the last fifteen years, the technological revolution has enabled an exponential growth in the potential for public bodies to map all kinds of need, condition and activity on the ground. Individual postcodes can be fed into mapping formats on almost any scale, including those of small neighbourhoods and clusters of them. Geographical areas can be defined by their characteristics – they no longer have to be imposed from above with the rigidity of, for example, electoral wards.

This transformation has been accompanied by a new demand of public sector organisations to keep up with the change conceptually, and to integrate new capacities into their development processes. Central government has set the pace, with its focus on neighbourhood renewal, and its searchlight on the neighbourhood and its dynamics, particularly through the groundbreaking work of the former Social Exclusion Unit.¹ However, little attention has been paid until quite recently to the capacity of the public sector, from politicians down, to use these tools effectively and creatively.

This *Local Work* provides a case study of how small area mapping has empowered managers in the public sector and their partners to inform policy priorities and guide their implementation in a way that is responsive to very local conditions. It draws on a process developed with Wolverhampton City Council's Library and Information Services, which is highly replicable because it is a way of communicating the dynamics of a range of indicators within individual

¹ For example, Social Exclusion Unit, 'Breaking the Cycle – Taking Stock of progress and priorities for the future', Office of the Deputy Prime Minister, 2004

neighbourhoods. Rightly, Wolverhampton wanted their library services to develop in response to the differing conditions surrounding each community library: economic, educational, demographic, health, financial, to name a few. They felt that this way, their strategic objectives would be implemented with local intelligence in more senses than one. Whilst this *Local Work* focuses on the example of Wolverhampton's libraries, the model of small area mapping presented here can certainly be applied to a broad range of service delivery relating to economic development and regeneration.

What is small area mapping?

The term 'small area mapping' here is taken to refer to the geographical unit of Lower Level Super Output Area (LLSOA), which was introduced after much consultation in the 2001 Census, and typically contains a population of around 1,500. Though electoral ward populations vary substantially, this unit will commonly break ward analysis into seven or eight small areas. LLSOAs came into their own as the geographical unit of the 2004 Indices of Deprivation, which ranked the 32,482 that make up the totality of England by their level of deprivation according to seven Domains or themes (Income Deprivation etc.) plus two subsets for Income Deprivation affecting children and older people.² The unit of 1,500 is robust enough to support some conclusions (unlike the much smaller unit of Output Areas), and has great flexibility in that clusters sharing characteristics can be identified, particularly in parts of wards or across ward boundaries. The data that go to make up each Domain have been made far widely accessible in the past five years, and have been substantially added to, particularly through the excellent data4nr.net website, which now offers 303 sub-district indicator datasets.³ These can be added to locally from postcoded administrative data (for example, Housing Benefit data or subsets which can provide contemporary snapshots to increase real time flexibility and control in project development). Small area mapping exercises that utilise data at the LLSOA level can have a number of uses. For example, they can be an effective way of creating community profiles, as a means of developing more targeted and relevant services that meet the needs of local residents. This process is illustrated below in the Wolverhampton case study.

Policy context

Integrated thinking at a local level is at an unprecedented high premium. Indeed, the sheer scale of mapping data available takes the challenge to the organisation and planning of public services to a potential unimaginable twenty years ago. The importance of developing a small area perspective has been reaffirmed by a number of government initiatives at the local area level. For example, there is a major challenge in addressing the small-area distribution of the district level National Indicator targets chosen for each Local Area Agreement: in many cases they cannot be reached without addressing geographical hotspots. Furthermore, the Audit Commission's introduction of the Comprehensive Area Assessment necessarily entails an understanding of neighbourhoods under pressure within authorities, and of the cumulative impact of different trends and interventions, both positive and negative, within a geographical area.⁴

Particularly relevant is the redirection of thinking about neighbourhood renewal towards a stronger focus on employment. As the CLG and DWP publication, 'The Working Neighbourhoods Fund' puts it:

Communities and Local Government has moved from a local authority based Public Service Agreement to focus on smaller areas of worklessness within the wider authority... Understanding spatial patterns of worklessness requires an in-depth analysis of the drivers of decline in different areas. There are numerous social, economic and

² For details of the latest Indices, see CLG, Index of Deprivation 2007
<http://www.communities.gov.uk/communities/neighbourhoodrenewal/deprivation/deprivation07/>

³ www.data4nr.net

⁴ Audit Commission, 'Comprehensive Area Assessment – Joint Inspectorate Proposals for Consultation', 2008

*physical factors that can interact and reinforce each other resulting in concentrations of deprivation and worklessness more specifically.*⁵

This, allied to the need to address Local Area Agreement National Indicator targets, demands an understanding of the whole dynamics of neighbourhoods, in order to launch an integrated challenge to deprivation in a way that is better informed than ever before. As the Audit Commission recognises very clearly in its Comprehensive Area Assessment consultation, departmental silos no longer make any sense, if they ever did. Its profound emphasis on wellbeing chimes with the priorities set out in Lord Darzi's Final Report for the NHS Next Stage Review⁶, as with the Government's Working Neighbourhoods concept. These demand a whole system approach that responds to the lives individual people live in individual communities: Whole Person, Whole System, Whole Neighbourhood. It is a steep learning curve for local partnerships, and integrated neighbourhood mapping is a first essential step to set the process in motion.

Wolverhampton: defining and profiling service catchment areas

It is clear then that small area mapping is becoming increasingly important to local authorities. Small area mapping can be applied to a wide variety of contexts, and the following case study explores how Wolverhampton Library and Information Services utilised an integrated mapping approach to meet the authority's strategic priorities. For 2007/8, Wolverhampton Library and Information Services' strategic priorities were to: extend the accessibility of the service; develop a Performance Management culture; develop its trained and reflective workforce; develop the learning role of libraries; improve services to children and their families; and ensure the service meets the diverse needs of the many communities across the city.⁷ The following section explores how small area mapping was used to develop community profiles, which in turn helped Wolverhampton City Council to achieve their strategic priorities.

What were the aims of this exercise?

The aim of the community profiling exercise was to develop a model for citywide and neighbourhood level community profiles, and within that develop a methodology for delineating service point catchment areas in an attempt to describe and analyse patterns of library service use. This involved identifying key data sets (such as children and young people, health, diversity, educational attainment etc.), which reflect Wolverhampton City Council's objectives, and then mapping them in catchment area format and analysing their distribution. The exercise also aimed to create a model for in-house sustaining and updating the profile, and also to create user-friendly profiles that inform future service strategies on the basis of this approach.

How does small area mapping enhance understanding?

The function of the community profiling exercise, facilitated by small area mapping, was to create a sustainable process for understanding the library service at a very local level. In particular, to inform and support its priorities through:

- ❑ identifying patterns of service and gaps in provision;
- ❑ identifying take up and gaps in take up of services;
- ❑ identifying good practice across the service;
- ❑ identifying locations of key under-represented communities and needs;
- ❑ providing a baseline to allow for the strategic allocation of resources and development of services across the city.

How was this information to be used?

The information gained through the analysis of the citywide and catchment area data was to be fed into the strategic planning process, and from that into the individual action plans of each service point. This would entail:

⁵ CLG and DWP, 'The Working Neighbourhoods Fund', November 2007

⁶ Lord Darzi, 'High Quality Care For All: NHS Next Stage Review Final Report', Department of Health, 2008.

⁷ Wolverhampton Libraries and Information Service Plan 2007/8

- ❑ targeting existing services to under-represented groups;
- ❑ redirecting services to more appropriate locations;
- ❑ accessing external funding to deliver service improvements;
- ❑ working with partner organisations (such as the PCT, Sure Start etc.) to develop service to respond to unmet need.

Stage 1: Setting the profiles in their policy and strategic context

This *Local Work* will now move on to look in more detail how small area mapping was used to deliver Wolverhampton Libraries and Information Service's (LIS) strategic priorities. Firstly, an initial Feasibility Study for the project examined the policy context and priorities of the Libraries and Information Service, the City Council and the Local Strategic Partnership. This was done with an eye to identifying relevant outputs and outcomes and understanding the nature of their impact. Work was done by a core project team comprising two Assistant City Librarians and the researcher to create a description of the relationship between policy priorities and broad indicators that provided a template for the project.

The viability of appropriate datasets in Lower Layer Super Output Area (LLSOA) format was then assessed as part of the Feasibility Study. This included some locally commissioned in-house service data (e.g. contemporary adults in workless households data from the City's Benefits Service), which were translated from postcode into LLSOA format by the Chief Executive Department's Policy Team.

Table 1: Objectives and relevant indicators (numbered) with Indicator number attached to relevant objective

LIS Objectives	Indicator
<ul style="list-style-type: none"> • Raising literacy standards of parents and children 5, 1, 4, 2 • Bookstart 5, 3, 2, 4 • Family Learning 5, 4, 2 • Baby+ clubs 3, 2, 4 • Homework support 2, 4, 5, 16 • Encouraging use of PCs by children from disadvantaged areas 6, 2 • Summer reading challenge take-up, particularly boys 1 	<ol style="list-style-type: none"> 1. Boys' reading ability at KS2 2. Economic disadvantage 3. Births 4. Attainment at KS2 overall 5. Educational attainment in adults 6. Households with a PC
<ul style="list-style-type: none"> • Books on prescription – supporting non hospital interventions 7, 9 • Provision of health information 7, 8 • Supporting positive lifestyles through access and intellectual stimulation 7, 9 	<ol style="list-style-type: none"> 7. Health inequality – years of potential life lost; mental health 8. Teenage pregnancy 9. Disability demographics
<ul style="list-style-type: none"> • Home Library Service take up 11, 10, 12 • Take up by BME communities 10 • Take up by people with disabilities 10 • Provision of debt / benefit information 13,12 	<ol style="list-style-type: none"> 10. Demographics: older people / BME communities / disabled people 11. Older people helped to live independently 12. Economic disadvantage 13. Debt
<ul style="list-style-type: none"> • Support for work placements 14, 15 • Provision of information on job / training opportunities 5, 14, 15 • Support for increasing employability skills – ICT / work based study 5, 14, 15 	<ol style="list-style-type: none"> 14. Unemployment 15. 16 – 19 NEET
<ul style="list-style-type: none"> • Work with AES to develop ESOL / Essential skills collections 2 or 14, 5, 16 • Basic PC awareness sessions 2, 6, 16 	<ol style="list-style-type: none"> 16. Attainment at KS4

<ul style="list-style-type: none"> • Supporting informal lifelong learning 2, 5, 10 • Supporting participation in post 19 learning 16 • Supporting creative writing 2, 5, 16 	
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It was decided not to go ahead with three of the indicators in the right-hand column as it was considered that there were no robust small area data for households with a PC. Other deprivation indicators are likely, in any case, to be a proxy for this. The numbers of teenage pregnancies were insufficient to support small area mapping, whilst small area data for NEET (people aged 16 to 18 not in education, employment or training) were also not available. The indicators for educational attainment and educational disadvantage were considered to be working proxies for this, though data for NEET are available at higher geographical levels.

The process attempted to identify the precise function of each indicator in relation to the objectives it is meant to inform. These functions were identified as denoting:

- **Prioritisation** - i.e. identifying the priority libraries where an indicator scores high or low as appropriate (though the profile identifies a score for every library in doing so).
- **Informing initiatives** – where the indicator will inform the approach to a particular objective in a particular library.
- **Outcome** – where the indicator will track actual progress towards an objective, where there is a direct causal relationship.
- **Overall progress** – where the indicator will track progress or otherwise, relevant to the objective, but where it is unrealistic to expect the library to have a significant or identifiable effect on progress.

This was done for each indicator. This initial description has since been developed into a fuller typology of the functions of output and outcome indicators in work for Newham Primary Care Trust, since the precise implications, and particularly the limitations, of indicators are often poorly understood.

Stage 2: Defining and mapping library catchment areas

Based on postcoded user data, the 158 LLSOAs in the city were each assigned to a library, thus creating 20 library catchment areas. In most cases, the library with the largest number of users in a small area was chosen. In a number of cases, there was not a clear majority, and other criteria such as transport links and location were used. A major advantage of this approach was the extent of needs, activity and deprivation data now produced in LLSOA format. Indicator and demographic data could then be aggregated into the cluster of LLSOAs that formed a library catchment area, and any updates would later be applied to the same aggregation of areas.

The function of the catchment areas created in this way is not to define where all the libraries' users come from, but to identify unique, manageable areas for individual branches to target their community engagement and marketing work. The level of library membership identified in each small area varied greatly. This highlighted important issues for the libraries' commitment to increase use and access.

Stage 3: Developing catchment area profiles

The main body of the report examines the distribution of each indicator across the city.⁸ But the key output comes in summary form: less than ten bullet points about each of the twenty library catchment areas, summarising their key features in terms of demography and the socio-economic, health and education indicators selected. These once again demonstrate the

⁸ Steve Griffiths, 'In The Right Place With The Right Service - Community Profiles Of Wolverhampton Libraries' Catchment Areas', Wolverhampton Libraries and Information Services, 2007.

profound and often thought-provoking differences between neighbourhoods that at first sight appear to have similar features. Two of the summaries are reproduced below as illustration.

i) Ashmore Park

- Pupils living in Ashmore Park catchment area did relatively well in tests at the age of 11 in 2006 – boys' reading scores were the fourth best of the 20 catchment areas; but only just over a third of GCSE pupils got 5 or more A-C Grades – the fourth poorest in the city.
- The 2001 Census found that adults aged 25-54 in Ashmore Park had a higher than average percentage with no or low qualifications.
- Ashmore Park had a lower than average percentage of households headed by someone aged under 60 where there was no-one in employment; a below average level of Council Tax Summonses, and of premature death.
- Ashmore Park had the second highest proportion of disabled older people receiving Attendance Allowance or Disability Living Allowance in its population, and the third highest number in the city (410).
- Ashmore Park had a relatively high proportion of older people in its population receiving Pension Credit because of low income.
- The proportion of disabled older people receiving the Home Library Service is lower than the level for the city.
- Take-up of early years library services are among the highest in the city.

The complex dynamics of this area are striking: the relatively high performance of 11-year-olds compared to 16-year-olds (though this may reflect demographic change: the point is to be able to ask the question); a higher proportion of adults with low or no qualifications than that of the city, but a lower proportion of workless households, Council Tax debt, and premature death; low take-up of the Home Library Service in an area of high need; yet high take-up of the Early Years Service.

ii) Bilston

- Pupils' educational attainment in Bilston Library's catchment area was about average for the city in 2006.
- The 2001 Census found that adults aged 25-54 in Bilston had a percentage with no or low qualifications (63%) substantially higher than the level for the city.
- Bilston had a higher than average percentage of households headed by someone aged under 60 where there was no-one in employment.
- Bilston had the third highest proportion of disabled older people receiving Attendance Allowance or Disability Living Allowance in its population, and the second highest number in the city (820).
- Bilston had the fourth highest proportion of disabled people aged 0-59 receiving Disability Living Allowance in its population, and the second highest number in the city (1,165).
- Bilston had a relatively high proportion of older people in its population receiving Pension Credit because of low income.
- The proportion of disabled older people receiving the Home Library Service is lower than the level for the city.

Stage 4: Wolverhampton City Council's use of the profiles to develop the Library Service

In summary, Wolverhampton Library and Information Services have made the following use of the profiles:

- The findings were used to produce fuller individual profiles for each service area. These included not only the profile data, but also showed the number of library users within each street of each designated catchment area. Library staff have since used this to prioritise streets with the greatest potential for marketing activities.
- The findings were used to focus events and activities at particular libraries - e.g. where there are particular education or health related problems, there has been an offer of specific activities and emphasis on particular areas of stock.
- The service has also used the findings to specifically promote areas of the service (such as the housebound delivery service) in areas that show the highest need.
- The findings were also used as a basis for a report which was submitted to Members earlier this year. This resulted in a Task and Finish Group being established which aims to look at how best to provide library services across the City.⁹

The service development process for each library has been impressive in its scope and detail. Below the Marketing Plan for Bilston Library is reproduced in full, developing out of the Profile Summary above, with its accompanying population and user profiling painstakingly added to.

Bilston Library Marketing Plan

- Bilston is the second largest library catchment area in the city. It has the second largest number of library members – and among the highest numbers in all age groups except older people. However, as a percentage of residents of the catchment area it has below average membership. Proportionally, it has one of the lowest levels of child library membership.
- Direct marketing of under represented streets.
- Use electoral roll to confirm number of residents in each street and prioritise streets by greatest potential and proximity to library.
- Market these streets with indirect and then direct marketing opportunities.
- Focus events, activities and displays to meet target and existing audience profile:
 - Existing audience primarily is 19-59's
 - Target audience should be children under 11 and adults over 60.
- Bilston had a substantially higher than average percentage with no or low qualifications – opportunities for access course intros, basic IT skills sessions, careers guidance etc.
- Increased promotion of Baby+ Club sessions in order to increase the number of children as library members. All babies, toddlers and children attending library activities and events should be encouraged to become a member of the library.
- Third highest proportion of disabled older people receiving Attendance Allowance or Disability Living Allowance in its population, and the second highest number in the city. Coupled with a low percentage of Home Library service use – promotion of the Home Library service to those residents unable to visit the library should be undertaken in order to at least bring level up to Wolverhampton average. Promotion of service for instance at local health centres – partnership working with carers, health visitors, GPs, social services etc. attendance at events.
- Over 60s can be encouraged to the library through the hosting of relevant advice surgeries and children and grandparent events.
- Community partnerships with the over 60s – linking with senior citizen social groups and seeking their opinion as to the future of the library service for them.

⁹ Personal communication, Assistant City Librarian, Information Systems, Wolverhampton City Council

- Appropriate author events – relevant genre to the demographic of the area.
- Promotion of events and activities based upon the environment – Breathing Places for example.
- Retail initiatives should be targeted towards encouraging library use by adults and the over 60s.
- The default initiative should be used to encourage lapsed users and defaulters back to the library service.

Conclusion

This *Local Work* has outlined an approach to integrated mapping that has served to empower managers in the public sector and their partners to inform policy priorities and guide their implementation in a way that is responsive to very local conditions. It has illustrated some of the processes involved in order to demonstrate ways in which the approach might be usefully replicated in other fields where a 'whole community' needs assessment at small area level might support tailored local strategies.

Adopting a small area approach to mapping can have a number of benefits. In particular, the creation of geographical units defined by relevant social and economic conditions can enable profiling that expresses the unique dynamics and challenges of a cluster of small areas, not clouded by 'interference' from areas within the same conventional geographical boundaries which do not have the same levels, or kinds, of need. It can also lead to a far more accurate focus of relevant resources. This in turn has a great deal to offer to the task of making a decisive shift in overall local authority priority indicators such as Local Area Agreement priorities, by sharpening the capacity to address areas with acute needs.

To achieve a comprehensive understanding of a neighbourhood in this way is to take a decisive step towards really engaging with local communities, and using local knowledge to empower both providers, and crucially, local populations. This is consistent not only with the holistic thrust of regeneration and economic development (for example, developing a skilled, healthy, employable workforce), but the whole direction of the area focus embodied in the Audit Commission's Comprehensive Area Assessment. The culture of delivery is going to change, and small area mapping is a key motor in ensuring that that change is effective.

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