Urban Sustainable Development Goal Pilot Project – Greater Manchester

For Greater Manchester LIP/Mistra Urban Futures

June 2015

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1 Introduction

1.1 Project Introduction

1.1.1 Sustainable Development Goals

The United Nations (UN) is currently developing a set of Sustainable Development Goals (SDGs) to shape the post-2015 global development agenda. The SDGs will replace the Millennium Development Goals and will apply across the global North and South. They are being formulated through a process anchored by the UN Secretary-General's Office and implemented by the Open Working Group (OWG). 17 Sustainable Development Goals are being proposed, one of which would relate to urban sustainability (see Appendix A for full list).

The open working group, has representatives from 70 countries, and had its first meeting in March 2013 and published its final draft, with its 17 suggestions, in July 2014.

The UN has conducted what is reportedly the largest consultation programme in history, through a series of "global conversations", which included 11 thematic and 83 national consultations, and door-to-door surveys. It also launched an online My World survey asking people to prioritise the areas they wanted to see addressed in the goals.

UN member states are due to approve the goals in September 2015 and they will be applicable from January 2016.

1.1.2 Proposed Urban Sustainable Development Goal

The global Urban SDG Campaign is supported by over 400 cities, major urban networks and institutions and has played a major role in ensuring the inclusion of the urban goal which aims to **Make Cities and Human Settlements inclusive, safe, resilient and sustainable** (Proposed SDG11).

The overall process of creating an operational framework is far from trivial, requiring consultation with national, regional and city-level authorities within various Member States of the UN on monitoring, statistical processes and innovation around targets and indicators. A number of targets and indicators have been proposed to measure progress against these goals.

Mistra Urban Futures has played a key role in the Urban SDG Campaign. In February 2015 the Centre launched a pilot study in five intermediate cities across the globe to test these proposed targets and indicators.

The cities are: Greater Manchester (UK), Gothenburg (Sweden), Bangalore (India), Kisumu (Kenya) and Cape Town (South Africa).

The project lead in Gothenburg is Director of Mistra Urban Futures, Professor David Simon with lead researcher Helen Arfvidsson.

The aim of the pilot study is to test the potential targets and indicators in five cities in the Global North and South. The study will assess how well existing data collected locally maps onto the proposed global indicators; how the data and evidence base differs across very different urban contexts; and how well global targets and indicators would 'translate' into local urban environments.

The city pilot's reports will be collated and analysed and will report to the international Urban SDG Campaign conference in June 2015 in Gothenburg.

1.2 Terms of Reference for Greater Manchester Pilot Project

1.2.1 Terms of Reference

The pilot project aimed to:

- identify the gaps between required and existing data
- identify actions to fill those gaps
- find out how feasible those actions would be and carry out some pilot 'models' of data collection.

The project involves collaboration with different local authorities and agencies. Whilst providing an important test-bed for the global indicators, it is hoped that local partners will also benefit through a gap assessment of the existing evidence and data that is collected and reported on in the city-region.

More broadly, the project connects with the wider work of the Greater Manchester Local Interaction Platform through providing a context to examine the relationships between global, national and local action on urban sustainability; the role of targets and indicators in changing behaviour and urban transformations and value, organisation and management of 'evidence' across different policy domains at the urban level.

1.2.2 Team details

The School of the Built Environment's Centre for Sustainable Urban and Regional Futures (SURF) at the University of Salford is partnering with Quantum Strategy and Technology consultants to deliver the pilot study in Greater Manchester.

University of Salford:

Dr Beth Perry, SURF Director - project oversight

Alex Wharton, Research Fellow – literature review, project support

Quantum Strategy & Technology:

Louise Marix Evans, Director – project lead and research and analysis

Gill Fenna, Director – research and analysis, leading on data analysis/manipulation

1.2.3 Workplan and timeline (proposed & actual)

This is a short and intense pilot project with the fixed end point of the Gothenburg workshop on 8 June. The workplan and timeline both proposed and actual are shown below. The project start was delayed which compressed the timeline, and has meant it has not been possible to hold a feedback workshop with stakeholders to discuss the results. Sections of this report will be shared with different stakeholders with the hope that they can feed in comments before the final draft is signed off.

Task	Proposed	Actual	Commentary
Inception meeting	Early February	24 February	With David Simon, project lead
Familiarisation with USDG	Early February	February	
Local Authority Workshop	w/c 9 February	24 March	See workshop results below

Recruit LA partners	w/c 16 February		LA partners were not formally recruited but were engaged through workshop contacts or contacted by telephone with ongoing conversations, emails and meetings to carry out pilot data gathering, analysis and discussions on applicability of indicators
Desk Research	March		
Academic inputs	Early March	Literature Review	
Pilot projects	March/April	April/May	
Project workshop	w/c 27 April	n/a	
Report drafting and submission	Late April/May	19 May	This was ongoing throughout the pilot phase
USDG Workshop preparation/attendance	June	8 June	

1.2.4 Pilot USDG Workshop

A workshop was convened at the University of Salford on 24 March, with invitations to officers of local authorities across Greater Manchester, Association of Greater Manchester (AGMA) representatives and other public sector organisations. United Utilities (the water and energy company for Greater Manchester) was also invited.

A total of 12 people participated from five local authorities (Manchester City Council, Salford City Council, Stockport Metropolitan Borough Council, Rochdale Borough Council, Bury Council) plus officers from AGMA's Civil Contingencies and Resilience Unit and the Low Carbon Hub and United Utilities. Lead Researcher, Helen Arfvidsson also participated. (A full list is provided in Appendix A.)

The workshop:

- Introduced the project and aims
- Introduced the USDGs and discussed their relevance to Greater Manchester
- Engaged officers in mapping USDGs onto existing data collected to get a 'first view' of potential matches/gaps
- Reflected on the gaps and how existing data might be manipulated or looked at differently
- Discussed the implications and practicalities (costs) of new data collection
- Agreed the most relevant and important USDGs to pilot and request pilot project partners
- Discussed benefits to local authorities of participation

The key discussions were:

Strengths of the USDG proposal

- Enables cities to address sustainable development in locally relevant ways
- Enables learning from others in theory and practice, e.g. on transport
- Provide scope for cities to interpret targets locally and create suitably SMART indicators

Weaknesses of the USDG proposal

- Poor definitions of targets and indicators. At worst, they are not specific, measurable (e.g. lack of data on participation in planning; highly subjective in the case of cultural heritage), or relevant ("buses run every 20 minutes is not useful if they don't go where you want to go"; "promotion of cultural sites is required, not protection)

- They would need to be redefined locally to facilitate implementation and redefined globally to make them useful strategically both in making comparisons and in learning from others.
- Many of the indicators are "not as interesting as the targets" or do not relate to the aims of the target.

Opportunities arising locally to engage with USDG related to devolution (currently only specific to a few cities including Greater Manchester) which is promising to open up opportunities to take action and to monitor performance locally e.g. in relation to bus transportation and spatial planning. However active engagement with the USDG is threatened by cuts in local authority funding and in performance/data management in particular.

Discussion of the indicators was useful, but also important was to agree which targets would be most relevant to pilot. The group voted on the following priorities in order of importance:

Target 11.6 Reduce the environmental impact of cities

Target 11.1 Housing

Target 11.5 Disasters

Target 11.2 Transport

The group requested that a note be sent out to local authority Chief Executive Officers explaining the project and requesting officer support for it, this request was sent out after the workshop by Dr Beth Perry.

1.2.5 Delivering the Pilot Projects

Following the workshop, the data for the indicators was researched, with an increasing number of different types of data sources located and analysed, contacts suggested and telephone conversations and meetings held with officers in the local authorities, Transport for Greater Manchester and the Civil Contingencies and Resilience team. Statisticians at the Office for National Statistics and within government departments, particularly DCLG were very helpful. A full list of people interviewed and contacted is provided with thanks, in Appendix A.

The findings for each indicator are detailed in the later sections, with a summary in Section 2.

1.3 National and Local Data Collection

There are two routes for data production:

- “Bottom-up”: i.e. collected at the local level and collated to form national data. The size of the local area is determined by the nature of the data, and can be either city-region area (e.g. transport data), local authority area (e.g. waste collection statistics) or smaller ward area or Lower Super Output Area (LSOA) (e.g. deprivation indices)
- “Top-down”: i.e. collected nationally and then modelled down to a lower level such as the local authority area (e.g. CO2 emissions) or regional level (e.g. Family spending survey)

The data source and methodology used is an important consideration in determining whether city-level data is available or valid. Much of the national data is collected through surveys: where this involves only a few thousand people it is not sensible to attempt to disaggregate it to the city level, and further local surveys would be required to produce relevant local data. Where the data is

produced locally (e.g. local authority level) it is usually possible to aggregate this to provide city-level data, but this may not necessarily provide a more relevant figure (e.g. data on atmospheric pollution is more useful at individual locations than a city-wide average).

Data for this pilot has been collected from the most relevant or accessible source. Where useful data is not available for the city, consideration of whether to make estimates based on other levels of data has taken into account the source and size of the original dataset. In some instances it has been possible to provide estimates for the cost of work needed to produce a local dataset. In other cases it has been recognised that local data collection without a corresponding national data framework in which it should sit would serve no purpose.

The main providers of data are shown below.

- The **Office for National Statistics**[1] (ONS) is the UK's largest independent producer of official statistics and is the recognised national statistical institute for the UK. It is responsible for collecting and publishing statistics related to the economy, population and society at national, regional and local levels. It also conducts the census in England and Wales every ten years.
- **Private companies** are contracted to provide statistics and intelligence on consumer behaviour and segments of the population at a postcode or very local area level. They provide services to the private and public sector, and include Experian and Acorn. In some areas, private contractors manage the complete data reporting and modelling system (e.g. air quality, waste).
- Data is not provided consistently across the four countries of the UK – England, Wales, Northern Ireland and Scotland may have different models for data. For example the weighting of different domains for the Indices of Multiple Deprivation vary between these administrations, and England's does not include the Housing domain.
- **Local authorities** report a range of data to the UK Government. There has been a reduction in the burden of data required since the change of government in 2010 and the ending of the local authority National Indicator Set of mandatory and optional indicators. A new Single Data Set was produced which listed data to be submitted to government departments.

The kind of data gathered reflects government policy, and therefore is a political issue. Alongside the imperative to reduce the burden and cost of data collection and reporting by local authorities, the government is consulting about changes to important centrally collected data such as the English Housing Survey.

In this research the dependence of local authorities on good national data for local decision making has become apparent. For example, the annual English Housing Survey is vital to understanding housing trends and conditions across the country, and its data enables the reduction of costs to local authorities in providing data on housing stock conditions to the Department for Communities and Local Government. Without the English Housing Survey data, BRE Modelling of housing stock would not be possible at its current price.

Local authorities continue to face funding cuts, while still being required to deliver their statutory duties. Access to data is vital for them to understand their residents and local areas and to design interventions that improve life for those in their communities. Some local authorities no longer have the expert officers who analyse and report important data.

[1] http://www.ons.gov.uk/ons/index.html

Where data reporting to government has been reduced, there can be a danger that valuable information that can help build the case for investment may no longer be available. PTEG (Passenger Transport Executive Group) for example, collects data from all the Passenger Transport Executives in England to enable both benchmarking over time and provide a solid evidence base to use in maintaining a strong voice with central government.

This slimming down of data requirements combined with local government funding cuts mean that further data collection requirements on cities are unlikely to be funded, unless the data is seen as extremely relevant to support local decision making and planning. Where data is already gathered at either the local or national level, that does not match the USDG indicator data, but is considered appropriate for local needs, it is highly unlikely that UK cities would change their reporting mechanisms to meet the international indicator. Any further data collection must clearly meet a local need.

1.4 Introduction to Greater Manchester

Greater Manchester is a city-region in the North West of England. In 2011 its population was 2,682,500 and the number of households was 1,182,892[2] (2011 population census).

Its built-up area spans 493 square miles/1,277 km^2

Greater Manchester has 10 local authorities which work together voluntarily under the Association of Greater Manchester Authorities (AGMA) and have recently formalised a new statutory body, **t**he Greater Manchester Combined Authority (GMCA).

Some aspects of governance are delivered at the local authority level, while others are delivered at the Greater Manchester level: these bodies and agencies are introduced within the sections on each indicator where they are relevant to the pilot project.

The population is shown for each local authority district below:

Metropolitan district	2011 population	% change since 2001
Manchester	503,127	▲28.1%
Wigan	317,800	▲5.4%
Stockport	283,300	▼0.4%
Bolton	276,800	▲6.0%
Salford	233,900	▲8.2%
Trafford	226,600	▲7.8%
Oldham	224,900	▲3.5%
Tameside	219,300	▲2.9%
Rochdale	211,700	▲3.2%
Bury	185,100	▲2.5%

Not all the area is actually urban and there are some areas on the fringes of the countryside and moorland. The ONS produces data on built-up areas and built-up areas with subdivisions alongside

[2] Source: Department of Communities and Local Government - Calculation of Council Tax Base for Formula Grant Purposes CTB (October 2012)

LA boundary data – this assists local planning, comparisons etc. The boundaries of the built-up area data do not always correspond to the LA boundaries, since they reflect the built environment. (See: 2011 Built-up Areas - Methodology and Guidance, ONS, June 2013). Greater Manchester Built-up Area has a population of 2,553,379 according to the 2011 Census: the second largest in the UK after the greater London Built-up Area, and 13th in Europe.

For practical purposes, this pilot project takes the most commonly used data which follows the local authority area boundaries. Throughout the pilot study only one person has referred to the 'built-up area' data, an officer from the Environment Agency.

In the coming years, devolution of powers and budgets to the Greater Manchester Combined Authority and transition to a directly elected mayor[3] will deliver changes in many areas including: Housing – control of a £300m Housing Investment Fund; Transport – devolved and consolidated transport budget; bus franchising and integrated ticketing and Strategic Planning.

[3]www.gov.uk/government/uploads/system/uploads/attachment_data/file/369858/Greater_Manchester_Agreement_i.pdf

2 Summary of Targets for Greater Manchester

The indicators that can be reported for Greater Manchester (subject to various caveats detailed in the following sections) are shown below.

Target	Indicator *Secondary Indicator (italics)*	GM Data
11.1: By 2030, ensure access for all to adequate, safe and affordable housing and basic services, including the upgrading of slums.	Percentage of urban population living in slums or informal settlements	9-20% depending on definitions
	Proportion of population that spends more than 30% of its income on accommodation	Not possible to collect
11.2: By 2030, provide access to safe, affordable, energy-efficient and accessible transport systems for all people and goods, improving road safety and expanding public and non-motorized transport, with attention to the needs of those in vulnerable situations.	Percentage of people within 0.5 km of public transit running at least every 20 minutes	63% with mid to high level accessibility on GMAL score
	Share of trips by walking, by bicycling, and by public transport	40%
	Share of income spent by urban households on transport (by income quintile)	Not available at city level (but collected nationally)
	km of high capacity light rail public transport per person for cities with more than 500,000 inhabitants	0.00004
11.3: By 2030, achieve more equitable and efficient land use through participatory urban and regional planning and management.	Ratio of land consumption rate to population growth rate at comparable scale	Not collected or considered appropriate
	Proportion of cities with legislation that promotes participatory mechanisms related to urban planning and local decision-making that ensure a fair representation of the urban population, including slum dwellers and informal workers.	Yes
11.4: Strengthen cities' efforts to protect and promote cultural and natural heritage	*Percentage of budget provided for maintaining cultural and natural heritage* *Number of public libraries per 100.000 people*	Not collected
11.5: By 2030, significantly reduce the social, health, economic and ecological risks and impacts of disasters, environmental	Percent of cities with more than 100,000 inhabitants that are implementing risk reduction and resilience strategies informed by accepted international frameworks	Yes

change and disease outbreaks by better designing and managing cities, protecting people in vulnerable situations.	(such as forthcoming Hyogo-2 Framework).	
	Economic losses related to GDP caused by disasters	Zero
	Proportion of population living in high-risk zones	Not available for cumulative risk.
	Number of deaths, injuries, and displaced people caused by natural disasters annually per 100.000 population	Zero
	Number of housing units damaged and destroyed	Zero
11.6: By 2030, reduce the adverse environmental impacts of cities, paying special attention to biodiversity loss, air quality, construction materials, and waste management	Percentage of urban solid waste regularly collected and well managed (disaggregated by E-waste and non-E- waste)	77.4% Local Authority Collected Waste (LACW) collected and well-managed 97.4% LACW well-managed 0.9% LACW is separately identified as e-waste (significant under-reporting)
	Fine particulate matter (PM 2,5 concentration)	10.69 µg m-3
	Percentage of wastewater treated within an urban agglomeration	100% for households (99% if septic tanks not considered as "treated")
	GHG emissions tons/capita	6.0 tonnes/capita CO2 No data for GHGs
	Proportion of recycled from municipal waste	46% LACW recycled, re-used or composted
11.7: By 2030, provide, maintain and encourage access to safe, inclusive and multipurpose public space	Area of public space as a proportion of total city space *Proportion of total public space in a city that is assigned to support livelihoods of the poor* *Urban green space per capita* *Proportion of urban areas located fewer than 300 meters away from an open public space* *Number of reported crimes (homicide, injures, and theft rate) committed annually in urban areas, per 100.000 population*	Not collected

3 Target 11.1 Housing

Target based on Bangalore Outcome Document January 12 – 14, 2015

By 2030, ensure access for all to adequate, safe and affordable housing and basic services including the upgrading of slums.

Indicators examined:

Percentage of urban population living in slums or informal settlements

Secondary indicator:

Proportion of population that spends more than 30% of its income on accommodation

Definitions used: UN-Habitat has developed a definition of a slum household in order to be able to use existing household-level survey and census data to identify slum dwellers among the urban population. A slum household lacks any one of the following five elements:

- Access to improved water (access to a sufficient amount of water for family use, at an affordable price, available to household members without being subject to extreme effort)
- Access to improved sanitation (access to an excreta disposal system, either in the form of a private toilet or a public toilet shared with a reasonable number of people)
- Security of tenure (evidence of documentation to prove secure tenure status or de facto or perceived protection from evictions)
- Durability of housing (permanent and adequate structure in non-hazardous location)
- Sufficient living area (not more than two people sharing the same room).

Not all slums are the same and not all slum dwellers suffer from the same degree of deprivation. The degree of deprivation depends on how many of the five conditions that define slums are prevalent within a slum household. Approximately one-fifth of slum households live in extremely poor conditions, defined by UN-Habitat as lacking more than three basic shelter needs.[4]

3.1 Percentage of urban population living in slums or informal settlements

It would now be politically impossible for an urban area of the UK such as Greater Manchester to acknowledge the presence of slums or informal settlements. Many slums and poor quality housing were cleared from the UK's urban industrial areas under the Housing Act 1930, which encouraged mass slum clearance. Local authorities could compulsorily purchase areas of housing and demolish them to make way for new blocks of flats or houses. Slum clearance continued through the 1960's to 80's and even as late as 1999 the

[4] UN-Habitat, (2006), State of the World's Cities 2006/7. See: http://www.unhabitat.org/documents/media_centre/sowcr2006/sowcr%205.pdf

legislation was used to purchase and clear houses in Manchester. During the early 2000's a new programme of compulsory purchase of unfit or hazardous homes (depending on when they had been surveyed) was started in areas of 'housing market failure', including the Greater Manchester boroughs of Oldham and Rochdale, Manchester and Salford.

Greater Manchester, of course, aims to provide access to all **to adequate, safe and affordable housing and basic services,** and laws exist placing a duty on local authorities to provide affordable, decent and safe housing. While slums have now been cleared, there is a legacy of aging housing stock in poor or deteriorating condition for which repair costs are unaffordable for residents. Capital funding and area improvement grants historically played a significant role in arresting the spiral of decline and improving property conditions particularly, in the low value/low income areas of pre 1919 housing, but since 2011, with the removal of all capital money allocations for housing renewal, this activity has almost completely ceased.

Local authorities provide grant funding and carry out group repair schemes to prevent areas of housing falling into disrepair and a spiral of decline.

For GM's policy aspirations on housing see Section 10 of this report.

In order to assess what relevance the indicator has to Greater Manchester and to locate applicable data, five elements in the slum definition to housing in Greater Manchester are discussed below.

3.1.1 Water and Sanitation

1. Access to improved water (access to sufficient amount of water for family use, at an affordable price, available to household members without being subject to extreme effort) 2. Access to improved sanitation (access to an excreta disposal system, either in the form of a private toilet or a public toilet shared with a reasonable number of people)

The Water Act 1991 provides for access to improved water and sanitation. UK water companies may not disconnect households from water in case of non-payment of water bills. UK water supply and wastewater prices are controlled by the regulator Ofwat, and water companies have schemes in place to support customers experiencing difficulty in paying their bills. For these elements of the indicator, Greater Manchester and its water utility company, United Utilities can report that all the population has access to improved water and sanitation. This viewpoint has not been contradicted by any of the housing officers we spoke to, and was backed up by the Consumer Council for Water.

Therefore these two elements of the slum indicator do not apply in Greater Manchester.

3.1.2 Security of Tenure (evidence of documentation to prove secure tenure status or de facto or perceived protection from evictions)

This is a relevant element of the indicator for Greater Manchester. In the private rented sector tenancy agreements are most commonly Assured Shorthold Tenancies, introduced by the Housing Act 1988. They are typically for 6 or 12 months, after which the tenant has no right to remain. In practice, if the landlord does nothing, they become 'periodic', i.e. they roll over from one month to the next, but the landlord can require the tenant to leave with one month's notice. This type of tenancy is thus insecure.

For tenants of Registered Providers (this term includes housing associations, council housing, arms' length management organisations etc.) tenancies are more secure, after a successful introductory

period, with Assured Tenancies. An Assured Tenancy is secure, in that the landlord has to provide a strong reason for eviction such as non-payment of rent, or anti-social behaviour. This situation varies between housing providers as some also act as agents for private landlords using Assured Shorthold Tenancies.

There has been recent research into the security of tenure for residents in the private rented sector, who may be fearful of eviction if they complain about the housing conditions or request repairs. UK housing charities Shelter and Crisis published *A Roof Over My Head - A longitudinal study of housing wellbeing in the private rented sector*[5] which detailed the problems for homeless people in particular being re-housed in the insecure arena of the private rented sector.

The English Housing Survey[6] states: *In 2013-14, the private rented sector accounted for 4.4 million or 19% of households. Throughout the 1980s and 1990s, the proportion of private sector households stayed steady at around 10%. However, the sector has undergone sharp growth since then and has doubled in size since 2002, driven by a number of factors. In the late 1990s rent controls were removed, and assured shorthold tenancies became the standard, giving greater flexibility in the length of tenancies. Lenders also introduced the buy-to-let mortgage at around the same time, thus increasing the supply of private rental properties.*

Homelessness figures issued by the Department for Communities and Local Government (DCLG) indicate that Assured Shorthold Tenancies coming to an end is the most common cause of homelessness (see 3.4 below on Statutory Homelessness).

For this element we have assumed that private rented properties are let on Assured Shorthold Tenancies and Registered Providers have Assured Tenancies.

Therefore for this element the number of dwellings/households in the private rented sector indicate the number of households *without* security of tenure[7].

3.1.3 Durability of housing (permanent and adequate structure in non-hazardous location)

According to the UN MDGs goal 7.10 Proportion of urban population living in slums, a house is considered "durable" if it is built on a non-hazardous location and has a structure permanent and adequate enough to protect its inhabitants from the extremes of climatic conditions, such as rain, heat, cold and humidity[8].

In England and Wales the Housing Health and Safety Rating System is used to remove or manage risks from hazards to health and safety in dwellings (see 3.4 below). The Decent Homes Standard is a related standard for the social rented sector. The Hazards include:

- Dampness, excess cold/heat
- Pollutants e.g. asbestos, carbon monoxide, lead
- Lack of space, security or lighting, or excessive noise
- Poor hygiene, sanitation, water supply
- Accidents – falls, electric shocks, fires, burns, scalds
- Collisions, explosions, structural collapse.

[5] http://england.shelter.org.uk/__data/assets/pdf_file/0005/760514/6424_Sustain_Final_Report_for_web.pdf
[6] https://www.gov.uk/government/statistics/english-housing-survey-2013-to-2014-headline-report
[7] Although this technically the case, not all renters want longer tenancy agreements see Section 10
[8] http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=32

When a hazard presents a severe threat to health or safety of a resident, it is known as a category 1 hazard. Local authorities must take enforcement action to remove or manage category 1 hazards.

Data provided by Local Authorities to Department for Communities and Local Government (DCLG) in the annual Local Authority Housing Return show that the worst conditions are found in the private rented sector. The social rental sector is well-regulated and the Decent Homes standard is applied, although there are properties in poor condition.

In terms of the non-hazardous location requirement in the definition of durable housing, this is covered under Target 11.5 where we discuss the applicability of the indicator – proportion of population living in high-risk zones.

For this element of the slum indicator the most relevant data is the proportion of dwellings with Category 1 hazards.

3.1.4 Sufficient living area (not more than two people sharing the same room)

UN Definition: A room is defined as a space in a housing unit or other living quarters enclosed by walls reaching from the floor to the ceiling or roof covering, or to a height of at least two meters, of an area large enough to hold a bed for an adult, that is at least four square meters. The total number of types of rooms therefore includes bedrooms, dining rooms, living rooms, studies, habitable attics, servants' room, kitchen and other separate spaces intended for dwelling purposes[9].

The UK definition of overcrowding differs from the UN Habitat definition in that it relates to rooms normally available for sleeping accommodation (i.e. a bedroom or living room and not kitchens as in the UN definition) and number of people sleeping in it (room standard which states 2 people per room) and the space of the room (space standard minimum size 50 square foot which is 4.65m² - 0.65 m² larger than the UN standard).

The Census records overcrowding[10] (using the UK definition) and in 2011 found 4.5% of households were overcrowded. The English Housing Survey 2013-14 reported that overcrowding was uncommon, with under-occupation more common. 1% of owner occupiers were overcrowded; 6% of social housing renters and 5% of private renters were overcrowded. English Housing Survey data is not available at GM level or LA level, while the Census data is collected every ten years and does provide data to a detailed local level.

Current policy in England aims to reduce under-occupation by those on housing benefit, by removing some of the benefit in what is known as a 'spare room subsidy'. However, this has proved controversial due to the lack of smaller housing units available for these people to move to in some areas of the country, and for forcing people to move from within established communities and support networks; or being penalised unfairly.

Because of the UK definition, the number in overcrowded homes based on the UN definition would be very small, limited to those in houses in multiple occupation (HMOs) and temporary accommodation. These types of housing would be very likely to fall into the numbers of households without security of tenure in any case.

[9] DESA, Statistics Division, Principles and Recommendations for Population and Housing Census (rev. 1), 1998, page 106

[10] http://www.ons.gov.uk/ons/rel/census/2011-census-analysis/overcrowding-and-under-occupation-in-england-and-wales/rpt-overcrowding-and-under-occupation-in-england-and-wales.html

Therefore, we do not propose to gather data for GM on overcrowding for this element of the slum indicator.

3.2 Data currently available

In addition to data on the two relevant elements of the UN Habitat definition for slums, data on homelessness was agreed to be relevant to the target and primary indicator. Homelessness as an indicator relates to the target clearly since it includes those *without* access to adequate, safe, affordable housing and basic services.

3.2.1 Homelessness Data

In England data is gathered for Statutory Homelessness (a legal definition of homelessness), Rough Sleeping and Homelessness Prevention and Relief. This is collected thoroughly, although the result for this indicator as a proportion of GM's population is statistically insignificant as shown below.

The data is reported by all Local Authorities to the DCLG. Datasets entitled *Local Authority activity under the homelessness provisions of the 1996 Housing Act (P1E)* are available quarterly and provide very detailed and comprehensive information relating to people supported by local authorities. Causes of homelessness are complex and the data collected includes reasons for homelessness with the most common cause being a Shorthold Assured Tenancy coming to an end (hence the relevance of data for private rentals discussed below); other reasons (and therefore criteria to qualify for priority support) may be those of domestic violence, leaving the armed forces, care leavers, drug/alcohol problems, physical disability, mental health problems etc.

Data for the number of households accepted as homeless and accommodated by each local authority is collected at the end of each quarter.

Number of Homeless Households in GM, March 2014

Bolton	52
Bury	13
Manchester	329
Oldham	18
Rochdale	37
Salford	61
Stockport	28
Tameside	6
Trafford	49
Wigan	30
GM Total	**623**
As a percentage of GM population:	**0.02%**

Source: Aggregated for Greater Manchester from LA data in Section 2E of Table P1E Detailed Local Authority Level Homelessness Figures[11]

Data for rough sleepers can be aggregated from the Local Authority Street Counts and Estimates reported annually by each local authority:

[11] https://www.gov.uk/government/statistical-data-sets/live-tables-on-homelessness#detailed-local-authority-level-responses

Estimates of Rough Sleepers in GM 2014

Local Authority	Count	Estimate
Bolton		4
Bury	0	
Manchester	43	
Oldham		0
Rochdale		17
Salford	14	
Stockport		7
Tameside		7
Trafford		2
Wigan		7
GM Total	57	44

Source: Street Counts and Estimates of Rough Sleeping 2014[12]

The accuracy of Rough Sleeping figures is disputed because it is carried out as a snapshot of one night, or estimated through figures provided by charities and the policy. The figures are thought to be lower than in reality. On their own, these figures are a tiny part of the overall homelessness figures and amount to an insignificant percentage of the population.

The proportion of the population which is homeless is statistically insignificant for this indicator. Should this change radically, it would be relevant to report data under the primary indicator.

3.3 Data available but not immediately accessible

3.3.1 Security of Tenure

For this element, the population renting with an Assured Shorthold Tenancy is taken as a proxy for insecure tenure. This data is not available annually at either local authority or Greater Manchester levels. Tenure type is available as an accurate snapshot every 10 years through the Census disaggregated to local authority and GM levels. However this data goes out of date rapidly.

Households in private rented accommodation 2011

	All households	Private rented households	Private rented %
Bolton	116,371	15,930	14%
Bury	78,113	10,774	14%
Manchester	204,969	58,170	28%
Oldham	89,703	10,944	12%
Rochdale	87,552	11,556	13%
Salford	103,556	19,420	19%
Stockport	121,979	13,852	11%
Tameside	94,953	12,573	13%
Trafford	94,484	12,001	13%
Wigan	136,386	15,875	12%
GM	**1,128,066**	**181,095**	**16%**

[12] https://www.gov.uk/government/statistics/rough-sleeping-in-england-autumn-2014

Source: 2011 Census

Number of households in GM in private rented sector: 181,095

% of households in GM in private rented sector: 16%

The annual English Housing Survey also identifies tenure type, but cannot be disaggregated to local authority or GM levels. It provides some data on urban and rural trends which could be used to estimate annual figures for private rental households.

Tenure type is also included in Housing Stock Condition Surveys carried out by Local Authorities, based on sample surveys. However, very few local authorities commission these now due to lack of resources. Such surveys go out of date after three to four years. Manchester City Council's most recent Stock Condition Survey was undertaken in 2007 and the council uses these figures as a basis for their Housing Returns report to DCLG, estimating changes based on investment in housing since 2007. The volatility of the housing market and private rented sector means that figures change rapidly. For example, Stockport's 2009 Stock Condition Survey[13] found 7.4% of stock in the Private Rented sector, which by 2011 the Census found to be 11.4%.

Another data source is the BRE[14] Housing Stock Modelling Service which uses data from the Census, the National English Housing Survey, Ordnance Survey and Experian[15] to provide a reasonably accurate statistical estimate of tenure type and condition. This has increasingly replaced Stock Condition Surveys for local authorities as it is cheaper and offers an annual update for reporting. However, in GM only three local authorities have subscribed to this service. These are:

- Stockport
- Bury
- Bolton

The cost of a Stock Condition Survey is around £80,000 for a local authority, while BRE's Housing Stock Modelling service has an initial fee of c£25,000 for a larger local authority plus an annual subscription of around £1,000.

Therefore the cost of accurate annual data collection covering security of tenure and durability of housing for Greater Manchester would be c£800k (for Stock Condition Surveying) or c£200,000 (assuming economies of scale/discounts) for BRE Housing Stock Modelling.

Two options exist for this element of the indicator, extrapolation from English Housing Survey trends to update Census data, or additional surveying and modelling at a significant cost.

3.3.2 Durability of Housing

The Decent Homes standard applies only to registered providers but its criteria are applied to all homes in the English Housing Survey 2013, which reports that the number of non-decent homes in England continued to decline. In 2013, 4.8 million dwellings (21%) would fail to meet the criteria of the Decent Homes standard, a reduction of 2.9 million homes since 2006, when around a third (35%)

[13] http://www.stockport.gov.uk/2013/2998/43251/smbcprivatesectorhousingstrategy2011-14
[14] BRE Group, formerly the Building Research Establishment, privatised in 1997 www.bre.co.uk
[15] www.experian.co.uk

of homes would have failed to meet the decent home standard. The English Housing Survey can be disaggregated to regional levels, but not to GM or Local Authority levels.

The number of dwellings with Category 1 Hazards may provide a relevant response to this element of the indicator. This view was put forward by the UNSDG workshop participants.

Local Authorities report annually to DCLG on a variety of measures relating to housing through the Local Authority Housing Statistics returns[16]. The data within the returns is dependent on the local authorities having sufficient resources to monitor and report: some data is modelled, while some is estimated. For Category 1 Hazards, the figures come from surveys, complaints by neighbourhood officers or tenants, therefore the figures are lower than reality.

The chart below shows anomalies in totals because of incomplete housing statistics returns from local authorities – figure in italics are imputed data. However, the annual housing statistics returns give the best idea of the size of the problem of the most unsatisfactory housing conditions in the city area, and are used by government and AGMA as the basis of housing policy.

Dwellings with Category 1 Hazards, 2013-14

	Total number of ALL dwellings with category 1 hazards (HHSRS) in Local Authority Area	**Total dwellings**	**Cat 1 hazards as % of total dwellings**
Bolton	24,129	122,000	20%
Bury	14,526	82,180	18%
Manchester	22,323	217,240	10%
Oldham	817	93,580	1%
Rochdale	*0*	91,140	0%
Salford	10,446	110,150	9%
Stockport	15,767	126,760	12%
Tameside	*0*	100,510	0%
Trafford	*3*	97,580	0%
Wigan	*0*	142,690	0%
GM	**88,011**	**1,183,830**	

Source: Local Authority Housing Statistics dataset, England 2013-14

For those authorities that report Category 1 Hazards, these represent between 9-20% of all dwellings.

The figure above overlaps with the 16% of households in the private rented sector, giving figures for **population living in properties that lack two basic shelter needs as between 9 – 20%.**

[16] https://www.gov.uk/government/statistical-data-sets/local-authority-housing-statistics-data-returns-for-2013-to-2014

3.4 Data not available

3.4.1 Sufficient Living Space

Data on Sufficient Living Space is not available, because the UK and UN definitions to not correspond. If they did, the data would only be available from the Census every 10 years, backed up by the English Housing Survey trends on an annual basis. The former data would be available for Greater Manchester and its constituent local authorities, while the latter cannot be disaggregated to a Greater Manchester level.

Overcrowding is not a high risk for urban housing in Greater Manchester, and interviews with housing managers indicates that it tends to be a greater problem in the South East of the country where property prices are higher. As such, it is not a relevant indicator for Greater Manchester and unlikely to be collated at a Greater Manchester level for this indicator.

3.5 Proportion of population that spends more than 30% of its income on accommodation.

This secondary indicator has been introduced with the following rationale:

In line with the relative universality of the SDGs, and to ensure that this target is universally applicable and pursued in both developing and developed cities, Habitat for Humanity and others have proposed expanding the definition of a slum household to include a sixth element related to affordability. Most analysts measure affordability as a household spending no more than 30% of household income on accommodations as the baseline.

Housing covers all types of housing related developments to meet current and future need. In the UK it ranges from open market housing for people who can afford to buy one or more property, to affordable housing which can be rented or partly owned (part rented, part owned – known as shared ownership). It also includes specialist housing, such as student accommodation, sheltered housing for elderly or vulnerable people with special needs. Housing also takes into account the needs of migrant workers, and includes residential and transit sites for gypsies, travellers and travelling show people[17].

The complex inter-relationship of so many changing factors that influence the proportion of expenditure on housing makes this indicator extremely difficult to unpick.

Economic factors:

- Interest rates change over time
- Inflation (affecting relative costs of other expenditures)
- Changes to mortgage policies and upfront costs
- Market rents
- Wage rates

Personal choice/characteristics:

- Housing type

[17] Gypsies, travellers and travelling show people are recognised as an ethnic group under the Equalities Act

- Location
- Income
- Financial priorities – decision to purchase to get on the housing ladder
- Family situation
- Timing – mortgage may be paid off

Housing supply:

- Supply of different types and tenures
- Demand creating pressures and pushing up rents
- Under-supply caused by economic pressures ('Generation Rent' who cannot afford to buy)

The ONS Family Resources Surveys found that the proportion of the UK population spending more than a third of their income on housing rose from 8.2% in 2001/02 to 19.3 % in 2008/09 then dipped to 14.4% in 2011/12.

The Resolution Foundation's 2014 report, *Housing pinched: understanding which households spend the most money on housing costs*[18] identifies significant sub-sets of people:

- Those spending more than a third of their income after tax on housing, for whom the effort in making housing payments results in arrears and defaults or experience problems in other areas of their budgets.
- Higher income earners who do not struggle to pay a third of their income on housing, because the remaining two thirds is a sizeable sum of money.
- Those who are spending more than half of their disposable income on housing. This group is dominated by working-age households the majority of whom are in work, living in London, private renters and under 25 years.

Since the ONS figures cited above, policy changes, such as the spare room subsidy and benefits reform (which pays housing benefit to the beneficiary within their income support, rather than paying directly to the landlord) have affected renters' ability to pay and housing providers report a rise in rent arrears, indicating that people may be struggling to cover their housing costs.

3.5.1 Data Currently Available

None of the available data matches the indicator.

A lot of information on affordable housing is reported to the DCLG by local authorities, but this focuses on the supply and demand for housing. It is managed by local authorities through planning policy and looks to the future rather than providing a snapshot of the present – while it provides a reasonable assessment of market rents, for purchases it only addresses affordability for first-time buyers, rather than those with capital in their properties. Housing needs assessments conducted by local authorities (discussed above) include information about what levels of rent or mortgage people in a local area might afford.

Ratios on lower quartile house prices to lower quartile incomes are published nationally for local authority areas, but do not provide the required data for this indicator[19].

[18] http://www.resolutionfoundation.org/wp-content/uploads/2014/08/Housing-pinched-Understanding-which-households-spend-the-most-on-housing-costs.pdf

[19] https://www.gov.uk/government/statistical-data-sets/live-tables-on-housing-market-and-house-prices

Lower Quartile House Price to Lower Quartile Income Ratio, 2013

Bolton	4.17
Bury	4.77
Manchester	4.49
Oldham	4.46
Rochdale	4.33
Salford	4.44
Stockport	6.01
Tameside	4.83
Trafford	7.56
Wigan	4.34
GM	4.68

Source: Live tables on housing market and house prices, Table 576

3.5.2 Data not available

Surveys conducted nationally by the Office for National Statistics such as the *Detailed household expenditure by equivalised disposable income decile group, 2012 United Kingdom* (Family Spending Survey) and *Expenditure on rent and mortgages by renters and mortgage holders by gross income decile group, 2012, United Kingdom*, provide some data, but not at a Greater Manchester level, and without sufficient detail.

Housing Affordability, UK 2012

Gross income decile group	Rents		Mortgage	Average Weekly Disposable Income	Housing cost as a % of disposable income		
	Gross rent	Net rent (after benefits)			Gross rent	Net rent (after benefits)	Mortgage
1	122.50	34.10	81.20	122.70	100%	28%	66%
2	118.60	41.40	82.40	211.70	56%	20%	39%
3	124.70	56.70	68.90	289.60	43%	20%	24%
4	128.90	81.60	91.50	359.10	36%	23%	25%
5	136.00	103.40	98.80	437.80	31%	24%	23%
6	124.40	109.70	99.70	525.90	24%	21%	19%
7	136.60	123.90	125.00	632.10	22%	20%	20%
8	160.50	153.40	132.00	755.70	21%	20%	17%
9	178.30	176.70	150.10	950.70	19%	19%	16%
10	273.60	273.40	224.60	1710.60	16%	16%	13%
All	136.00	86.40	138.60	599.70	23%	14%	23%

Sources: ONS: Family Spending 2012, Expenditure on rent and mortgages by renters and mortgage holders by gross income decile group, 2012, Table 2.10, ONS, Living Costs and Food Survey 2012, Household income and expenditure by income decile group (based on weighted data)

Note the national sample size for Housing costs was 1760 households and for Income was 5,600 households.

Enquiries to the ONS confirmed that this data is simply not available at a GM level.

The Social Surveys team at the ONS are not able to provide cost implications for the collection of survey data for Greater Manchester for this indicator and the transport costs indicator (below). They have put forward questions on how such a survey might be designed and delivered, which is extremely complex. An estimate has also been requested from a research agency working in Greater Manchester for a survey that would gather data for both indicators. The ONS response to the request about this data shows that a high level policy decision to resource a survey for this indicator (for all urban areas perhaps) would have to be taken.

3.6 Sources and drivers of data

The **Housing Act 2004** places a duty on local authorities in England and Wales to keep housing conditions in their area under review. It uses a risk assessment approach called the Housing Health and Safety Rating System (HHSRS); the aim is to provide a system (not a standard) to enable risks from hazards to health and safety in dwellings to be removed or minimised.

If the local authority inspection finds a Category 1 Hazard exists in the private sector or a public sector landlord they must take enforcement action. There is a range of degrees of enforcement action that the local authority can take from issuing an improvement notice through to demolition or clearance. For housing in the registered social sector, or council housing, (as the Local Authority cannot take action against itself) compliance with the Decent Homes Standard applies (if plans to comply are not good enough enforcement action can be taken).

Data is provided to DCLG annually through the LA Housing Statistics Return which is mandatory.

Under the **Homelessness Act 2002**, local housing authorities must have a strategy for preventing homelessness in their district. The strategy must apply to everyone at risk of homelessness, not just people who may fall within a priority need group. Local Authorities report to DCLG through the P1E Quarterly return: Households dealt with under the homelessness provisions of the 1996 Housing Act, and homelessness prevention and relief. The P1E returns collect very detailed data on a range of people at risk of homelessness for a variety of reasons, people who are homeless and being rehoused in different types and tenures of accommodation, breakdowns by ethnicity, gender, family sizes/types, care leavers etc.

In the UK, **Affordable Housing** comes under the remit of the DCLG and is provided through planning policy, which has to plan and approve development under the **National Planning Policy Framework**.

Affordable housing is a term use in Development Planning and is the sum of affordable rent, social rent, intermediate rent and affordable home ownership and applied to new homes. Affordable homes are defined in line with the National Planning Policy Framework 20, published 27 March 2012, as housing units (or traveller pitches and bed spaces when describing a shared dwelling such as a hostel) provided to specified eligible households whose needs are not met by the market. Eligibility may be determined with regard to local authority allocations policies, local incomes and local house prices depending on the type of affordable housing. Affordable housing should include provisions to remain at an affordable price for future eligible households or for the subsidy to be recycled for alternative affordable housing provision. “Affordable rent” is a criteria applied to new social housing built with HCA grant support and is defined as 80% of the market rent. However, the vast majority of social housing is let at “social rent” based on a complex formula which generally results in a significantly lower rate than ‘affordable rent” (e.g. in Stockport it is approximately 60% of the market rent).

Affordable Housing evidence and data are gathered for planning purposes (evidence base) through a combination of Strategic Housing Market Assessments (conducted at a Greater Manchester level) and Housing Needs Assessments conducted by local authorities. Housing Needs Assessments are based on surveys, with estimates made to scale up figures. Most local authorities will have carried these out, since they are required as part of the evidence base for Planning. Manchester City Council's latest Housing Needs Assessment was conducted in 2008, while Stockport's was published in 2011. Local authorities use the Housing Needs Assessments to develop Affordable Housing Policy which they use to require developers to build houses which can be purchased or rented at affordable prices. Such assessments also enable local authorities to be providers to the Housing & Communities Agency which funds the construction of social housing developments.

Affordable rented housing is let by local authorities or private registered providers of social housing to households who are eligible for social rented housing. Affordable Rent is subject to rent controls that require a rent of no more than 80 per cent of the local market rent (including service charges, where applicable)[20].

Housing Affordability for planning looks at market values for house purchase, and rental costs against average incomes for particular areas to calculate a price which properties would be sold for, or rented for, to assist negotiations with developers.

Greater Manchester Planning and Housing Commission reports to the GM Combined Authority. It has four aims:

- Revitalising town centres
- Creating the spaces and places that will nurture success
- Stimulating and reshaping the housing market and
- Creating a plan for growth and infrastructure.

Despite its Greater Manchester-wide role, it does not directly gather housing-related data and relies on the local authorities or on national data. The Planning and Housing team at AGMA and New Economy also examine data on a very local area level, for example, recent research with different types of renters in the city-region, to understand their specific needs to design niche solutions that are personalised to very specific population types and income groups.

The Planning and Housing Team works with other bodies such as the Low Carbon Hub, the GM Housing Investment Board and local enterprise partnership.

This indicator could potentially support the standardisation of data gathering across the city-region, if the constituent local authorities could find the resources and see value in this. Devolution of the housing budget to the city-region may provide a driver for more centralised collection and analysis of data.

3.7 Target 11.1 Summary

Data is available annually to report on the Primary Indicator for Target 11.1 which provides a percentage of the households (from which we can extrapolate a figure for the population if required) living in housing conditions which have one or two of the elements present within the UN Habitat slum definition. These conditions are Security of Tenure and Durable Housing.

[20] https://www.gov.uk/definitions-of-general-housing-terms#local-authorities

UK housing policy provides protection for people from hazards which may damage their health and provides temporary accommodation for homeless people, it also provides a benefits system which enables people to receive additional benefits to pay for their housing. It cannot be said that housing in Greater Manchester is found which is comparable to slums or informal settlements present in other countries within this pilot, such as Kisumu, Cape Town or Bangalore.

While housing affordability is a significant issue in the UK, it is not yet possible to report on the secondary indicator for Greater Manchester.

Housing officers and officials are hopeful that by reporting on this target, the message that housing remains an important pressing social issue, may act to provide supportive policy and resources to assist local authorities, social housing providers and the third sector in tackling the shortcomings in Greater Manchester's housing provision.

4 Target 11.2 Transport

Target based on Bangalore Outcome Document January 12 – 14, 2015

By 2030, ensure access for all to safe, affordable, energy efficient and accessible transport systems for all people and goods, improving road safety and expanding public and non-motorized transport, with attention to the needs of those in vulnerable situations.

Indicators examined:

Percentage of people within 0.5 km of public transit running at least every 20 minutes

Secondary indicators:

Share of trips by walking, by bicycling, and by public transport

Share of income spent by urban households on transport (by income quintile)

km of high capacity (BRT, light rail, metro) public transport per person for cities with more than 500,000 inhabitants

Definitions used: Public transportation is defined as a shared passenger transport service that is available to the general public. It includes buses, trolleys, trams, trains, subways, and ferries. It excludes taxis, car pools, and hired buses, which are not shared by strangers without prior arrangement[21].

Transport for Greater Manchester (TfGM) provided data that is currently available along with other suggested sources of data for further analysis to tackle the affordability indicator.

Services in Greater Manchester comprise:

- Local train network
- Metrolink tram service (owned and operated by TfGM)
- Timetabled bus services (commercial services and services paid for by TfGM where no commercial service exists)
- Local Link - a door-to-door flexible mini-bus/taxi service shared with other passengers.

Local Link services are available in defined areas, the service includes some 24 hour services for shift workers in enterprise zones or hospitals. Passengers must book ahead and the service uses mini-buses or taxis that are shared with other passengers.

In general these indicators require data that is monitored and available from TfGM, but with differences in exactly what is measured. With one governance body overseeing transport, data collection and accessibility is easier than for housing. But as with the 11.1 Housing Indicator, the proportion of expenditure on transport is not readily available for Greater Manchester.

[21] Urban SDG Campaign Bangalore Outcome Document Goal 11 Targets and Indicators Jan 27 2015

4.1 Data currently available

Secondary Indicator	Latest data	Date	Data Source	Comment 1
Share of trips by walking, by bicycling, and by public transport	**40%**	2013	TfGM Travel Diary Surveys	See further breakdown below
km of high capacity light rail public transport per person for cities with more than 500,000 inhabitants	0.00004	2014	TfGM / ONS SNPP 2014 (2011 based)	96 km of track, 2.7m GM residents as at 2014 Insignificant for GM

Mode by Number of Trips

TfGM can provide a breakdown of mode for the share of trips. The figures below are based upon travel diary survey data collected 2011 – 2013:

Mode	% share all trips
Walk	28.6%
Car/Van driver	41.5%
Car/Van Passenger	16.6%
Bus/Coach/Minibus	7.9%
Train	1.0%
Metrolink	0.9%
Taxi/Minicab	1.4%
Cycle	1.7%
Motorcycle	0.1%
Other	0.3%

The TfGM Travel Diaries are collected on an annual continuous rolling basis through face to face interviews to gather all trips in the previous day. Based on random stratified sampling, the data is then extrapolated for the GM population (2.7m people, 2 billion trips) using the Census and National Travel Survey as a basis. TfGM has three years' worth of data using this methodology and have approval to continue the research for a further three years. Currently the data must be requested from TfGM, however they do plan to share information on their website.

4.2 Data available but not immediately accessible

4.2.1 Percentage of people within 0.5 km of public transit running at least every 20 minutes

TfGM does not measure this indicator, but uses a different measure, Accessibility Level data. A local methodology has been developed for this and applied over the last 18 months. Greater Manchester Accessibility Levels (GMAL)[22] are a detailed and accurate measure of the accessibility of a point to both the conventional public transport network (i.e. bus, Metrolink and rail) and Greater Manchester's Local Link (flexible transport service), taking into account:

- walk access time
- service availability (average waiting time)
- service reliability factor.

For buses the maximum walk time is defined as 8 minutes or a distance of 640 metres. For rail and Metrolink services the maximum walking time is defined as being 12 minutes or a walking distance of 960 metres.

The method is essentially a way of measuring the density of the public transport provision at any location within the Greater Manchester region. The data produced enables TfGM to disaggregate down to Postcode or to 100m square. It does not consider the speed or utility of accessible services, crowding or ease of interchange.

The accessibility index score is categorized into eight levels, 1 to 8, where level 8 represents a high level of accessibility and level 1 a low level of accessibility. See GMAL Map (Appendix A.2).

The results are not published at this stage but can be requested from TfGM.

GMAL data (February 2014) indicated that **63%** of the GM population was within GMAL range 5 to 8 (mid-level to high-level accessibility).

GM will be able to report on this indicator, which will show trends over time for the percentage of the population with mid-level to high-level accessibility.

Discussions with TfGM's Intelligence Officer about whether this indicator could be used to report on the primary indicator for this target show that it is a **good equivalent**.

In support of the use of GMAL data for this indicator, other surveys also assess accessibility by time to get to public transport, rather than a simple metre or km distance. For example until 2012, the National Travel Survey provided data on walking time to nearest bus stops for built-up metropolitan areas, rather than using a distance, and uses a bus availability indicator of a bus once an hour. So for 2012 we can see that for Large Urban Areas (over 250k population)

% Large Urban Area Population	Minutes walk to closest bus stop
87%	0 – 6 minutes
11%	7 – 13 minutes
2%	14+ minutes
Of the above 97% lived within 13 mins walk from bus stop with a service at least once an hour.	

[22] http://www.gmtu.gov.uk/gmbusroute/GMAL%20Calculation%20Guide.pdf

The Department for Transport's Accessibility/Travel Time Statistics will now collect data on how near people are to bus/tram/underground/rail stops at a local authority level. So this data will be available for all urban areas for purposes of this indicator.

4.2.2 Share of income spent by urban households on transport (by income quintile)

ONS Family Spending 2013 (Table A35)[23] shows that £58.00 is the average weekly household spend on Transport (Northwest) and £9.60 is the average spend on Public Transport Services. However, this figure is only available to North West level, not to Greater Manchester or local authority levels. It is also not available by quintile group.

This indicator is more complex than it first appears. It omits purpose of travel which is an important focus for the National Travel Survey: shopping 20% of all trips; personal business & other escort 19%; commuting 16%; visiting friends 15%; other leisure 15%; education 12%; business 3%.

This indicator may also misses the fact that those on lower incomes may simply not be able to afford to use public transport, so might walk or cycle, and thus spend a lower proportion of their income on transport. A person might walk a long way to work in order to save money for food or accommodation, and will spend less on transport for leisure purposes.

The National Travel Survey (see below in Data Sources for more information) collects data for England, it can provide urban-rural trends but cannot be interrogated for local areas due to the sample size. It includes analysis of travel modes and distance by income quintiles. The 2013 survey[24] finds that the number of trips and distance travelled by people are strongly influenced by their income. The data provides average distance travelled by income quintile and mode. It also provides information on the type of transport used and income quintile – for example, finding that public transport use as a proportion of trips is highest in the lowest income quintile (19%) with bus use decreasing through rising income quintiles, and train use more common in the top income quintile.

The National Travel Survey also provides information on the take up of concessionary travel schemes by rural and urban areas, for pensioners (age related). For example, 77% of eligible pensioners had taken up concessionary passes in urban areas of the North West. This reduces the expenditure for them on transport.

Neither the National Travel Survey nor the DfT Accessibility/Travel Time Statistics cover issues of affordability or share of income spent on transport.

As stated above in Housing, a request to the ONS and to a research company has been made to understand the cost of collecting the data for this indicator.

TfGM currently collects household income within its Travel Diary Survey. It does not plan to collect information about weekly spend on transport. However, TfGM could produce this data for Greater Manchester by aligning the five Acorn[25] categories to the Travel Diary Postcodes and income data. Within the timeframe for this report, there is not time to produce a detailed methodology, but the

[23] http://www.ons.gov.uk/ons/search/index.html?newquery=Family%20Expenditure%20Survey%20-%20UK
[24] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/342160/nts2013-01.pdf
[25] http://acorn.caci.co.uk/ Acorn is the consumer classification system used by TfGM. It uses government data such as the Census and ONS surveys, additional data from other open sources and bespoke data to enable the production and analysis Acorn segments of postcodes and neighbourhoods into 6 Categories, 18 Groups and 62 types.

cost appears to be low, with a small contribution to the annual Acorn license and time / funds to resource running and refining the output. This could be in the region of £1,000.

For a low cost, it appears that data for share of income spent by urban households on transport (by income quintile) can be provided for Greater Manchester by TfGM.

4.3 Sources and drivers of data

PTEG (Passenger Transport Executive Group) brings together and promotes the interests of the six strategic transport bodies serving over 11 million people in the largest city regions outside London. PTEG are also a wider professional network for Britain's largest urban transport authorities.

Passenger Transport Executives were established by the 1968 Transport Act, and exist for Greater Manchester, Merseyside, South Yorkshire, Tyne and Wear and the West Midlands, with the PTE for West Yorkshire being absorbed into the West Yorkshire Combined Authority. All (except Centro) report to combined authorities (Centro reports to a transport authority) led by district councils.

The PTEG (Passenger Transport Executive Group) Research Group manages the collection of data to assemble a common set of strategic transport indicators. This aims to fill the gap left after the demise of Best Value and the scrapping of the National Indicators dataset which removed the obligation to collect comparable data and indicators from across the Passenger Transport Executives. The Passenger Transport Executives agree to share data on some common indicators to provide an evidence base to support their combined influence with government.

Data collected by the PTEG Research Group is reviewed and updated in June and December each year. It is available on the website: http://www.pteg.net/resources/types/documents/transport-indicators-january-2015 The data collected includes:

- Economic data by PTE areas (employment rates; mid-year population estimates and GVA (gross value added) including % change for past five years; from Office for National Statistics
- Operational Key Performance Indicators (KPIs) for each PTE, including:
    - Numbers of bus, train, light rail journeys per annum (annually since 2005/06 plus 5 year trends)
    - Total number of public transport journeys and trips per head of population per year
    - Spending and journeys on tendered bus services
    - Road condition by road type
    - Killed/Seriously Injured
    - Travel to work (non-car/public transport) collected by Census
    - Travel to school (this appears not to be as available as in the past, although schools hold this information on their pupil databases)
    - Travel to key centres (non-car/public transport) collected through cordon counts/surveys
    - Active travel – cycling and walking, and km of cycle routes (this data looks very incomplete)
    - Reliability and Punctuality of public transport by mode
    - Accessibility/Equality e.g. low floor buses; aspects of BME and DDA

European Metropolitan Transport Authorities (EMTA) brings together the authorities responsible for public transport in 26 of Europe's main cities and Montreal, Canada. It promotes the exchange of information and good practices in the field of public transport organisation, planning and funding. EMTA publishes an annual Barometer www.emta.com/spip.php?article267

The Barometer shows the key characteristics of the transport networks by providing commentary and analysis, combining economic indicators from stakeholders with mobility outcome, earning capacity (GDP) with car ownership and ticket fares.

The Barometer provides a source of high level of data on affordability in each city vs GDP, but not by income quintile as required by the USDG indicator; for example:

> The monthly pass fare in main city compared to GDP per capita (annual GDP in city divided by 12) gives a ratio of 1.9 %. The cheapest monthly passes are in Helsinki, Copenhagen, Paris, Prague and Warsaw (1%) while the highest prices are in Sheffield (4.3 %), Birmingham (4.3%) and London (3.8%), all situated in the United Kingdom. EMTA Barometer 2012

TfGM was a member of EMTA, but has withdrawn because of a lack of resources to upload data. TfGM also questioned what value they found in benchmarking themselves against other European cities.

Single Data List

Under the Single Data list Local Authorities are required to report annually Local Bus Punctuality and Highway Inventory Data to the Department for Transport. Neither of these are relevant to the proposed indicators.

Local Transport Plan

Transport Authorities are no longer required by the Department for Transport to produce a Local Transport Plan. However, the current plan and related Business Plan is in place until 2016/17.

In the past Local Transport Plans were produced and performance reported against targets and indicators, including the National Indictors which were scrapped in 2010. For example, TfGM has reported against its LTP2 targets
http://www.tfgm.com/ltp3/Documents/11_Monitoring_GMLTP3.pdf

The Local Transport Plan is relevant to the overall Urban SDG transport target, and has synergies with 11.6 to reduce the adverse environmental impact of cities and relates to 11.3 around efficient land use and participatory urban and regional planning; the LTP also links to 11.4 to protect cultural and natural heritage through the strategic environmental assessments done.

GM's third Local Transport Plan was published following extensive public and stakeholder consultation in March 2011 for the period 2011/12 – 2015/16 to help Greater Manchester to deliver Economic Growth, lower carbon, more active travel and improved health, better connected more pleasant neighbourhoods and value for money.

As an integral part of developing the LTP, the "Responsible Authority" – Greater Manchester Integrated Transport Authority - is required by various legislation to undertake the following assessments:

- Strategic Environmental Assessment (SEA), required by EU Directive and supporting UK regulations
- Health Impact Assessment (HIA), required by the UN Kiev Protocol
- Equalities Impact Assessment (EQIA), contributing to regulatory equalities duties
- Habitats Regulation Assessment (HRA), also required by EU Directive and UK regulations

An Integrated Assessment of Implementation Plans was conducted which assessed the plans for each of the 10 areas of GM[26]. Monitoring of the LTP was against National Indicators, now scrapped.

Alongside the LTP, TfGM has a published **Business Plan 2014-17** which is closely integrated with the overall Greater Manchester Strategy which aims to:

• radically reduce the city region's carbon footprint by 2020 by 48 % compared to 1990 levels;

• to address local health problems associated with inactivity and poor air quality; and

• safeguard the quality of life of its residents.

For example, one focus of the Business Plan's Strategic Objective 2 - A transport system that enables a clean, healthy and sustainable future is to increase the levels of walking, cycling and use of public transport individually and as part of integrated local travel, to reduce emissions from congestion.

While Strategic Objective 3 delivers accessible transport with attention to the needs of those in vulnerable situations – focusing on ensuring transport accessibility for everyone, including those from the most deprived areas, socially and economically excluded communities, and focusing on physical accessibility for disabled access. But importantly bringing this together under TfGM's duty under the 2010 Equalities Act to ensure that people are not disadvantaged by physical or cognitive disability; their ethnicity; gender; age or sexuality. Its Strategic Objective 4 is for a transport system that is reliable, safe and cost-effective.

TfGM is currently delivering the £53m Local Sustainable Transport Fund which aims to take off 26m km of commuter car journeys and turn them into 10m extra public transport journeys and 2m extra cycling trips, with a reduction of CO2 of 1,000 tonnes a year.

Future reporting requirements will be dictated by the requirements of the elected Members and executive members of TfGM and are likely to remain stable even after devolution.

Department for Transport

The Department for Transport (DfT) publishes relevant statistics, including:

Local Area Walking and Cycling in England[27], which combines data from the Census (2011) on Adults who usually cycle to work, with DfT's statistics based on Sport England's Active People Surveys. This produces data on walking and cycling down to local authority level. This produces data such as 1.3% of people (aged 16 - 74) in GM usually cycle to work.

The DfT has conducted a rolling National Travel Survey[28] for the last 50 years, but its sample size does not allow for analysis at a local level. It provides results and trends on how and why people travel with breakdowns by age, gender and income, trends on driving licence holding, school travel and concessionary travel. It is possible to look at results and trends for urban areas.

The National Travel Survey provides breakdowns by mode share and distance travelled data for England, it also provides breakdowns of distance travelled by gender and age groups. It can provide breakdowns for walking, cycling and public transport use. It is useful as a source of overall trend data, against which a smaller area, or urban area can compare itself against national trends

[26] http://www.tfgm.com/ltp3/Documents/Integrated-Assessment-of-Local-Authority-Implementation-Plans.pdf
[27] https://www.gov.uk/government/statistics/local-area-walking-and-cycling-in-england-2012-to-2013
[28] https://www.gov.uk/government/collections/national-travel-survey-statistics

The Census gathers travel to work data, which is very detailed and accurate down to very small geographic levels, although it is only taken every 10 years, so does go out of date over time.

The Department for Education's School Census used to collect mode of travel to school, however, despite the DfT's protests, the DoE decided not to collect this information any more. (It is however, still collected by many schools, but is not reporting to DfE or DfT.)

DfT produces annual Accessibility/Travel Time data[29] which is very comprehensive and is collected for Output areas (around 110 – 139 households), Lower Super Output Areas (Manchester City Council has 250 LSOAs) (Table ACS05) and at Local Authority level (ACS04). The data examines Travel Time, Destination and Origin indicators to key sites and services. The sites include:

- Employment Centres (for three sizes of site categorised by 100, 500 and 5000 jobs available)
- Primary Schools
- Secondary Schools
- Further Education
- GPs (general practitioners surgeries – doctors)
- Hospitals
- Food Stores
- Town Centres

It includes user travel modes walking/Public Transport; cycling; car; similar statistics for 'at risk' users by the same modes. 'At risk' users are defined as people on jobseekers allowance.

Data is collected through a variety of databases and real time information including Teletrac's Trafficmaster[30], Traveline[31] national datasets supported by bus operators, rail timetable data and data from Transport for London, TfGM etc. DfT's Accessibility/Travel Time statistics will incorporate information on proximity of people to bus stops and transport hubs. The Department will continue to collect and publish these statistics.

"It's very nice to know that people are looking at our data" Statistician, DfT

4.4 Summary Target 11.2 Transport

Data for the Transport indicators is more accessible than for housing, because it is provided by one organisation, Transport for Greater Manchester.

Equivalent data for the primary indicator, percentage of people within 0.5 km of public transit running at least every 20 minutes, can be provided by using the existing accessibility levels.

Data for two of the three secondary indicators is currently available:

- Share of trips by walking, by bicycling, and by public transport
- km of high capacity (BRT, light rail, metro) public transport per person for cities with more than 500,000 inhabitants

The third secondary indicator - share of income spent by urban households on transport (by income quintile) is not currently available for Greater Manchester, but for a relatively low cost can be

[29] https://www.gov.uk/government/collections/transport-connectivity-and-accessibility-of-key-services-statistics#publications-released-during-2014
[30] http://www.teletrac.co.uk/trafficmaster-traffic
[31] http://www.traveline.info/

produced from Travel Diary Data with some additional analysis of the Acorn categories which segment the population.

In conclusion, the data is available, and reporting not onerous for this target. TfGM's accessibility levels exceed the requirements of the primary indicator and may be useful for other urban areas to apply in future.

In terms of relevance, TfGM's intelligence Officer, and PTEG's Researcher are interested in whether reporting on this target may provide useful benchmarking for the Passenger Transport Executives over time. Both expressed an interest in the findings from the Gothenburg pilot in particular.

5 Target 11.3 Land Use & Planning

Target based on Bangalore Outcome Document January 12 – 14, 2015

11.3: By 2030, achieve more equitable and efficient land use through participatory urban and regional planning and management.

Indicator

Ratio of land consumption rate to population growth rate at comparable scale

Secondary Indicators

Proportion of cities with legislation that promotes participatory mechanisms related to urban planning and local decision-making that ensure a fair representation of the urban population, including slum dwellers and informal workers.

Cities with more than 100,000 inhabitants that implement urban and regional development plans integrating population projections and resource needs

Definition

Built-up area - buildings and compacted soils and impervious surfaces

Rationale and Definition: As this indicator, a measure of land-use efficiency, benchmarks and monitors the relationship between land consumption and population growth, it informs and enables decision-makers to track and manage urban growth at multiple scales and enhances their ability to promote land use efficiency. In sum, it ensures that the SDGs address the wider dimensions of space and land adequately and provides the frame for the implementation of several other goals, notably health, food security, energy and climate change.

This land use efficiency indicator not only uniquely highlights the form of urban development but also illuminates human settlement patterns. It can be employed to capture the three dimensions of land use efficiency: economic (e.g., proximity of factors of production) environmental (e.g., lower per capita rates of resource use and GHG emissions,) and social (e.g., avoidance of settlement of on vulnerable land, promotion of reduced travel times/distances). Finally, urban configuration largely predetermines the technologies and behavioral patterns within a city. Once built, cities are expensive and difficult to reconfigure. Fast-growing cities in the developing world must 'get it right' before they are beset by infrastructural lock-in. Though density is typically measured in units of inhabitants per hectare, and its inverse, land consumption, in hectares per inhabitant, this Indicator is ultimately measuring a unitless ratio (i.e., rate to rate).

Land use planning is heavily regulated in the UK. The National Planning Policy Framework (NPPF) (introduced in 2012, and replacing a more detailed regulatory system) sets out guidelines for sustainable development in England under 13 main themes:

1. Building a strong, competitive economy
2. Ensuring the vitality of town centres
3. Supporting a prosperous rural economy
4. Promoting sustainable transport
5. Supporting high quality communications infrastructure
6. Delivering a wide choice of high quality homes

7. Requiring good design
8. Promoting healthy communities
9. Protecting Green Belt land
10. Meeting the challenge of climate change, flooding and coastal change
11. Conserving and enhancing the natural environment
12. Conserving and enhancing the historic environment
13. Facilitating the sustainable use of minerals.

Planning Authorities are required to produce a Local Plan which meets the requirements of the NPPF, and deliver development in line with their Local Plan. The Local Plan typically covers a 15-year timeframe. To support this Plan, the authorities must provide a robust evidence base, which characterises their local area and its development needs. This will include evidence on, for example population growth, economic development, housing needs, land available for development, land subject to development constraints, specific historic or natural environment conservation needs, development needs of specific neighbourhoods, flood risk assessments and renewable energy opportunity areas.

Plan-making is a long process which must include consultations with the local community, is subject to a sustainability appraisal, and finally is tested for "soundness" at an independent Inquiry. Once it has gone through this process it can be used to justify planning decisions, although policies in developing plans may still contribute towards decision-making.

Local authorities determine planning policies, and they have a level of influence over developments planned for strategic sites such as urban regeneration areas, working in partnership with developers. However the majority of planning decisions are made in response to planning applications lodged by private developers. Planning officers can guide and influence these proposals, but ultimately cannot force landowners or developers to put forward proposals for development of specific sites.

A further level of legislation governs the standards to which developments are constructed: the Building Regulations. These contain detailed requirements to ensure structural integrity, occupant safety, low carbon buildings, water conservation, accessibility etc.

Greater Manchester has 10 Local Planning Authorities, each of which has its own Local Plan. However, since January 2014, the 10 authorities have been working together to produce an over-arching Greater Manchester Spatial Framework[32] to link together the 10 plans. This should be in place by 2017.

5.1 Ratio of land consumption rate to population growth rate at comparable scale

This is not considered a significant metric for Greater Manchester. The overarching strategy for urban growth across Greater Manchester is being developed under the Greater Manchester Spatial Framework, which will identify the scale and type of growth to be planned for, and will be framed by relevant national and local planning policies and drivers. Land consumption in Greater Manchester is constrained by national policies and local priorities such as:

[3232] http://www.agma.gov.uk/what_we_do/planning_housing_commission/greater-manchester-spatial-framework/index.html

- Restrictions on development within the Green Belt – a designated area of land surrounding most major cities including Greater Manchester
- Requirements for a proportion of development to be on previously developed land (brownfield sites)
- Urban regeneration of city centres.

The single figure of this indicator is a blunt instrument that will not demonstrate the quality and value of land use development to Greater Manchester and its inhabitants. These issues are better served by a range of development policies and practices that consider individual developments within the scale of an overall area plan. As such the two secondary indicators offer a more relevant and nuanced measure of the sustainability of local development.

5.2 Participatory Planning

Proportion of cities with legislation that promotes participatory mechanisms related to urban planning and local decision-making that ensure a fair representation of the urban population, including slum dwellers and informal workers.

5.2.1 Data currently available

There are many components of the indicator, such that for Greater Manchester it could either be a straightforward "Yes" or a "No".

Yes: "legislation that promotes participatory mechanisms related to urban planning and local decision-making"

No: "that ensure a fair representation of the urban population, including slum dwellers and informal workers".

Two pieces of national legislation require local planning authorities to set up mechanisms to encourage participation in local planning and planning decision making:

- Local Plans, regulated by the National Planning Policy Framework under The Town and Country Planning (Local Planning) (England) Regulations 2012[33]
- Neighbourhood Planning, under The Neighbourhood Planning (General) Regulations 2012[34]

Both of these require statutory consultation with the local community.

As part of the development of the Local Plan, planning authorities are required to produce evidence that they have consulted the public about the Plan and that it conforms to the Code of Practice on Consultation.

A greater degree of localism was introduced into development planning in 2012 with the Neighbourhood Planning legislation, which allowed neighbourhood groups the powers to develop plans for their local area, provided these fit within the Local Plan. Local authorities are required to publicise the existence of neighbourhood plan applications "on their website and in such other manner as they consider is likely to bring the application to the attention of people who live, work or carry on business in the area to which the application relates". Grants of up to £8,000 (or £14,000 for complex plans) are available to help local groups to develop neighbourhood plans.

[33] http://www.legislation.gov.uk/uksi/2012/767/pdfs/uksi_20120767_en.pdf
[34] http://www.legislation.gov.uk/uksi/2012/637/pdfs/uksi_20120637_en.pdf

Planning applications related to specific developments must be publicised directly to near neighbours (by mail or publicly displayed notice), and members of the public can comment on any planning application through the Planning Portal website[35] or in writing to the local authority. For planning applications decided by planning committee, members of the public may also speak at the planning hearing – this is usually for larger and more controversial developments. There are also a number of statutory consultees for larger planning applications to which individuals and groups can make representation.

In practice, local authorities struggle to engage effectively with all sections of the community at the plan development stage. Contributors tend to be those with a direct link or interest in a specific area or issue, although recognised community groups may be contacted directly for input. There are limited numbers of neighbourhoods with the capacity to develop their own plans, so these are not widespread. By the end of 2014, 1100 neighbourhood plans had been submitted, covering around 5 million people, but the vast majority of these were in rural rather than urban areas.

Within Greater Manchester only (*less than 10 – to be confirmed*) Neighbourhood Plans have been approved.

Since January 2014, spatial framework has been under consultation and development to identify future housing and land requirements. The Greater Manchester Housing and Development are now developing a statutory joint Development Plan Document to manage the supply of land in Greater Manchester over the next 20 years. This will give Greater Manchester an overarching plan within which the 10 local authorities identify and make available land to deliver ambitious strategic priorities. A full consultation on the plan will take place in 2016 and the final plan will be published in 2017.

5.2.2 Data available but not immediately accessible

Individual planning authorities retain records of consultations on development plans and planning applications. These could be searched to assess the actual level of community consultation achieved.

5.2.3 Data not available

While consultation responses must be from named individuals or organisations, it would be extremely difficult to assess how representative of the local populations these participants are.

5.3 Implementing development plans integrating population projections and resource needs

Cities with more than 100,000 inhabitants that implement urban and regional development plans integrating population projections and resource needs

As with the indicator above, the response to this will depend on the definition of the terms used: in this case “resource needs” and the level of compliance required for “implementation”.

[35] www.planningportal.gov.uk

5.3.1 Data available but not immediately accessible

Resource Needs

Local Plans are based on a range of evidence provided by specific studies of the local area needs, including:

- Housing needs assessments based on census data
- Housing and employment land availability assessments
- Economic development strategies
- Transport strategies
- Access to services such as schools and health centres
- Green space and biodiversity strategies
- Strategic flood risk assessments
- Conservation and heritage assessments
- Local energy strategies.

Local Plans and supporting evidence are published on the website of each planning authority. It would be possible to check through each of these for the 10 authorities (plus other authorities such as AGMA, GMWDA and TfGM who are responsible for evidence and plans in specific areas). However, as this was not determined to be a priority indicator, this level of examination has not been carried out.

Resources for individual developments are determined at the planning application stage, e.g.:

- Electricity and gas supply connections must be agreed with the energy companies
- Water supply and sewage connections must be agreed with the water utility
- Transport access and vehicle numbers are considered in relation to the impact on the existing transport network, and developers may be required to fund the provision of additional public transport capacity
- Accessibility of the development to services such as schools, health centres and shops is considered for large developments.

Under the Community Infrastructure Levy, developers can be required to contribute to the cost of provision of local facilities outside of the development, such as roads, health centres, parks and play areas.

The energy and water utilities are required to plan to provide future capacity to supply new developments, although as they charge developers for the provision of a suitable connection, in some developments the cost of this may affect the viability of the scheme.

Food is not a resources which is considered with planning and development, however, the Greater Manchester Climate Change Strategy recognises the core role Sustainable Consumption and Production (SCP) plays in delivering a range of interconnected objectives. A sustainable food strategy is planned for 2015, and third sector organisations are active in initiatives to address the food resources needs of Greater Manchester. The issue of sustainable food is addressed in other projects with the Greater Manchester Local Interaction Platform.

Implementation

The implementation of the Local Plan is determined by the numerous individual planning applications for new development. All applications are scrutinised against the requirements of the

Local Plan. Some of the Plan needs conflict and while the weight given to each component of the supporting evidence is driven by local policies and priorities, these must conform with the NPPF. Individual decisions should balance the local priorities, but can be driven by national political preferences and government priorities. In recent years the test of "economic viability" i.e. profitability for the developer has held stronger weight than, for example, the need to provide low carbon buildings, and in some areas the need for city centre regeneration has been supported over the need for development away from flood risk areas.

Local planning decisions may be determined by the Secretary of State who can "call-in" local planning applications for central decisions. Intervention by the last Secretary State increased in the last two years, with a propensity to overturn local decisions on housing in favour of the development, and on renewable energy against the development[36].

It would be possible to scrutinise the planning applications accepted across GM against the individual Local Plans, to determine the level to which implementation reflects the various policy aims and builds on the supporting evidence. However, this would be an extremely onerous task and would require a level of political will to support the findings.

5.4 Summary Target 11.3 Land Use and Planning

This target was not seen as a priority for Greater Manchester, and the primary indicator is not a relevant figure that can reflect the realities of development in the city.

The secondary indicators offer more relevance, although the definitions of terms such as "resources" and the level of compliance required for both participatory planning and implementation will need to be addressed. In practice it is likely that Greater Manchester would answer "Yes" to both of the secondary indicators without carrying out further work to determine the actual level of engagement or compliance, on the assumption that the planning management and monitoring systems in place are sufficient and it would not considered a good use of resources to investigate this further.

[36] www.gov.uk/government/collections/planning-applications-called-in-decisions-and-recovered-appeals

6 Target 11.5 Risk Reduction

Target based on Bangalore Outcome Document January 12 – 14, 2015

By 2030, significantly reduce the social, health, economic and ecological risks and impacts of disasters, environmental change and disease outbreaks by better designing and managing cities, protecting people in vulnerable situations.

Indicators examined:

Percent of cities with more than 100,000 inhabitants that are implementing risk reduction and resilience strategies informed by accepted international frameworks (such as forthcoming Hyogo-2 Framework).

Secondary indicators:

Economic losses related to GDP caused by disasters

Proportion of population living in high-risk zones

Number of deaths, injuries, and displaced people caused by natural disasters annually per 100,000 population

Number of housing units damaged and destroyed

Definitions used: *Disaster*: A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

Rationale and definition[37]*: Disasters are increasing in frequency and intensity, and those exacerbated by climate change are significantly impeding progress toward sustainable development. Evidence indicates that exposure of people and assets in all countries has increased faster than vulnerability has decreased, thus generating new risk and a steady rise in disasters losses with significant socio-economic impact, especially at the local and community level. Due to the concentration of population, infrastructure and built environment, and economic activity, the risks for urban areas are particularly high.*

The development and implementation of such plans should address underlying risk factors and should engage all stakeholders, especially poor and vulnerable populations. The plans should focus not only on acute disasters, but also address recurring small-scale, slow-onset, and extensive disasters that particularly affect communities and households. The plans aim at minimizing disaster risks, improving preparedness, building capacity, strengthening response and recovery efforts, and enhancing resilience to current and emerging risks at all levels.

This indicator builds on the progress achieved since the adoption of the Hyogo Framework for Action (HFA) in 2005, by using a multi-scalar approach to reduce disaster risk at neighborhood, local, national, regional, and global levels by countries and other stakeholders. It takes a preventative

[37] Based on draft Preamble, Post-2015 Framework for Disaster Risk Reduction.

approach that recognizes the benefits of advanced planning in reducing disaster losses – in lives and in the social, economic, and environmental assets of persons, communities, and countries.

Disaggregation: This indicator can be disaggregated spatially at the national, regional, and city levels. At sub-national levels, the indicator would read as follows: "Development and implementation of risk reduction and resilience plans/strategies in line with the forthcoming Hyogo Framework. [Yes/No]"

Comments and limitations: The fifth goal of the draft outcome document the Post 2015 Hyogo Framework meeting in Sendai, "increase number of countries with national and local strategies by [a given percentage] by 20[xx]". Indicator 1.6 for proposed SDG 1 addresses the losses and includes a potential complementary national indicator for a Disaster Risk reduction Index, which can be used alongside this suggested indicator.

In the UK the term disaster is generally not used, the term emergency is used. A city-level UK emergency would be unlikely to constitute a UN defined disaster. This is due in part to geographic conditions such as a lower exposure to risks like earthquakes, volcanoes and major floods, and due to the UK's available resources and planning.

Under the **Civil Contingencies Act 2004** the definition of an emergency is an event or situation which threatens serious damage to human welfare in a place in the UK, the environment of a place in the UK, or war or terrorism which threatens serious damage to the security of the UK.

Additionally, to constitute an emergency, an incident or situation must also pose a considerable test for an organisation's ability to perform its functions. The common themes of emergencies are:

- the scale of the impact of the event or situation
- the demands it is likely to make of local responders
- and the exceptional deployment of resources.

Greater Manchester's Head of Civil Contingencies and Resilience Unit has stressed the importance of aligning this target and indicator with those of the Sendai Framework for Disaster Risk Reduction agreed by the UN in March 2015. The urban target and indicators are aligned with some of those within Sendai.

The goals are:

- The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.
- Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience.

The seven global targets, which will be reported nationally, are:

(a) Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared to 2005-2015.

(b) Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared to 2005-2015.

(c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.

(d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.

(e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.

(f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030.

(g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

6.1 Cities implementing risk reduction and resilience strategies

Percent of cities with more than 100,000 inhabitants that are implementing risk reduction and resilience strategies informed by accepted international frameworks (such as forthcoming Hyogo-2 Framework).

This is a straightforward "yes" for Greater Manchester. The city region implements a risk reduction and resilience strategy. It has a Local Resilience Forum[38] and Community Risk Register[39] as required by the Civil Contingencies Act 2004. Its risk reduction and resilience strategies are informed by accepted international frameworks.

Greater Manchester has been recognised as a 'Role Model for Total Resilience'[40] in the UN Office for Disaster Risk Reduction's *Making Cities Resilient* campaign. Cape Town is also a participant in this scheme.

The *Making Cities Resilient* campaign includes a Ten Point Checklist – Essentials[41] which draw on the Sendai Framework for Disaster Risk Reduction agreed by the UN in March 2015. Based on the checklist, a local government self-assessment tool[42] has been developed which is a fairly high level assessment for resilience. A more detailed disaster resilience scorecard has also been developed which Greater Manchester is currently piloting together with cities in Sweden and Portugal as part of an EU-funded project. These tools include areas outlined in the target for this indicator.

In parallel with the UN initiatives, The Rockefeller Foundation has established 100 Resilient Cities initiative[43], to support 33 cities to become resilient: Bangalore is one of these cities.

Greater Manchester is currently re-developing its existing Resilience Strategy and works with a range of partners through the Greater Manchester Resilience Forum (GMRF). The geographical area covered is that of Greater Manchester Police's area, which corresponds with the ten local authority

[38] http://www.agma.gov.uk/greater-manchester-prepared/index.html
[39] http://www.agma.gov.uk/cms_media/files/gm_community_risk_register3.pdf?static=1
[40] http://www.agma.gov.uk/greater-manchester-prepared/news-archive/un-hails-greater-manchester-as-a-role-model/index.html
[41] http://www.unisdr.org/campaign/resilientcities/toolkit/essentials
[42] http://www.unisdr.org/applications/hfa/assets/lgsat/documents/Overview-of-the-LGSAT-English.pdf

[43] http://www.100resilientcities.org/#/-_/

areas. The forum is chaired by Greater Manchester Fire and Rescue Service and includes Greater Manchester Police, the local authorities, NHS England, Public Health England, the North West Ambulance Service, Transport for Greater Manchester, the Military, Voluntary Agencies, United Utilities and Electricity Northwest amongst others.

The Forum is linked to a wider network of other partnerships which help to assess and manage risk e.g. the Greater Manchester Flood and Water Management Board and local authority Planning Officers Group and ensure that civil protection activity is aligned with an understanding of climate change risk and adaptation. This will also assist in addressing the recurring slow-onset, small-scale and extensive disasters/emergencies referred to in the rationale for the indicator above.

Most risks included in the Community Risk Register cover a five-year time horizon, however, some risks present consequences beyond this timeframe, such as climate risks, and some health risks such as anti-microbial resistance. These factors are being considered by the Greater Manchester Resilience Forum so they are not overlooked.

Greater Manchester has not experienced an event likely to be classed as an emergency since flooding in the 1950s, despite facing a bomb explosion in the city centre, gas explosions and severe winds and snow since then.

Greater Manchester is implementing risk reduction and resilience strategies informed by accepted international frameworks. This is documented in its Community Risk Register and GMRF Resilience Strategy. It is a Role Model for Total Resilience in the UN Office for Disaster Risk Reduction's Making Cities Resilient campaign

6.2 Economic losses related to GDP caused by disasters

6.2.1 Data currently available

Given that there have not been any emergencies in Greater Manchester since the 1950s, the economic losses for this indicator would be reported as zero. This secondary indicator is likely to continue to report annual losses caused by disasters (or emergencies for the UK definition) as zero, given the likelihood of an emergency occurring which exceeds the ability of the city region to cope.

The indicator is not viewed as very relevant, and additionally there is a reluctance for any economic centre which wants investment and growth, to discuss economic losses, which may imply the area is risky for investment or that following an incident or weather event, that the city is not 'open for business'.

Some data on the potential economic impacts of emergencies or incidents exists, such as the economic impact of the closure of a lane on the M6 motorway (a critical transport route in the North West of England) or the economic impacts of reservoir flooding, but these are not publicly available due to their sensitivity.

6.2.2 Data not currently available

If an emergency were to occur, there is not an established system in place to record and report economic losses. GDP and GVA data is available on an annual basis from the ONS.

In the event of an emergency some financial costs are typically collected, for example, costs to the local responders including the local authority. These costs would be available through data collected

by the local authorities for submission via DCLG for the Bellwin Scheme of Emergency Financial Assistance to Local Authorities. The scheme is currently under review.

There are examples of methods to gather data on the economic losses due to emergencies for example, research has been carried out following the 2014 flooding in Somerset (in the South West of England). This was conducted by the Chamber of Commerce surveying businesses to assess the extent of their losses and loss of business productivity.

Greater Manchester Chamber of Commerce conducts a Quarterly Economic Survey[44] which is very responsive to short term changes in the economy. In order to assess the economic losses it is likely an additional bespoke survey of businesses in Greater Manchester would be needed. This could readily be conducted by the Chamber.

Additionally the Association of British Insurers gathers information on insured losses following significant emergency events, which would provide further data on economic losses.

The 2011 IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation[45] raises further relevant points:

- Global climate and weather-related disaster losses reflect monetised assets and are unequally distributed
- Economic losses from climate, weather and geophysical events are higher in developed countries – but fatalities and economic costs expressed as a % of GDP are higher in developing countries
- Loss estimates are lower-bound estimates because they tend not to include economic costs that are difficult to value such as the loss of lives, eco-system services and cultural heritage.

Greater Manchester and the North West have historic reports which place values on the natural environment and eco-systems services, and would be able to develop a method to place a value on such lost assets in the event of an emergency/disaster.

The value of this indicator would be more relevant to Greater Manchester if the potential economic losses of an emergency such as a major flood, could be expressed in order to make a case for investment in preventative measures.

6.3 Proportion of population living in high-risk zones

This secondary indicator does not have any definitions for what constitutes a high risk zone.

Greater Manchester's risk evaluation assesses the relative likelihood of different levels of consequences occurring. Consequences of all public emergencies are likely to include:

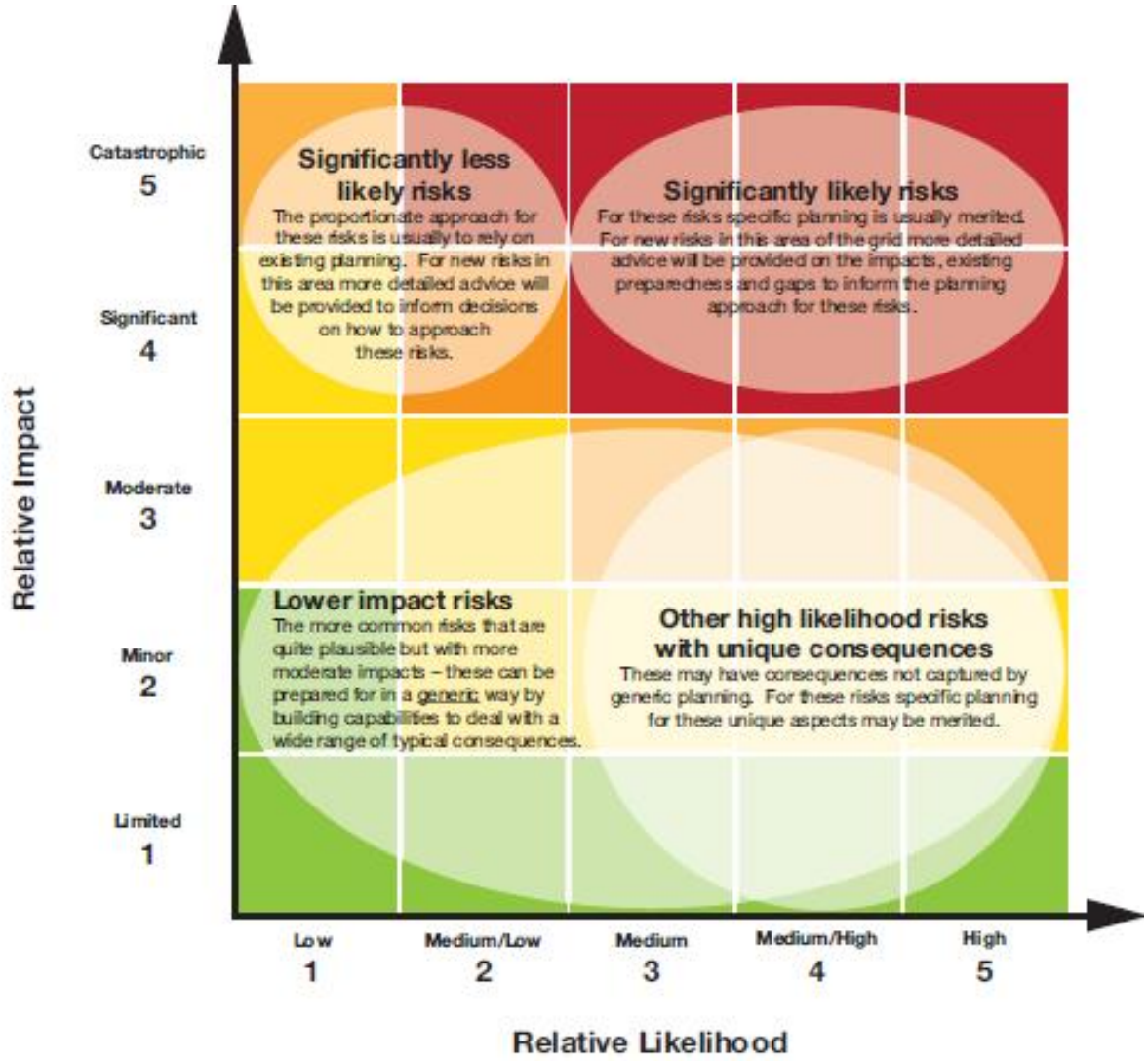
- Loss of life/casualties
- Damage to homes, businesses and infrastructure
- Disruption to public services such as transport or utility supplies
- Public anxiety or outrage
- Pollution
- Damage to the local economy.

Over 70 hazards are considered in GM's risk evaluation, in the following categories:

[44] http://www.gmchamber.co.uk/pages/quarterly-economic-survey
[45] http://www.ipcc-wg2.gov/SREX/images/uploads/SREX-SPMbrochure_FINAL.pdf

- Industrial accidents & technical failure
- Transport accidents
- Severe weather
- Structural
- Human health
- Animal health
- Industrial action
- International Events
- Mass gatherings

The diagram below illustrates the use of probability and impact scores, which are used to plan what emergency capabilities are needed in Greater Manchester.



This indicator provoked questions about the definition of high risk areas including:

- Should high risk areas include areas with high risk levels that are well managed?
- Should it include areas with lots of low level risk but possibly higher cumulative risk?
- What about developing or emerging risks not yet identified as high level?

Greater Manchester's Community Risk Register can be used to enable a focus on risks that are judged to be high impact, as well as those that are high likelihood, i.e. those in the top 'red' band of the chart above.

Some risks can be mapped spatially, such as flood risk areas, which are mapped by Greater Manchester's Strategic Flood Risk Assessment.

The Environment Agency maps different types of flood risk, which may overlap in some local areas where river flooding, surface water and reservoir flooding risks have been identified.

Public information zones for industrial chemical incidents are mapped under COMAH.

Other risks such as pandemic flu or pollution from industrial fires cannot be mapped to cover population numbers within a risk zone.

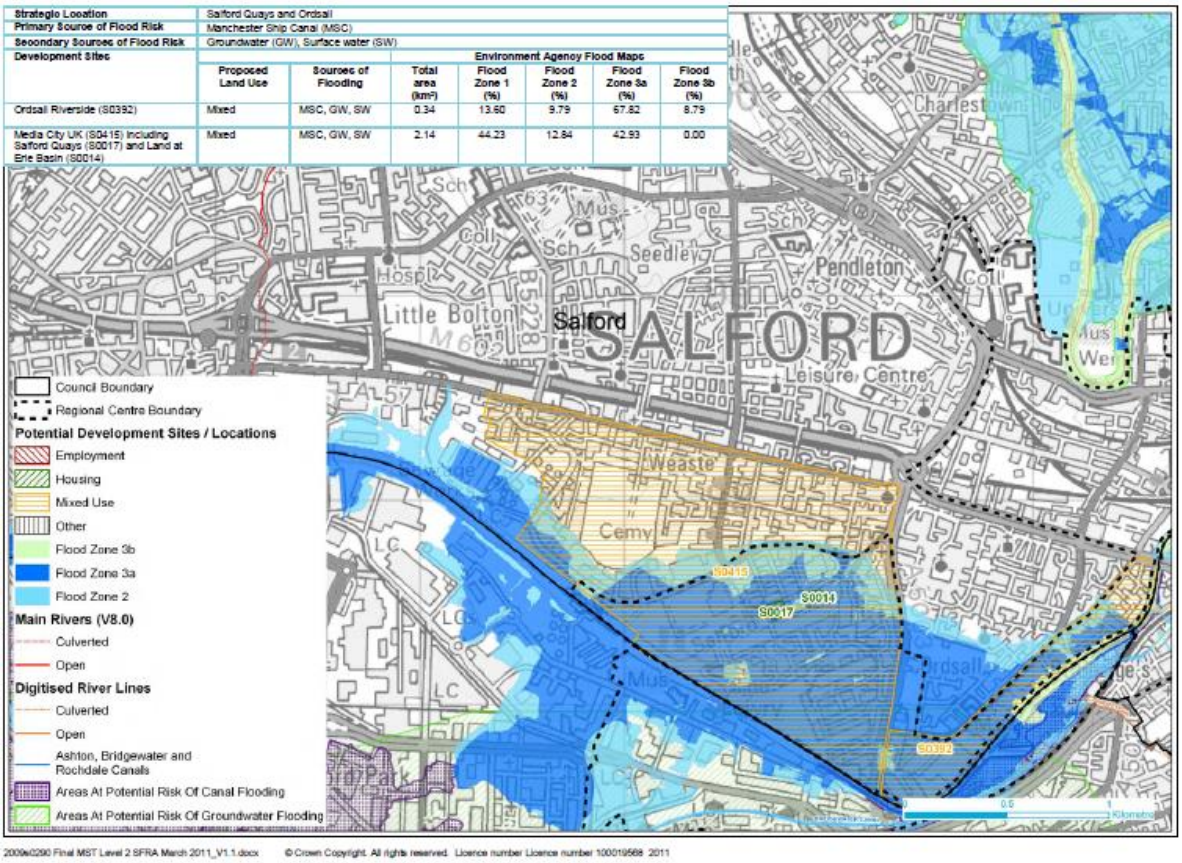
Disclosing population numbers in high risk zones is politically and economically sensitive, particularly as the risks are closely managed, and populations are alerted in the event of an incident. However, mapping cumulative risks could be interesting to see where there are more risks and potential vulnerabilities. This is something the GM Civil Contingencies and Resilience Unit discussed with a view to GIS mapping in future to inform response planning as well as assessing resilience.

6.3.1 Data Available

The natural disaster most likely to affect Greater Manchester is flooding.

The Environment Agency maps flood risk areas across the UK (Zone 2 medium risk, Zone 3 high risk) showing areas at risk from river flooding ignoring flood defences which can be breached, overtopped or fail. The map below is included as an example for this report, rather than as a data source.

Strategic Location	Salford Quays and Ordsall						
Primary Source of Flood Risk	Manchester Ship Canal (MSC)						
Secondary Sources of Flood Risk	Groundwater (GW), Surface water (SW)						
Development Sites			Environment Agency Flood Maps				
	Proposed Land Use	Sources of Flooding	Total area (km²)	Flood Zone 1 (%)	Flood Zone 2 (%)	Flood Zone 3a (%)	Flood Zone 3b (%)
Ordsall Riverside (S0392)	Mixed	MSC, GW, SW	0.34	13.60	9.79	67.82	8.79
Media City UK (S0415) including Salford Quays (S0017) and Land at Erie Basin (S0014)	Mixed	MSC, GW, SW	2.14	44.23	12.84	42.93	0.00



2009s0290 Final MST Level 2 SFRA March 2011_V1.1.docx © Crown Copyright. All rights reserved. Licence number Licence number 100019568 2011

Source:http://www.manchester.gov.uk/downloads/download/3871/strategic_flood_risk_assessment-manchester_salford_trafford

Because of flood defences and flood management, the areas in dark blue are not strictly speaking in a high risk zone.

These maps form the basis of planning policy for new development in areas at risk from flooding, are a key element of catchment management plans and support the implementation of flood risk management and flood warning plans.

The Environment Agency has provided the following data on properties protected in Greater Manchester:

Properties in Flood Warning Areas

Total number of properties in Flood Warning Areas	**30,527**
Total number of properties Fully Registered in Flood Warnings Direct	**6,388**
% Take up	**21%**
Total number of Properties Potentially Warned*	**14,457**

*Note: This includes those fully registered plus other properties in the risk area for which the EA has a contact number.

A snapshot: Salford's eight flood warning areas in the River Irwell Catchment enables the Environment Agency to contact 9,100 people to provide alerts or warnings depending on their location and risk level.

A snapshot: Greater Manchester's rivers and watercourses have many man-made physical barriers, like roads, bridges and walls. This means there is not a natural flood plain. In some water courses the Environment Agency has installed metal grids to catch debris that could build up and cause flooding around the barriers during high water. These are regularly maintained and cleared. Nine of Greater Manchester's critical grid runs protect 2,930 properties in the city region.

6.3.2 Data Not Available

After discussions with the Resilience Development Group, a multi-agency group of senior managers reporting to GMRF, a preventative metric was preferred which better applies to Greater Manchester: people or properties protected rather than people living in high risk zones.

The Environment Agency has been asked to provide data for Greater Manchester on the numbers **protected** from flooding, however, this cannot be expressed as a percentage of the population, because:

- the data is presented in a format that would double/triple count homes in multiple types of flood risk
- it would imply the remaining population is at risk – although it is not in a flood risk zone.

Further data on infrastructure is awaited from the Environment Agency.

6.4 Number of deaths, injuries, and displaced people caused by natural disasters

Number of deaths, injuries, and displaced people caused by disasters annually per 100,000 population

As explained above, this indicator is not expected to be relevant on an annual basis to Greater Manchester due to the low level of natural risks it faces, and the fact that it is unlikely to experience a natural disaster which would overwhelm local response capacity.

There is no definition of 'displaced' or what time period it might cover. It would be possible to record the number of people attending a rest centre during a weather event such as storms or a flood, but many people might temporarily move to friends or relatives. Likewise the level of injury might include first aid given at the scene, but may not include longer term impacts such as mental health problems or longer term impacts through exposure to radiation.

However, in the event of a disaster data would be recorded by the response services and would certainly include number of dead and injured, while displaced people data would be gathered by the local authorities.

The indicator lends itself to national rather than city-level reporting and likely to be zero for most of the time for Greater Manchester.

6.5 Number of housing units damaged and destroyed

The relevance of this indicator to Greater Manchester is as discussed above: there is a very low likelihood of a disaster as defined in the USDG and policies are in place to manage risks. However, as in the case of recent floods, numbers of housing units damaged and destroyed would be collated by local authorities, with supporting information from the Association of British Insurers. However, data collected on recent UK floods tends to use indicators on the value of the damage and the number of insurance claims, rather than the number of housing units, as this data is easy to process. Definitions of the extent of damage to houses would need to clarified – would this make a house uninhabitable, or perhaps it could mean a house has a Category 1 Hazard (see housing section above) which is reported under Local Authority Housing Statistical Returns to DCLG.

6.6 Sources and Drivers of Data

The legislation which drives action, and potential data collection on disasters/emergencies and natural disasters in the UK is the **Civil Contingencies Act 2004**, along with international initiatives that Greater Manchester participates in.

Control of major accident hazards Regulations 1999 (COMAH) aim to prevent and mitigate the effects of those major accidents involving dangerous substances, such as chlorine, liquefied petroleum gas, explosives and arsenic pentoxide which can cause serious damage/harm to people and/or the environment. The COMAH Regulations treat risks to the environment as seriously as those to people. The Health and Safety Executive and Environment Agency enforce COMAH regulations. Local authorities play a key role by preparing, reviewing, revising and testing off-site emergency plans for dealing with the off-site consequences of major accidents at top-tier sites.

A main driver for current activity on resilience is Greater Manchester's role in the UN Office for Disaster Risk Reduction's *Making Cities Resilient* campaign. It is engaged in the local government self-assessment tool[46] covering the Ten Point Checklist – Essentials[47] which draw on the Sendai Framework for Disaster Risk Reduction agreed by the UN in March 2015.

[46] http://www.unisdr.org/applications/hfa/assets/lgsat/documents/Overview-of-the-LGSAT-English.pdf

[47] http://www.unisdr.org/campaign/resilientcities/toolkit/essentials

6.7 Indicator 11.5 Summary

Greater Manchester is not at great risk of natural or industrial disasters. It also has robust risk assessment and management plans in place, coordinated at the AGMA level by the Civil Contingencies and Resilience Unit and at a city region level by the Local Resilience Forum. Risks are assessed and recorded in the Community Risk Register and are regularly updated. Risks with impacts beyond a five year period are under consideration in partnership with other organisations. Greater Manchester is an active leader on the disaster resilience stage internationally.

The secondary data for this target is generally not readily available because of the absence of a disaster/emergency. Capability exists in the city region to provide such data if it becomes relevant.

7 Target 11.6 Environmental Impacts

Target based on Bangalore Outcome Document January 12 – 14, 2015

By 2030, reduce the adverse environmental impacts of cities, paying special attention to biodiversity loss, air quality, construction materials, and waste management

Indicators examined:

Percentage of urban solid waste regularly collected and well managed

Proportion of recycled from municipal waste

Percentage of urban solid waste regularly collected and recycled (disaggregated by E- waste and non-E- waste)

Fine particulate matter (PM 2,5 concentration)

Percentage of wastewater treated within an urban agglomeration

GHG emissions tons/capita

The secondary indicators contain very different sets of data, which is collected by different organisations in the UK, so they are analysed below in four sub-sets:

- Waste
- Wastewater
- Air quality
- GHG emissions.

7.1 Waste

Rationale and definition: Urban households and businesses produce substantial amounts of solid waste (not including industrial, construction, and hazardous waste) that must be collected regularly and disposed of properly in order to maintain healthy and sanitary living conditions. Such collection can be through formal or informal means. Uncollected and improperly managed solid waste can end up in drains and dumps, and may result in blocked drains and other unsanitary conditions. Mosquitos that spread disease can breed in blocked drains and dumps. In addition, some constituents of solid waste, such as organic matter, can attract flies and rodents that spread gastrointestinal and parasitic diseases.

Sustainable solid waste management is essential. This implies waste reduction, reuse, recycling and composting, incineration, and disposal in landfills. Waste reduction, recycling, reuse and composting are preferred methods and should be promoted, as they reduce demand on scarce environmental resources, decrease energy use, and minimize the quantity of waste that must eventually be incinerated or disposed in landfills.

UN-Habitat (2009) has specified that solid waste collection can include (formal or informal) collection from individual households and regular dumpster collection, but not local dumps to which households must carry garbage. Solid waste collection should be considered regular and adequate if it occurs at least once a week.

Greater Manchester Waste Disposal Authority (GMWDA) is responsible for dealing with the waste collected through council waste collection schemes and for household waste recycling centres

(HWRCs) in 9 of the 10 GM authority areas. One GM authority (Wigan) acts as a Unitary Authority responsible for its own waste collection and disposal.

The definition of "urban" waste is an issue for data at the city-level in the UK. Local authorities collect data for "municipal waste" and "waste from households". These include separate data for:

- all household waste collected (recyclables and non-recyclables)
- waste taken to a waste/recycling facility
- bulky waste collected (e.g. furniture)
- recycling from street bins
- any commercial waste collected by the local authority
- illegal dumping of waste (fly-tipping) – but by incidents rather than weight/volume.

It does not include:

- the majority of commercial waste, which is collected and disposed of by private contractors
- any industrial, construction or hazardous waste
- street cleaning/sweeping, gully emptying
- separately collected hazardous waste e.g. healthcare waste, asbestos waste
- recycling activities outside the municipal collection schemes (textile collections, scrap metal collections).

Under the headings below, data is considered currently available for municipal waste, but not for urban waste. However, if the indicator were to cover only the UK definition of municipal waste, then all indicator data would be currently available.

7.1.1 Data currently available

Proportion of recycled from municipal waste

This is based on the definition Local Authority Collected Waste (LACW) which includes waste collected from households and any commercial waste also collected by the local authority. The data can also be provided for Waste from Households.

Data for 2013/14

Authority	LACW Collected for Recycling, Composting and Reuse	Total LACW Arisings	% for Recycling
Greater Manchester WDA (MBC)	495963	1087450	46%
Wigan MBC	67633	141506	48%
Total	563596	1228956	46%

Source: WasteDataFlow[48]

7.1.2 Data available but not immediately accessible

Percentage of urban solid waste regularly collected and well managed

Well-Managed but Not Collected

The inclusion of "collected" in the definition is an issue for the UK waste management system. Regular collection services are provided for waste from households, separated into recyclable and

[48] www.wastedataflow.org/

non-recyclable waste. In addition, there are a variety of collection routes for recycling of household waste:

- Local Authority managed Household Waste Recycling Centres (HWRC) (usually under contract to a private sector operator). These are bring-sites for householders and are generally used intermittently to drop off large quantities of waste e.g. when undertaking a home "clear-out", re-decorating, a large amount of gardening etc. Some of this waste (e.g. garden waste, paper, plastics) could be collected in the weekly collections, but householders prefer to take it to the Recycling Centre (as part of their project). For parts of this waste e.g. wood, paint, WEEE, textiles there are no separate collection options.
- Separate "Bring-sites" for recyclable waste (typically glass, paper, plastics, metals, textiles) at other locations regularly accessed by car such as car parks, supermarkets.
- On-street bins for general waste and recyclable waste.

This non-collected waste is well-managed in that it ends up at the same disposal facilities as collected household waste.

Data on these waste routes is also collected quarterly and published on WasteDataFlow, and a selection of this data is reported annually by GMWDA.

GM Waste collected at HWRCs and through regular collections 2013/14

Authority	HWRC Arisings	Total LACW Arisings	Non-collected waste
Greater Manchester WDA (MBC)	220,582	1,087,450	20%
Wigan MBC	19,136	141,506	14%
Total	239,718	1,228,956	20%

Sources: GMWDA Annual Report and WasteDataFlow

Not Well-Managed Waste

Waste collection and management is heavily regulated in the UK, and it could be argued that the only waste not regularly collected and well managed is any that is illegally dumped (fly-tipping). Local authorities are required to report incidents of fly-tipping, by size and type of load.[49]

It may be possible to estimate the percentage of municipal waste that is not regularly collected and well managed from the reported number and size of fly-tipping incidents. The table below estimates this based on assumptions of the weight of different types of incident[50], and compares the total tonnage fly-tipped against Local Authority Collected Waste.

However, there is no scientific basis to the weight estimates and further work would be required to check these.

[49]Fly-tipping incidents reported by local authorities in 2012-13
https://www.gov.uk/government/publications/fly-tipping-in-england

[50] UK average weight factor for household waste = 0.27 tonnes/m3. One 240L wheelie bin holds 0.24m3 of household waste. This is equivalent to 0.0648 tonnes

Fly-tipping Incidents in Greater Manchester Authorities

	Total Incidents	Single Black Bag	Single Item	Car Boot or Less	Small Van Load	Transit Van Load	Tipper Lorry Load	Multi Loads
Total	38,307	1,083	3,210	7,428	14,563	9,106	1,420	401
Est weight/ load (tonnes)		0.015	0.05	0.1	0.5	1.5	4	10
Est weight (tonnes)	31,550	16	161	743	7,282	13,659	5,680	4,010
Total LACW	1,228,956							
% Illegally dumped	2.6%							

Source: Fly-tipping incidents and actions reported by local authorities in 2012-13

On this basis the percentage of LACW regularly collected and well managed could be estimated to be **77.4%** i.e. 20% is not collected and 2.6% is neither collected nor well-managed.

However, the "collection" figure is not a true reflection of the quality of waste management in urban areas in the UK, and the "well managed" figure would be a truer representation of this. It is also debateable whether the LACW figure is equivalent to urban solid waste, as it does not include commercial waste. This is discussed further below.

7.1.3 Data not available

Very little data is available for non-household waste streams at the local authority level. This waste is outside the remit of local authorities and is managed by private waste contractors through commercial arrangements with businesses.

National data on commercial and industrial waste is produced annually based on returns from permitted waste carriers (managed by the Environment Agency) and published by Defra in the Digest of UK Waste Statistics. The latest publication (January 2015) provides statistics up to 2012.

UK Waste Arisings 2012	kT	
Household	27,506	14%
Commercial & Industrial	47,567	24%
Construction	100,230	50%
Other	24,716	12%
	200,019	100%

Source: Defra UK Statistics on Waste – 2010 to 2012

A separate survey of commercial and industrial waste (Reconcile Project 2014) derived a total of 44 million tonnes for England in 2012, 12% higher than recorded through the national waste returns.

National data on waste recovery routes shows that 50% of all waste that entered into treatment in the UK was recovered, and only 26% landfilled.

UK Waste treatment routes 2012	kT	
Energy recovery	1,585	1%
Recovery other than energy recovery	91581	49%
Landfill	48,512	26%

Incineration	6,102	3%
Land treatment and release into water bodies	38,383	21%
Total	186,163	100%

Source: Defra UK Statistics on Waste – 2010 to 2012

Waste contractors are incentivised to sort and recycle waste on the commercial markets and are charged the Landfill Tax to deposit non-recyclable waste in regulated waste facilities. The Landfill Tax is currently £82.60/tonne (April 2015) for active waste and £2.60/tonne for inactive waste (predominantly building materials and inert waste). It was introduced in 1996 at £7/tonne and has increased annually. National data on waste subject to the Landfill Tax is published by HMRC:

https://www.uktradeinfo.com/Statistics/Pages/TaxAndDutybulletins.aspx

36.4 million tonnes of waste was subject to Landfill Tax in 2013/14, a 62% reduction in quantity since the first full year of the tax (1997/8).

If this national data were required for Greater Manchester, it would be necessary to trace the collection source of waste materials from the waste carrier returns. This is not considered feasible through the current waste management and data collection systems.

An alternative method could be to estimate the urban commercial waste based on the size of each commercial sector. The Reconcile Project estimated waste tonnages per sector for 2012. This could be translated into tonnes/GVA and applied to the GVA of each sector within Greater Manchester.

However, as the aim of the target is to identify improperly managed waste, this data would not produce any further useful information.

Percentage of urban solid waste regularly collected and recycled (disaggregated by E- waste and non-E- waste)

Data on waste collected and sent for recycling is disaggregated by type of materials. The table below shows the tonnage of different types of recycled materials for GM authorities for 2013/14, excluding some smaller categories (e.g. batteries, oil, paint, plasterboard, tyres, furniture, bulky waste all of which were under 500 tonnes). Note this is based on household waste rather than LACW.

GM waste recycled by material type 2013/14, tonnes

Material	Tonnes Recycled	%
Batteries	217	0.0%
Bulky	4	0.0%
Furniture	60	0.0%
Glass	61,730	12.1%
Metal	22,413	4.4%
Oil	174	0.0%
Organic	202,491	39.6%
Other Materials	3,536	0.7%
Paint	120	0.0%
Paper & Card	103,683	20.3%
Plasterboard	124	0.0%
Plastic	11,920	2.3%

Rubble	48,796	9.5%
Textiles	3,742	0.7%
Tyres	486	0.1%
WEEE	10,852	2.1%
Wood	40,865	8.0%
Total	511,214	100.0%

Source: WasteDataFlow

E-waste constitutes 2.1% of the recycled household waste, or 0.9% of the Local Authority Collected Waste.

Again, this is not a true representation of the E-waste collection system. Much of the white goods waste is collected for recycling and re-use by waste charities, and the major retailers run take-back schemes alongside purchases.

Nationally e-waste is reported by the Environment Agency under the WEEE reporting regulations. This data is not available at local authority area level.

UK WEEE Collected 2014

	Tonnes
Household WEEE	491,880
Non-Household WEEE	13,974
Total	505,854

Source: WEEE collected in the UK

https://www.gov.uk/government/statistics/waste-electrical-and-electronic-equipment-in-the-uk-2013

This suggests that the total collected for GM (based on a per capita calculation) should be around 20,000 tonnes or almost double the amount reported through the local authority collection schemes.

Furthermore, a report by the United Nations University found that data on e-waste collected under the WEEE Regulations significantly under-estimated the quantities produced and collected. For the UK, it was estimated that 30% of e-waste was collected within the metals waste stream, and 8% goes into general waste bins.

The Global E-waste Monitor 2014: Quantities, Flows and Resources

http://i.unu.edu/media/ias.unu.edu-en/news/7916/Global-E-waste-Monitor-2014-small.pdf

7.1.4 Sources and drivers of data

Nationally, waste data collection is driven by the EU Waste Statistics Regulations (EC 2150/2002) which requires all Member States to report to the European Commission every two years:

- Quantities and treatment of waste
- Number and capacities of waste management facilities.

Waste data is the responsibility of the Department for Environment, Food & Rural Affairs (Defra), which publishes an annual report: Digest of Waste and Resource Statistics

www.gov.uk/government/statistics/digest-of-waste-and-resource-statistics-2015-edition

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/416471/UK_Statistical_release_UPDATEv6_19_03_2015.pdf

Local authorities report waste statistics quarterly to Defra. Data is publicly available on the WasteDataFlow website: http://www.wastedataflow.org

GMWDA publish data on their website on household waste arisings (tonnages) and % of waste recycled and composted from 2005-2011. Data for subsequent years is published in the GMWDA Annual Report:

- Household waste collected (tonnes), disaggregated by Local Authority area
- Local Authority Collected Waste (LACW) (tonnes), disaggregated by Local Authority area – includes any commercial waste collected by the LA
- % of LACW recycled and composted, by Local Authority area
- HWRC tonnes collected, % recycled & % composted.

This reproduces some of the data provided in quarterly returns to WasteDataFlow.

Collection of household waste is the responsibility of the local council.

Most local authorities in the UK offer a weekly collection of waste from households, although in many authorities this alternates between collection of recyclables and non-recycled waste. Some local authorities will offer a collection service for commercial waste at market rates.

Industrial and Commercial waste: national data is based on surveys and not disaggregated to the local authority level. Commercial waste carriers are not required to report quantities of waste collected, waste materials or where it is from. Waste data is collected only when it is treated at permitted facilities.

Commercial & industrial waste statistics:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/422618/Digest_of_waste_England_-_finalv2.pdf

Fly-tipping: Local Authorities collect data on the number of incidents of fly-tipping, together with the type of location, type of waste, approximate volume and estimated clearance costs.

Data collection is in response to Section 33(1)(a) of the Environmental Protection Act 1990. It is a politically sensitive figure as visible waste is seen as an indication of the effectiveness of the local council, and represents a far greater cost to the council than waste collection.

Local councils and the Environment Agency (EA) both have a responsibility in respect of illegally deposited waste. Local councils deal with most cases of fly tipping on public land, whilst the EA investigates and enforces against the larger, more serious and organised illegal waste crimes.

The data is published annually by Defra: https://www.gov.uk/government/statistical-data-sets/env24-fly-tipping-incidents-and-actions-taken-in-england

Electronic Waste: Data on electronic waste is collected under the Waste Electric and Electronic Equipment (WEEE) Regulations which became law in the UK on 1 January 2014 (replacing the 2006 Regulations) and contain the provisions of the EU WEEE Directive 2012/19/EU.

The Environment Agency is responsible for data collection through the Producer Compliance Schemes (PCSs). This includes WEEE collected from a Designated collection Facility (DCF), WEEE returned under regulation 32, and WEEE returned under regulation 39, split by Household/non-household categories.

Waste electrical and electronic equipment (WEEE) collection data is reported quarterly –

https://www.gov.uk/government/statistics/waste-electrical-and-electronic-equipment-in-the-uk-2013

7.2 Wastewater

Percentage of wastewater treated within an urban agglomeration

Wastewater treatment in Greater Manchester is the responsibility of United Utilities, a private company regulated by a range of bodies including Defra, Environment Agency, Ofwat, the Drinking Water Inspectorate and the Consumer Council for Water. United Utilities holds a licence to provide water and sewage services to around seven million people in North West England.

7.2.1 Data currently available

Out of the 1,283,563 households within Greater Manchester, 1,272,070 are served by drainage from United Utilities. This gives a percentage of 99% of properties in GM treated by UU Wastewater. The remaining 11,493 properties (in the rural fringes of the city) will be served by private sewage systems such as septic tanks.

National progress towards the Urban Waste Water Treatment Directive was last reported for 2012:

https://www.gov.uk/government/publications/waste-water-treatment-in-the-uk-2012

That report states that only one community of over 15,000 population-equivalent in the UK (Brighton & Hove) did not meet the requirements for secondary treatment of wastewater. Therefore it could be assumed that 100% of GM wastewater is treated.

7.2.2 Data available but not immediately accessible

While the overall picture is of a well-managed wastewater system, there are a number of sites (e.g. industrial sites, properties with septic tanks) which do discharge wastewater or other substances to surface waters or groundwater. The Environment Agency maintains a register of sites with permits for “Water Discharge Activities” and “Water Discharge Exemptions”. Water Discharge Activity covers the discharge or entry to surface waters which are controlled waters (but not to groundwater) of any poisonous, noxious or polluting matter; waste matter; trade effluent or sewage effluent. Water Discharge Activities that meet certain criteria can be exempt from permitting.

These registers contain information on the location and nature of the permit, but no data on actual discharges. There are 4492 water discharge permits and 226 water discharge exemptions across GM, although many of these records are duplicated.

7.2.3 Data not available

No data on performance is produced at the urban level.

7.2.4 Sources and drivers of data

Wastewater data collection in the UK is driven by Article 16 of the European Union Urban Waste Water Treatment Directive, which requires periodic reporting on the collection and treatment of urban waste water, and on the re-use and disposal of the residual sewage sludge. Urban waste water is defined in the Directive as the mixture of domestic waste water from kitchens, bathrooms and toilets, the waste water from industries discharging to sewers and rainwater run-off from roads and other impermeable surfaces such as roofs, pavements and roads draining to sewers.

Policy is set, and data is collected, by the Department for Environment, Food and Rural Affairs (Defra).

7.3 Air Quality

Fine particulate matter (PM 2,5 concentration) *or*

Mean urban air pollution of particulate matter (PM10 and PM2.5)

Rationale and definition: Rapid urbanization has resulted in increasing urban air pollution in major cities, especially in developing countries. It is estimated that over 1 million premature deaths can be attributed to urban ambient air pollution. This has severe economic and health impacts, particularly for young children. We therefore propose that the post-2015 framework include an indicator tracking the mean urban air pollution of particulate matter.

PM10 is the concentration of particles with a diameter equal to or greater than 10 microns (μ), which are usually produced from construction and mechanical activities, while PM2.5 is the concentration of particles with a diameter equal to or greater than 2.5 microns, usually produced from combustion. These smaller particles are actually more damaging as they permeate the lung more deeply. WHO has set guidelines for PM10 at 20 μg/m3 annual mean and 50 μg/m3 24-hour mean and for PM2.5 at 10 μg/m3 annual mean and 25 μg/m3 24-hour mean.184 However, many cities regularly experience concentrations over 10 times higher than these recommendations.

7.3.1 Data currently available

Defra produces annual modelled data for population-weighted annual mean concentrations of PM2.5 by local authority area. This is calibrated from data collected from a network of automatic and non-automatic monitoring stations across the country. A description of the data modelled is given below (from UK-Air).

Population-weighted annual mean $PM_{2.5}$ data

These data are population-weighted annual mean concentrations (μg m^{-3}) for each Local Authority. These data are suitable for use in estimating the burden of mortality attributable to long-term exposure to particulate air pollution using methods such as those recommended by COMEAP in its statement "Estimating the mortality burden of particulate air pollution at the local level" and used in

calculating the Public Health Outcomes Framework indicator "Fraction of Mortality Attributable to Particulate Air Pollution".

Concentrations of anthropogenic, rather than total, $PM_{2.5}$ are used as the basis for this indicator, as burden estimates based on total $PM_{2.5}$ might give a misleading impression of the scale of the potential influence of policy interventions (COMEAP, 2012). However, modelled concentrations of anthropogenic $PM_{2.5}$ are more uncertain than those of total $PM_{2.5}$ because of the uncertainty associated with the assignment to anthropogenic and non-anthropogenic sources.

Background annual average $PM_{2.5}$ concentrations for the year of interest are modelled on a 1km x 1km grid using an air dispersion model (Pollution Climate Mapping), and calibrated using measured concentrations taken from background sites in Defra's Automatic Urban and Rural Network. Data on primary emissions from different sources from the National Atmospheric Emissions Inventory and a combination of measurement data for secondary inorganic aerosol and models for sources not included in the emission inventory (including re-suspension of dusts) are used to estimate the anthropogenic (human-made) component of these concentrations. By approximating LA boundaries to the 1km by 1km grid, and using census population data, population weighted background $PM_{2.5}$ concentrations for each lower tier LA are calculated. This work is completed under contract to Defra, as a small extension of its obligations under the Ambient Air Quality Directive (2008/50/EC).

Source: http://uk-air.defra.gov.uk/data/pcm-data

Data for the 10 GM authorities for 2012 from the national modelling report is given below.

Local Authority	PM2.5 2012 (total)	PM2.5 2012 (non-anthropogenic)	PM2.5 2012 (anthropogenic)
Bolton	10.4226	2.075	8.3476
Bury	10.5389	2.0656	8.4733
Manchester	11.1251	2.0735	9.0516
Oldham	10.805	2.0592	8.7457
Rochdale	10.5395	2.0554	8.4841
Salford	11.2227	2.0772	9.1455
Stockport	10.46	2.0744	8.3856
Tameside	10.873	2.0649	8.8081
Trafford	10.4623	2.082	8.3803
Wigan	10.2119	2.0921	8.1197
GM	**10.6939**	**2.0731**	**8.6207**

Source: http://uk-air.defra.gov.uk/data/pcm-data

This means that for GM, the city is well below the 25 µg m-3 (target).

Fine Particulate Matter (PM2.5 concentration) Greater Manchester 2012 was 10.69 µg m-3

7.3.2 Data available but not immediately accessible

The above data table could be produced for PM10, based on data collected by DEFRA, but is not currently produced.

7.3.3 Sources and drivers of data

Air pollution monitoring has been in place in the UK since the Clean Air Acts of 1956 and 1968, and subsequent 1974 Control of Air Pollution Act. In 1995, the Environment Act set standards for most common pollutants and under the National Air Quality Strategy, required local authorities to meet air quality objectives.

Current policy and monitoring is driven by international agreements. UK air pollutant data is reported to the United Nations Economic Commission for Europe and the European Monitoring and Evaluation Programme (UNECE & EMEP) and National Emission Ceilings Directive (NECD).

Local authorities are required to report on air quality and are responsible for declaring Air Quality Management Areas (AQMAs) in areas where the national objective levels are likely to be exceeded. Greater Manchester has no AQMAs for PM.

Data from a network of around 300 air quality monitoring stations across England is published on the Air Quality England website: http://www.airqualityengland.co.uk

Monitored air quality data relates to specific locations, rather than an area, and is considered to be accurate to +/-10%. This data is used in a number of different models to assess a range of pollutants at different spatial scales, with varying degrees of accuracy.

National objectives for air quality are shown below.

Air Quality Objectives for England for the protection of human health, July 2007			
Pollutant	**Air Quality Objective**		**To be achieved by**
	Concentration	**Measured as**	
Benzene	16.25 µg m-3	Running annual mean	2003
	5.00 µg m-3	Annual mean	2010
1,3-Butadiene	2.25 µg m-3	Running annual mean	2003
Carbon Monoxide	10.0 mg m-3	Maximum daily running 8-hour mean	2003
Lead	0.5 µg m-3	Annual mean	2004
	0.25 µg m-3	Annual mean	2008
Nitrogen Dioxide	200 µg m-3 not to be exceeded more than 18 times a year	1-hour mean	2005
	40 µg m-3	Annual mean	2005
Particles (PM10) (gravimetric)	50 µg m-3, not to be exceeded more than 35 times a year	Daily mean	2004
	40 µg m-3	Annual mean	2004
Sulphur dioxide	350 µg m-3, not to be exceeded more than 24 times a year	1-hour mean	2004

	125 µg m-3, not to be exceeded more than 3 times a year	24-hour mean	2004
	266 µg m-3, not to be exceeded more than 35 times a year	15-minute mean	2005
New Objectives or not included in the July 2007 Regulations			
Particles (PM2.5) (gravimetric)	25 µg m-3 (target)	Annual mean	2020
	15% cut in urban background exposure	Annual mean	2010 - 2020
PAH	0.25 ng m-3	Annual mean	2010
Ozone	100 µg m-3 not to be exceeded more than 10 times a year	8 hourly running or hourly mean*	2005

Air quality in Greater Manchester is managed centrally on behalf of the 10 local authorities and data from the network of 16 automatic monitoring stations is reported on the Great Air Manchester website: http://www.greatairmanchester.org.uk There is also a network of over 250 non-automatic diffusion tubes, providing a good picture of the spatial distribution of Nitrogen Dioxide across the city.

The automatic stations measure different types of emissions: 12 monitor PM10 and only 3 monitor PM2.5.

Automatic Air Quality Monitoring Stations in GM

Site Name	Pollutants	Type
Bury Prestwich	NO_2, NOx (as NO_2) & PM10 (TEOM)	Roadside
Bury Radcliffe	NO_2, NOx (as NO_2) & PM10 (TEOM)	Roadside
Glazebury	NO_2 & NOx (as NO_2)	Rural Background
Manchester Oxford Road	NO_2, NOx (as NO_2) & PM10 (BAM)	Kerbside
Manchester Piccadilly	NO_2 & NOx (as NO_2) & PM25 (FDMS)	Urban Background
Manchester Piccadilly LA	PM10 (BAM)	Urban Background
Manchester South	NO_2 & NOx (as NO_2)	Suburban Industrial
Salford Eccles	NO_2, NOx (as NO_2), PM10 (FDMS) & PM25 (FDMS)	Urban Industrial
Salford M60	NO_2, NOx (as NO_2) & PM10 (TEOM)	Roadside
Stockport Hazel Grove	NO_2, NOx (as NO_2) & PM10 (TEOM)	Roadside
Tameside Mottram Moor	NO_2, NOx (as NO_2) & PM10 (TEOM)	Roadside
Tameside Two Trees School	NO_2, NOx (as NO_2) & PM10 (TEOM)	Urban Background

Trafford	NO_2, NOx (as NO_2) & PM10 (TEOM)	Urban Background
Trafford A56	NO_2, NOx (as NO_2) & PM10 (TEOM)	Roadside
Wigan Centre	NO2 & NOx (as NO2) & PM25 (FDMS)	Urban Background
Wigan Centre PM10	PM10 (TEOM)	Urban Background

Source: Great Air Manchester

The local emissions data is used to provide public health information, support policy/action on air quality and to calibrate the national monitoring models. For GM, air quality is an important factor in development decisions. There are AQMAs for NOx in the city centre and all along the motorway encircling the city, as well as on major roads within the city.

7.4 Greenhouse Gas Emissions (GHG)

GHG emissions are monitored by the Department of Energy and Climate Change (DECC). CO2 emissions are disaggregated to Local Authority area level and annual data is available for 2005-2012. CO2 emissions modelling is consumption-based, primarily from energy use data, and allocated to local authority areas. So for example, CO2 related to electricity is allocated to the point of use rather than the generation site. Modelled data is based on[51]:

- Electricity and gas consumption collected at the meter point for domestic and non-domestic properties
- Returns on point source emissions for large industrial organisations
- Solid and liquid industrial fuels based on employment distributions and fuel intensity by sector
- Solid and liquid domestic fuels based on mapped areas of usage
- Road transport based on detailed DfT traffic census data and NAEI emissions factors
- Other transport based on vehicle mileage and emissions factors
- Land Use, Land Use Change and Forestry activities (which result in a net removal of emissions from the atmosphere) using dynamic models of change in stored carbon driven by land use change data.

There is no consideration in this model of CO2 emissions related to goods consumed within the local area, although national reporting of the UK's carbon footprint shows that "imported CO2 emissions" account for 45% of the national emissions[52].

7.4.1 Data currently available

CO2 emissions data is produced at Local Authority level, but not other GHGs. Nationally CO2 accounts for 82% of GHGs. Annual data on CO2 emissions is published on DECC's website[53]. The latest release is for 2012.

[51] Modelling methodology is detailed on https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/400749/20140624_Methodology_summary_Local_Authority_CO2_emissions.pdf

[52] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/414180/Consumption_emissions_Mar15_Final.pdf

[53] https://www.gov.uk/government/statistics/local-authority-emissions-estimates

CO2 Emissions for Greater Manchester (Thousand tonnes)

	2005	2012
A. Industry and Commercial Electricity	4,274	3,731
B. Industry and Commercial Gas	2,010	1,832
C. Large Industrial Installations	63	33
D. Industrial and Commercial Other Fuels	654	455
E. Agricultural Combustion	11	10
Industry and Commercial Total	**7,012**	**6,061**
F. Domestic Electricity	2,475	2,520
G. Domestic Gas	3,800	3,028
H. Domestic 'Other Fuels'	244	232
Domestic Total	**6,519**	**5,780**
I. Road Transport (A roads)	1,493	1,268
J. Road Transport (Motorways)	1,616	1,458
K. Road Transport (Minor roads)	1,570	1,407
L. Diesel Railways	47	55
M. Transport Other	60	56
Transport Total	**4,786**	**4,243**
N. LULUCF Net Emissions (Land Use)	78	61
Grand Total	**18,395**	**16,145**
Population ('000s, mid-year estimate)	2,564	2,702
Per Capita Emissions (t)	7.2	6.0

Source: 2005 to 2012 UK local and regional CO2 emissions: full dataset

CO2 emissions tons/capita for Greater Manchester 2012 was **6.0**

7.4.2 Data not available

GHG emissions tons/capita

GHGs other than CO2 are only collected at the national level. It is extremely unlikely that this data would be collected at the GM level. Local indicators and targets focus on CO2 rather than GHGs, so the data would serve no purpose.

7.4.3 Sources and drivers of data

National data collection on GHG emissions is driven by national and international targets.

The UK signed up in 1995 to an internationally agreed target of a 12.5% cut in GHG emissions from 1990-2012 under the Kyoto Protocol.

UK GHG emissions data is reported to the United Nations Framework Convention on Climate Change (UNFCCC) and EU Monitoring Mechanism (EUMM) (Decision 280/2004/EC). The EUMM covers the six greenhouse gases (CO2, N2O, CH4, HFCs, PFCs and SF6) and four indirect greenhouse gases (NOx, CO, NMVOC, SO2).

The Climate Change Act 2008 contains a target to reduce greenhouse gas emissions by at least 80% by 2050. Within this there are 5-year carbon budgets, with the first four enshrined in law covering the period from 2008 to 2027. The UK has committed to halving GHG emissions relative to 1990 during the fourth carbon budget period (2023 to 2027).

The Local Authority statistics and supporting methodology were developed to support the National Indicator NI186, CO2 emissions for Local Authority areas. This was part of the national performance framework for local authorities which ran from 2008-11. Since the abolition of this indicator, the data has continued to be produced, although it is not yet clear whether this will continue under the new government.

Greater Manchester has developed its own Climate Change Strategy with a target to reduce CO2 emissions by 48% by 2020, and is due to publish its Climate Change Implementation Plan 2015 – 20 this September.

7.5 Target 11.6 Summary

Data is available to report on most of the indicators, although not necessarily in the terms required.

Indicator	Data Available	Data Quality
Percentage of urban solid waste regularly collected and well managed	Percentage of **household** waste collected and well managed	Good – regular reporting
Proportion of recycled from municipal waste	Proportion of recycled from **household** waste	Good – regular reporting
Percentage of urban solid waste regularly collected and recycled (disaggregated by E- waste and non-E-waste)	Percentage of **household** solid waste regularly collected and recycled (disaggregated by E- waste and non-E-waste)	Regular reporting but e-waste under-reported
Fine particulate matter (PM 2,5 concentration)	Fine particulate matter (PM 2,5 concentration)	Fair – modelled data
Percentage of wastewater treated within an urban agglomeration	No data but waste water treatment regulations in place and monitored	Not considered relevant
GHG emissions tons/capita	**CO2** emissions tonnes/capita	Fair – modelled data

The environmental indicator is an important one for Greater Manchester, in demonstrating compliance with national environmental targets. These targets and the monitoring methodologies used are set nationally, and frequently driven by compliance with EU regulations. In general, performance is relatively good, and generally improving, against the target for most areas of waste management, wastewater management and CO2 emissions. There are two areas where the UNSDG targets may support improvements in actions within Greater Manchester:

- Monitoring of e-waste: nationally it has been recognised that the current reporting methodology does not accurately reflect the levels of e-waste generated
- Air quality: the health impacts of poor air quality, particularly related to roads, are a concern for Greater Manchester and may be considered a factor impeding future economic development, alongside the related issue of traffic congestion.

It is unlikely that the UK will change its monitoring framework to enable reporting against a slightly different definition of the indicators in this field.

8 Remaining Targets

The pilot project focused on the priority indicators identified in the workshop with stakeholders, however some information was gathered from workshop participants and from other sources for the remaining targets. Time did not allow for a fuller investigation of these, but a few notes and potential data sources are provided below.

8.1 Target 11.4 Strengthen cities' efforts to protect and promote cultural and natural heritage

8.1.1 Percentage of budget provided for maintaining cultural and natural heritage

Problems with definitions of the indicator:

- Who's budget – public or private? Cultural activities are supported by numerous private sector trusts and charities, as well as other organisations such as Big Lottery (the National Trust is one of the UK's largest charities)
- Cultural and natural heritage is a very wide area, covering a lot of different organisations across sectors
- Promoting cultural and natural heritage is an important part of the target but is omitted from the indicators.

According to the Culture Team at Manchester City Council, there are limited data sets available for culture and very few of these are collected consistently nationally. Some are listed below:

- 50p for culture campaign; looks at Local Authority spend per head per month - refers to LA data returns to central government. http://www.50pforculture.org/statistics (Manchester ranks 5th in the country for culture spending);
- Other government funders/investors (annual government settlement for each agency) – Department for Culture, Media & Sport (DCMS), Arts Council England, Heritage Lottery Fund, National Lottery, English Heritage, DCMS directly funded national museums and collections, British Film Institute, Creative England, Visit England/Britain (and regional variations), cultural olympiad (depending on timeframe);
- Private funders - numerous and too many to list! Manchester City Council does a regular funding update which lists various funds, although it is not fully comprehensive, www.manchesterculturalpartnership.org/knowledge/funding
- Individual giving, sponsorships, crowd funding etc. – this important funding support for culture is not available in a comprehensive nor accessible way;
- Earned income - from individual accounts of organisations would be a very big task.

If the level of investment is the main measure for this indicator it would be good to look at balance public/government investment against other types of support within the cultural context of each country i.e. a typical standpoint in the UK regarding low levels of philanthropy compared to the USA is due to cultural differences. It would also be good to look at the balance of investment against audience figures, participation rate, tourism etc. and consequently the demonstrable social and economic impact of these.

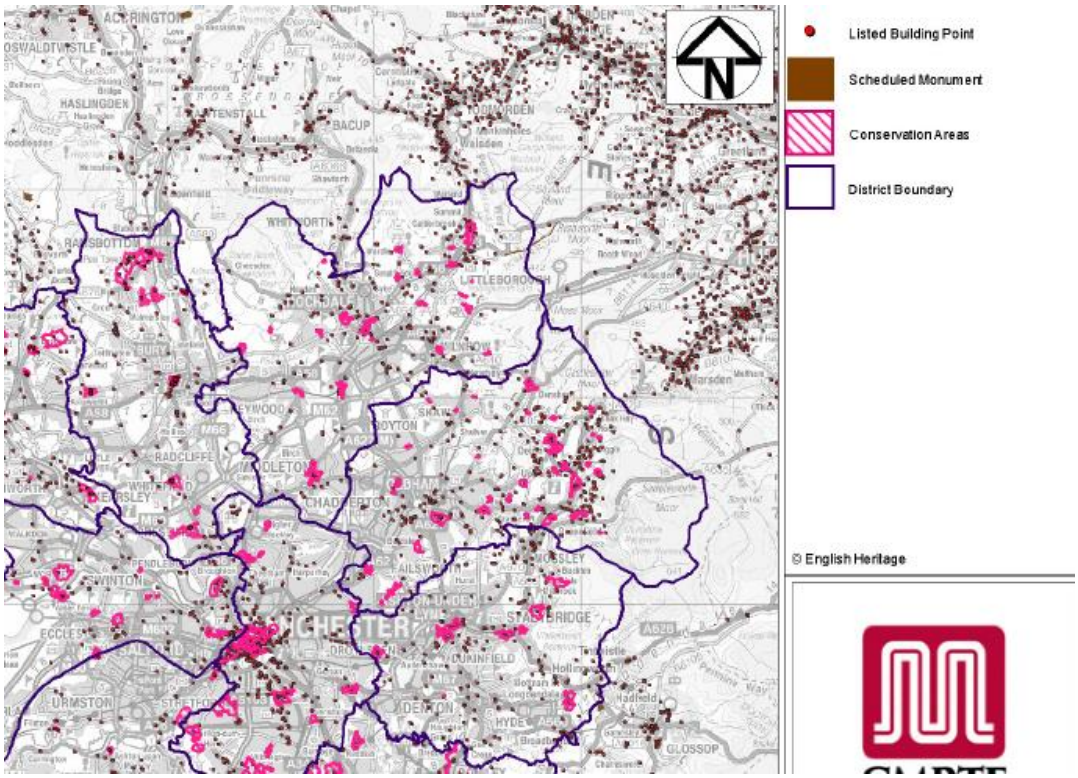
Data may well be available from Historic England[54], the newly established public body that looks after England's historic environment. Previously known as English Heritage, the organisation has recently split into Historic England, and English Heritage Trust which owns and manages key sites. Historic England has an Action Plan which sets out how it will take forward and resource the aims and objectives outlined in our Corporate Plan. http://historicengland.org.uk/images-books/publications/he-action-plan-2015-18/

Biodiversity data, including natural heritage designations from the National Biodiversity Network's Gateway[55] can be used to explore UK biodiversity data, contributed by participating data providers.

https://data.nbn.org.uk/Site_Datasets provides mapping of sites down to 10km squares that can be selected and different designations can be selected. E.g. Special Areas of Conservation, National Trust Ownership, Sites of Special Scientific Interest. Such designations are used to protect sites in the planning process.

Natural England is the government's adviser on the natural environment, providing practical scientific advice on how to look after England's landscapes and wildlife. It is an executive non-departmental public body, sponsored by the Department for Environment, Food & Rural Affairs (DEFRA). https://www.gov.uk/planning-development/protected-sites-species

Other evidence is available of the protection of cultural and natural heritage, for example, mapping of Archaeology Heritage, which is evident in the integrated assessments of TfGM's plans. See map below as an example: The pink areas show the distribution of Conservation Areas across part of Greater Manchester, the brown dots represent Scheduled Monuments and red dots, not visible, show Listed Buildings. All these designations offer protection under Planning regulations.



[54] www.historicengland.org.uk
[55] https://data.nbn.org.uk/Designation_Categories

8.1.2 Number of public libraries per 100.000 people

The Department for Culture, Media and Sport funded reports on libraries in English Library Authorities, by the Chartered Institute of Public Finance and Accountancy, which provides a variety of benchmarking services for local authorities. The reports for each Library Authority (also mainly fits the local authority areas) are available at: http://www.cipfa.org/services/statistics/comparative-profiles/public-libraries/cipfastats-library-profiles-english-authorities-2014

Using these reports it would be possible to access data to respond to this secondary indicator; the reports provide data on:

- Number of libraries per authority
- Number of libraries per 1,000 population
- Number of active users
- Revenue expenditure

This will provide the required data for the indicator.

It is worth noting that since 2010 libraries have experienced severe public funding cuts, and in some cases are provided by charity or voluntary sector organisations. This indicator does not define whether a public library must be owned by a local authority/governmental organisation or whether grant funded voluntary sector libraries may be counted.

The volunteer-led website Public Library News provides updated statistics on static and mobile libraries using the Cipfa data. See: http://www.publiclibrariesnews.com/useful/statistics

8.1.3 Target 11.7 By 2030, provide, maintain and encourage access to safe, inclusive and multipurpose public space

Indicator: *Area of public space as a proportion of total city space*

Secondary Indicators:
Proportion of total public space in a city that is assigned to support livelihoods of the poor
Urban green space per capita
Proportion of urban areas located fewer than 300 meters away from an open public space
Number of reported crimes (homicide, injures, and theft rate) committed annually in urban areas, per 100.000 population

From our current knowledge standards exist for public space but it is not monitored as a snapshot. Standards are used for planning purposes and generally relate only to new developments in the context of their location.

There is likely to be a problem with the definition of Public Space and the UK definition of Open Space and Green Space.

According to the Bangalore report – *"The generally accepted minimum standard for public space in higher density places (150 inhabitants or more per/hectare) is 45% (30% for streets and sidewalks and 15% for green space). Total city space refers to the administrative/jurisdictional spatial extent of a municipality."*

According to Stockport Borough Council's planning team, in terms of access to Open Space, the Borough follows the nationally recognised Fields in Trust ''6 Acre'' standard. The standard sets out that for each 1000 residents there should be 2.4 ha (6 acres) comprising of 1.7 ha for outdoor sport and recreation space (including parks) and 0.7 ha for children's play space with about 0.25ha of this equipped playgrounds. (One hectare (ha) is 10,000m^2 or 0.01Km^2).

English Nature has developed standards in relation to access to natural green space, which are often referred to as ANGSt. http://publications.naturalengland.org.uk/publication/40004

English Nature also holds data on *users* of the natural environment – who goes, how far have they travelled, what are the barriers etc on their MENE database.

The Adapting Manchester project at the University of Manchester, may have access to data on open and green space: http://www.adaptingmanchester.co.uk/home

All local authorities are likely to have an Open Space Assessment for evidence in the planning process. Stockport commissioned such a study in 2005 covering:

- Parks
- Natural & semi-natural greenspace
- Green Corridors
- Outdoor Sports Facilities
- Amenity Greenspace
- Provision for Children & Young People
- Allotments
- Cemeteries & Closed Churchyards
- Civic & Market Squares
- Indoor Sports Facilities & Community Centres

Parks teams within local authorities used to map the proportion of the population nearby parks, however, is seems that many have stopped doing this due to lack of resources.

Some cities have mapped Green Infrastructure (in some cases, Green and Blue infrastructure) as part of their climate change adaptation response. However, Green Infrastructure covers a wider area than Public Space, including privately owned assets such as gardens or riverbanks. Towards a Green Infrastructure Framework for Greater Manchester, September 2008 provides an overview of the city's assets and informed the city's Green Infrastructure Framework 2011[56].

[56] http://www.agma.gov.uk/cms_media/files/110506_final_gi_framework_may_20112.pdf?static=1

(Pale green – formal open spaces; dark green – informal greenspace, woodland and ecological sites.) The map clearly shows where green space is lacking in the denser urban areas.

The existing GIS mapping is likely to be able to provide some of the required layers of information for this indicator however, there has not been time within this study to locate the correct contact person for this.

9 Synergies, Overlaps, Conflicts between USDGs and other reporting requirements

At the Greater Manchester level, there are identifiable synergies with current reporting requirements, such as the **Single Data List** which local authorities are required to submit to government (see Appendix). Where these overlap or support indicator data collection for the urban USDG goal, these have been identified in the Drivers for Data sections of each goal (above).

Overall, there is a lack of will to gather greater amounts of data by resource-constrained local authorities and current government policy is to further reduce the burden of data collection. Having said this, local authorities do need improved data, for example, on housing stock condition and tenure type, in order to plan, fund and deliver solutions to problems. The blunt data required by the indicators above will likely not be sufficiently nuanced for design of housing programmes (see attitudes below).

There are several synergies in existing strategies and national schemes that will provide a supportive framework for the delivery of the urban target and should support collection of the necessary data.

The Greater Manchester Strategy underpins other strategies for the area. With devolution in Housing and Transport, it is possible that better quality and more relevant data can be collected and reported.

The Greater Manchester Strategy, Stronger Together, is the sustainable community strategy for the Greater Manchester city region.
Our vision for Greater Manchester is that by 2020, the city region will have pioneered a new model for sustainable economic growth based around a more connected, talented and greener city region, where all our residents are able to contribute to and benefit from sustained prosperity and a good quality of life.

To achieve these ambitions, the Strategy sets out a programme of vigorous collective action based on reforming public services and driving sustainable economic growth to deliver prosperity for all.

The GM Strategy will guide the work of the GMCA and the GM Local Enterprise Partnership going forward and sets the broad objectives for other Greater Manchester bodies, such as Transport for Greater Manchester, the Low Carbon Hub and other key partnerships. It will also help inform wider public policy across the city region.

A draft version drawing on the 2009 Strategy benefitted from a public consultation exercise held in summer 2013 and a final version was formally approved by the GMCA and the GM Local Enterprise Partnership in November 2013.

Several elements of the GM Strategy[57] have synergies with the Urban goal and targets including:

- *We will be a city region where all people are valued and able to fully participate in and benefit from the city region's success, where every resident, neighbourhood and every borough can contribute to and benefit from our shared sustainable future.*
- *We will be known for a good quality of life, low carbon economy and a commitment to sustainable development alongside an outstanding natural environment.*

[57] http://www.agma.gov.uk/cms_media/files/gm_strategy_stronger_together_summary3.pdf

- *We will continue to grow into a fairer, healthier, safer and more inclusive place to live, known for excellent, efficient, value for money services and transport choices.*

Synergy with the **housing** indicator is found within the Growth section of the strategy aiming to support the economy and provide quality neighbourhoods with new housing, but also to *"[support] Local Authorities to address issues such as vacant units and to manage landlords*" which is critical to improving security of tenure and durable homes indicators.

GM is committed to improving connectivity and continuing to invest in **transport** – *"We will continue to deliver the significant funded and planned investment in Greater Manchester's strategic transport network to link people and neighbourhoods with jobs, and businesses to their supply chains and local, national and international markets"*.

Environmental Impacts and **resilience** to climate impacts will be through developing Greater Manchester "*as a 'low carbon hub' to achieve the target of reducing our carbon emissions by 48% by 2020 (from 1990 levels). We will work to improve the energy performance of new and existing buildings, businesses and households and support growth in Greater Manchester's low carbon goods and services sector. We will also ensure that the city region is resilient to the changes in our climate and support low carbon projects and programmes through our joint venture with Green Investment Bank*."

National Sustainable Development Indicators

The UK reports on a range of Sustainable Development Indicators annually. These cover headline indicators for the Economy, Society and Environment and include overlaps with the USDGs and elements of the urban goal.

Headline Indicators include: GDP, unemployment, social capital such as volunteering, Greenhouse Gas Emissions, CO2 emissions, waste, resource use, housing provision (number of additional dwellings), health, child poverty etc.

Supplementary indicators include: Air Quality (number of pollution days), Fuel Poverty (number of fuel poor), Waste Disposal and Recycling, Land Use, Priority Species and Habitats.

The reporting provides indicators and sources, along with a traffic lights system to show improvement or not.

Indicators			Measures	Geograph	Source	Indicator assessment			Updated data since July 2013
						Long-term	Short-term	Latest year	
1. Economic Prosperity	Economy	Headline	GDP	UK	ONS	•••	•••	N/A	Y
			GDP per head			•••	•••	N/A	Y
			Median income			✓ (1994)	✗ (2007)	Decreased	N
2. Long Term Unemployment	Economy	Headline	Proportion of adults unemployed over 12 months	UK	ONS	•••	✗ (2008)	Decreased	Y
3. Poverty	Economy	Headline	Proportion of children in relative low income households (before housing costs)	England	DWP	✓ (1994/95)	✓ (2006/07)	No change	N
			Proportion of children in absolute low income households (before housing costs)			✓ (1994/95	≈ (2006/07)	Increased	N
4. Knowledge and Skills	Economy	Headline	Human capital (£) stock	UK	ONS	•••	✗ (2007)	Decreased	Y
			Human capital per head			•••	✗ (2007)	Decreased	Y

http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-366350

9.1 Local Authority & Stakeholder Attitudes to the Urban USDG

Local authority and other stakeholder contacts were generally supportive of the pilot project to test the Urban SDG in Greater Manchester. Given the short timeframe and activity around the general election taking place during the project, (and the end of financial year) the number of people willing to engage and provide time, support and inputs to the project was very positive.

The positive support for the project is due to several factors:

- Putting Greater Manchester on the map, being one of five test cities for an international goal
- Awareness of UN initiatives in general
- A commitment to sustainability and fairness
- An enthusiasm for data (in some cases)
- Already being a contact of the project team, and being willing to contribute because of that
- Seeing the opportunity to frame the goals and to learn about other cities during the process, and be an exemplar for other cities
- An opportunity to align the goal, targets and indicators with other UN initiatives
- A space for reflection.

Some key observations from stakeholders included:

Disasters:

The Head of Civil Contingencies and Resilience Unit at AGMA, Kathy Oldham, was keen to think in new ways about emergencies and resilience, and was keen to be challenged on the way that Greater Manchester considers the issues. Kathy was pleased to see resilience within the urban goal.

Transport:

Ian Davies, Intelligence Officer at TfGM was very supportive in providing data and analysis for this project. He felt that benchmarking that is actually comparable with Greater Manchester would be useful, for example, from other metropolitan boroughs or other areas served by Stagecoach (the bus company). Although TfGM left EMTA because it did not seem useful to compare data with such a diverse range of places with different monitoring and policy regimes, it is always useful to see what other cities are doing for inspiration.

TfGM will be interested in what comes back from Gothenburg on this project. With devolution, TfGM will have the ability to collect and analyse more data than before, for example they will have access to bus company data that is currently deemed commercially confidential, and to automated vehicle tracking for real-time punctuality information, which is a further opportunity.

DfT's statistician also advocated looking at international data but highlighted the problem is that different countries collect data in different ways so it's not always strictly comparable.

Tom Ellerton of PTEG believes that the indicators are useful in helping to develop a picture of public transport and sustainable transport usage. He suggests that it is important to complement these with wider background trends in trip rate, mode of travel, travel distance etc. to make sure that they present the full picture. PTEG has found through developing a database of indicators that they become more interesting as you collect greater amounts of data. As well as the high capacity

information, Tom thinks it is important to measure bus use and bus network statistics, as this is the most used method of public transport.

Tom points out that the problem with using indicators can be around how they are measured and the scale. This was a real challenge that PTEG faced when developing its dataset as there was the opinion that if the data is not directly comparable then it is pointless collecting it. Whilst this might not be true, it is definitely a benefit if it is possible to collect all of the indicators for the same scale and directly compare the data.

Housing:

At an AGMA and New Economy level, officers felt that the indicators might present an opportunity to look at the data afresh, perhaps identifying a way to collate data more consistently across the city to assist the Greater Manchester picture. Steve Fyfe in the housing team, who uses data at a much finer level than the Greater Manchester scale, did not think that the data would be useful at the local level, but did hope that it might influence decision-makers in policy making and resource allocation, if the key housing issues could be communicated clearly.

Other observations:

As mentioned elsewhere in the report, participants at the workshop found that the indicators did not always relate to the targets, and for some this could be rather a 'tick box' exercise.

It very much depends on the role of the person as to their attitude to the urban goal and process of collecting data for the indicators. Officers who are delivering on-the-ground projects would often focus on delivering these, rather than gathering information to be reported, which is somewhat intangible. Data analysts are more than happy to engage with the subject matter. Strategists wanted to challenge the targets and indicators, more than engage with them.

Everyone was very helpful, despite their busy schedules, and the researchers thank everyone who participated and supported the pilot project.

10 Problems Faced

This project has been a very quick study covering a wide range of materials and sources. Overall, it has not faced significant problems. The main issues have been:

Time available to carry out the study: the project had to be completed in 3 months, including time to gain the support of the local authorities. In practice the lack of time has meant that not all of the indicators could be covered in depth, and the data gathered has been the most easily accessible, even where this is not necessarily the closest to the indicator. However, this learning is important for future use of the indicators, where limited resources means that the same situation will apply.

Targets not being reflected in the indicators: this was a key issue debated in the workshop. For the purposes of the study, the indicators have been accepted as they are, despite a clear mismatch in some cases, particularly:

- 11.2 Transport indicators do not address safe public transport or road safety (it is likely that data is available for both of those from GM Police statistics).
- 11.4 Cultural & natural heritage – budget spent does not cover the effectiveness of promotion, and frankly libraries are becoming irrelevant as an indicator of culture in the internet age
- 11.5 Risk indicators – the primary indicator looks forward and the secondary indicators look back at incidents that have happened, but neither address the urban planning aspect mentioned in the target
- 11.6 Environment indicators do not address bio-diversity.

Definitions: for some indicators there are real problems with the terms used, particularly:

- **Built-up area**: the area considered for the study has been that within the local authority boundary for the simple reason that any data collected is referenced to this area. This includes some rural areas on the urban fringes, towns that are part of the metropolitan area but physically separated by distinct green space from the main urban area (e.g. Wigan, Rochdale) and excludes some areas that are connected to the city's urban area but fall within other local authorities (e.g. Wilmslow, Poynton). Only the Environment Agency may have been able to provide data for the "built-up area". It is extremely unlikely that any resources would be put against data collection for an area that is not the standard metropolitan area.
- **Slum**: it is politically unacceptable to class any housing in the UK as slums, even though some housing may meet some of the components of the definition.
- **Waste definitions**: e.g. urban vs household waste and the underlying assumption that only collected waste is well-managed.
- **Public space**: although the indicator was not investigated in detail, the definition of roads as public space was raised as an issue in the workshop.

Relevance and value: for a developed nation with a history of standards and monitoring systems in place, frequently driven by EU legislation, it will be difficult to "sell" the value of another set of indicators to monitor. The only value perceived for this pilot project was the marginal political benefit of being a participant in a select group of cities involved in a UN programme. If the targets were to be applied to all (around 50) cities in the UK of over 100,000 population, it would lose this exclusivity. It is unlikely that resources would be allocated to monitoring any data beyond what is already collected.

Replicability: although not an issue for this pilot, it is clear that some of the indicators would be extremely difficult for other UK cities of over 100,000 population. Manchester is one of a group of Core Cities that has a defined metropolitan authority area with responsibility for most of the areas covered by the targets, either as a metropolitan area or as individual authorities within that area. Many smaller cities that still meet the size criteria sit within significantly larger county boundaries and would not be able to separately identify the urban area for transport, waste and risk planning (e.g. Preston, Exeter, Oxford, Cambridge).

11 Lessons learned

The USDG project has been undertaken within a compressed time frame to meet the timelines of the global SDG process. The emphasis has largely been on data collection across the chosen pilot indicators. Nonetheless, there are a series of insights which have emerged from the research which connect with the broader research agenda of the GMLIP. In this brief section, we simply note those issues we believe are worthy of further comparative interrogation and analysis and which can be elaborated to inform co-authored academic papers from this project.

11.1 Governance and knowledge matters

Data which relates to the USDG indicators is collected at a number of scales – national, city-regional and local. Those indicators for which there is a formal city-regional capacity (such as transport) are easier to report on than those without (such as housing). During the 2000s, during the era of the Regional Development Agencies, intelligence units such as the Regional Intelligence Unit and Sustainability North West were in operation. Within Greater Manchester data is held and collected by different bodies, including New Economy and Transport for Greater Manchester, but also within local authorities. There is no single data / intelligence repository for Greater Manchester from which the indicators could be collectively reported.[58] This raises the question over whether data collection is still lagging behind the new economic geographies of England. The changing context of devolution in Greater Manchester is interesting here – with new powers promised in housing, health and planning, devolved from central government. This may require changes in how the city-region gathers, manages and uses its data and intelligence. However, a caveat is that whilst devolution may lead to different forms of data collection and deployment – and hence potentially impact on the ease with which the city-region *could report* on the USDG indicators – it remains unclear whether the process would have any impact on the *perceived need to report* on those indicators (see below, 11.3).

The USDG work connects with ongoing GMLIP work concerning the knowledge infrastructures that are required at city-regional level for a sustainable urban transition.[59] One interesting outcome of the USDG project is that connections were made that might otherwise not have been – for instance, between resilience and climate change officers. Existing GMLIP work focuses on informal knowledge flows (tacit, embedded, embodied, lay expertise). The USDG sits within the GMLIP portfolio of projects as a 'case study' of how 'data' is managed, valued and deployed. Linking data and intelligence – making numbers matter – is critical for a context-sensitive approach to the USDG. [60] For instance, the existing of strategies, plans or processes (such as participatory planning) does not tell us anything about how well these are implemented or how stakeholders experience and value their participation.

11.2 The fragmentation between public and private providers complicates data collection

The Greater Manchester case reveals the importance of contextualising the USDG process within broader debates on the reshaping of the state and the role of the private sector in delivering urban services and systems. The ease with which data can be collected to report on the USDG indicators is

[58] See Mistra Urban Futures project 'Governance and Policy for Sustainability' reports, Greater Manchester
[59] Perry, B., May, T., Marvin, S. and Hodson, M. (2013) Chapter on Rethinking Sustainable Urbanism. In H.T. Anderson, '*Production and Use of Urban Knowledge*'. Springer Publishing.
[60] SURF (2010) *Integrated Visions for Knowledge Cities*, non-technical summary.

informed by changing roles and responsibilities across the public and private sphere. Infrastructures are 'splintered' and 'squeezed' at the urban level[61] – with differential degrees of liberalisation, privatisation and deregulation across critical areas. In transport the impact of deregulation and privatisation of buses and trains started in the 1980s in Greater Manchester as elsewhere in the UK. However, as transport had been an area for voluntary collaboration at city-regional level for some time, a coordinated approach to data collection and management has been easier to maintain. In waste, however, 'municipal waste' only includes what the local authorities collect whilst private sector waste, including construction is missing. Some companies, such as energy companies, are required to report directly to central Government on certain infrastructural risks. As already noted, there are already difficulties in collecting data on the private rental sector in housing – the increase in social landlords and new schemes being proposed, such as a new version of the 'right to buy', may further fragment the market and lead to a loss of detailed data on critical quality and access issues. A central question raised is whether the ease with which coordinated data can be gathered to constitute the evidence base for intelligent urban public policy is diminished, as areas of service delivery are fragmenting across public and private sectors.

There is a further risk that the data itself may be privatised. In recent years, the responsibility for national data collection has in many cases been contracted out to the private sector. While this data collection and analysis has been publicly funded, if the requirement to collect it ceases, and it is no longer reported nationally, the private sector organisation can retain the data and use if for its own commercial purposes, but is no longer required to share that data openly. Where data has been collected by public sector or quasi-public sector organisations that themselves cease to exist or retain public funding, historical data is often either lost as there is no repository for it, or becomes the property of the replacement private organisations. This has been particularly noticeable in the re-structuring away from regional organisations, where data held by NW intelligence sources has disappeared from public view.

11.3 Data collection is not neutral – what is collected is what is seen.

The SDG/USDG process was not reported to be of high relevance or priority to those stakeholders we have engaged in Greater Manchester. In most cases, it was felt unlikely that any change in data collection, monitoring or evaluation would occur as a result of the USDG, with little expectation that the USDG will have any meaningful impact in the city-region. Overall participants in the project felt that Greater Manchester was already ahead of the game in methods for data collection and in meeting minimum targets. Locally, targets may exceed those set nationally or internationally – for instance, the commitment to a 48% carbon reduction by 2020. The broader GMLIP programme has highlighted the fractured nature of the evidence base against which the city-region can measure its progress across multiple areas of public policy. However, it is less clear that the USDG would provide this tool – given that many participants felt that the city-region was already outperforming in many areas. This also suggests a danger in a process such as the USDG in leading to complacency and 'business as usual' for those cities that are already performing well against the indicators. A framework like the SDG framework may help to mobilise resources around particular issues; but, as has been highlighted in the literature, may also reinforce existing power structures.[62] This suggests the need for a reflexive and pragmatic use of goals and indicators at the local level to enable cities to raise their game.

[61] See Graham, S. and Marvin, S. (2001) Book on *Splintering Urbanism*. London: Routledge.
[62] Campbell, D (1976) Assessing the Impact of Planned Social Change. Occasional Paper Series #8, The Public Affairs Centre, Dartmouth College, New Hampshire.

A strong caveat relates to the politics of data collection. [63] At present, a series of issues inform what data are collected and analysed and how they are deployed to inform policy. Often data is collected because someone, somewhere else in the public policy system, has asked for it – because it is a requirement placed upon local authorities to report. This is not a neutral act, given the ways in which data can be used to justify different political and ideological positions.[64] If data isn't collected on particular issues, because it is not required, then the issue to which it pertains may become 'invisible'. If there is no data on insecure housing or homelessness, does the issue become invisible? If the numbers of households living in fuel poverty isn't known, does that mean they don't exist? If we don't know about the distributional effects of climate change, does that mean there are none?[65]

Whilst local authorities have some discretion, especially when working collaboratively at the city-regional level, to gather data that can meaningfully be translated into intelligence in a particular context, the capacity for them to do this is diminishing. In the context of public sector restructuring and austerity in the UK, local authority capacities are under tremendous pressure. A significant number of job losses are anticipated in the coming years as a result of Government cuts, with local authorities in Greater Manchester shouldering a disproportionate burden.[66] The danger is that remaining staff will be required to report on statutory obligations rather than more relevant indicators that may bring about greater economic, ecological and social justice – *what needs to be known*. This all matters, because *what is collected is what is seen*.[67] Data often replaces intelligence as the basis on which decisions are made. Here, particularly in the area of housing and climate change for instance, there may be value in international indicators, if they enable data to be gathered on critical issues of urban sustainability and justice that would otherwise not remain 'invisible'.

[63] As noted, in the introduction, this project has coincided with the General Election in the UK.

[64] "The more any quantitative social indicator is used for social decision-making, [1] the more subject it will be to corruption pressures and [2] the more apt it will be to distort and corrupt the social processes it is intended to monitor" (See Campbell, 1976)

[65] See, for example, Daniel Kahneman (2012), *Thinking Fast and Slow,* on behavioural psychology

[66] On average local authorities have reported as having to accommodate a 1.5% cut in budget – for some GM authorities, this is nearer 5%.

[67] See also Kahneman (2012).

12 Feedback provided to Local Authorities & Stakeholders

There has been an ongoing exchange with key contacts in local authorities and other organisations in order to produce this report. Some sections have been sent for comment/correction for factual accuracy to local authority contacts, for the sections on:

Target 11.1 Housing

Target 11.2 Transport

Target 11.5 Disasters

Target 11.6 sub section on air quality.

Any corrections received will be included in the final report.

A full copy of the draft will also be sent to AGMA contacts to fact and sense check both the content and interpretation. Any amendments will be made in a corrected version of the report.

Due to the tight timeline for the project, the team was not able to hold a workshop to discuss the findings of the pilots, as originally proposed. However, in July GMLIP/SURF are holding a workshop with stakeholders and the findings of this report will be shared then. Opportunities for further action or research as a result will be identified at this point.

A report for the Greater Manchester audience will be developed, to consider some of the data analysed, look at the process of the pilot testing, share relevant findings and lessons from the Gothenburg workshop and examine the politics of data.

An article will be drafted for the GMLIP website On The Platform[68].

[68] http://ontheplatform.org.uk/

13 Conclusions

This has been a short and intense pilot project, which required rapid engagement on the urban goal, targets and indicators across a range of local authorities and stakeholders in Greater Manchester and national government and data organisations.

Conclusions for each indicator have been summarised above, but a few last observations are:

- The city would not have sought out this project, but key organisations were willing and helpful in enabling the pilot to take place at a busy time
- The project has symbolic value being one of five cities testing the goal's targets and indicators
- The urban SDG is not likely to change practice in Greater Manchester as stakeholder report that the city-region already has sustainability at the heart of many of its policies and practices
- The data collection and monitoring systems are in place and are considered good enough for most indicators (excepting housing affordability and e-waste reporting)
- A very fine grain of data is now used to design policy interventions which are very specific to locations, population types, behaviours and so on. This takes some of Greater Manchester's use of data to a fine level, and moves away from large-scale blunt indicators
- There is an opportunity to improve how housing affordability is measured and how e-waste is measured.

APPENDICES

A. Sources & Thanks

Thanks to:

Andy Bates (Indices of Multiple Deprivation), Office of National Statistics

Andrew Kippax, Strategic Housing Lead, Stockport Metropolitan Borough Council

Ian Davies, Intelligence Officer, Transport for Greater Manchester

Simon Warburton, Head of Policy & Strategy, Transport for Greater Manchester

Lucy Woodbine, Principal Housing, Planning and Environment Research, New Economy/AGMA

Tim Robinson, Performance and Intelligence Officer - Growth & Neighbourhoods, Performance & Intelligence Team, Manchester City Council

Simon Warburton, Transport for Greater Manchester

Kathy Oldham, Head of Civil Contingencies and Resilience Unit, Association of Greater Manchester Authorities (AGMA)

Jon Percival, Greater Manchester Police

Christian Spence, GM Chamber of Commerce

Neil Higgins, Dwelling stock figures, DCLG

Mike Young, Homelessness figures; DCLG

John Cummings, DfT

Ged Steadman, air quality; Salford City Council

John Stedman, air quality; UK-Air / Ricardo-AEA

Andy Williams, waste data; WasteDataFlow / Jacobs

Maxine Stiller & Matt Delaney, water & wastewater data, United Utilities

Haney King, Natural England

Dave Marshall, Team Leader - EPR Installations, Manchester, (Greater Manchester, Merseyside and Cheshire Area), Environment Agency

Paul Bloomfield, Research Support Officer, Living Costs and Food Survey, Social Survey Division, Office for National Statistics

Steven Fyfe, Housing Strategy Manager, Planning & Housing Team, Association of Greater Manchester Authorities (AGMA)

Tom Ellerton, Research Team, PTEG

Robert Flynn, BRE

Christian Spence, Head of Business Intelligence, Greater Manchester Chamber of Commerce

Workshop Attendees:

Chris Horth, Unit Manager - Environment Team, Bury Council

Jonathan Sadler, Environmental Strategy Manager, Policy, Partnerships and Research, Growth & Neighbourhoods Directorate, Manchester City Council

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Maxine Stiller, Demand Strategy Analyst, United Utilities

and

Gill Fenna, Director, Quantum Strategy & Technology

Louise Marix Evans, Director, Quantum Strategy & Technology

Alex Wharton, Research Fellow, SURF, University of Salford

Helen Arfvidsson, Lead Researcher, Chalmers University, Gothenburg, Sweden

Organisations:

Association of British Insurers

Consumer Council for Water

Department for Transport

Department for Energy & Climate Change

Department for Environment, Food & Rural Affairs

Environment Agency

B. Sustainable Development Goals

SUSTAINABLE DEVELOPMENT GOALS

GOAL 1	End poverty in all its forms everywhere
GOAL 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
GOAL 3	Ensure healthy lives and promote well-being for all at all ages
GOAL 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
GOAL 5	Achieve gender equality and empower all women and girls
GOAL 6	Ensure availability and sustainable management of water and sanitation for all
GOAL 7	Ensure access to affordable, reliable, sustainable and modern energy for all
GOAL 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
GOAL 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
GOAL 10	Reduce inequality within and among countries
GOAL 11	Make cities and human settlements inclusive, safe, resilient and sustainable
GOAL 12	Ensure sustainable consumption and production patterns
GOAL 13	Take urgent action to combat climate change and its impacts*
GOAL 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
GOAL 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
GOAL 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
GOAL 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development

* Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

Source: https://sustainabledevelopment.un.org/content/documents/1579SDGs%20Proposal.pdf

C. Housing Definitions

Housing Act 1985 Definition of overcrowding[69].

A dwelling is overcrowded for the purposes of this Part when the number of persons sleeping in the dwelling is such as to contravene—

(a) the standard specified in section 325 (the room standard), or

(b) the standard specified in section 326 (the space standard).

325 The room standard.

(1) The room standard is contravened when the number of persons sleeping in a dwelling and the number of rooms available as sleeping accommodation is such that two persons of opposite sexes who are not living together as husband and wife must sleep in the same room.

(2) For this purpose—

(a) children under the age of ten shall be left out of account, and

(b) a room is available as sleeping accommodation if it is of a type normally used in the locality either as a bedroom or as a living room.

326 The space standard.

(1) The space standard is contravened when the number of persons sleeping in a dwelling is in excess of the permitted number, having regard to the number and floor area of the rooms of the dwelling available as sleeping accommodation.

(2) For this purpose—

(a) no account shall be taken of a child under the age of one and a child aged one or over but under ten shall be reckoned as one-half of a unit, and

(b) a room is available as sleeping accommodation if it is of a type normally used in the locality either as a living room or as a bedroom.

(3) The permitted number of persons in relation to a dwelling is whichever is the less of—

(a) the number specified in Table I in relation to the number of rooms in the dwelling available as sleeping accommodation, and

(b) the aggregate for all such rooms in the dwelling of the numbers specified in column 2 of Table II in relation to each room of the floor area specified in column 1

No account shall be taken for the purposes of either Table of a room having a floor area of less than 50 square feet.

Table I

Number of rooms	Number of persons
1	2

[69] http://www.legislation.gov.uk/ukpga/1985/68/part/X/crossheading/definition-of-overcrowding

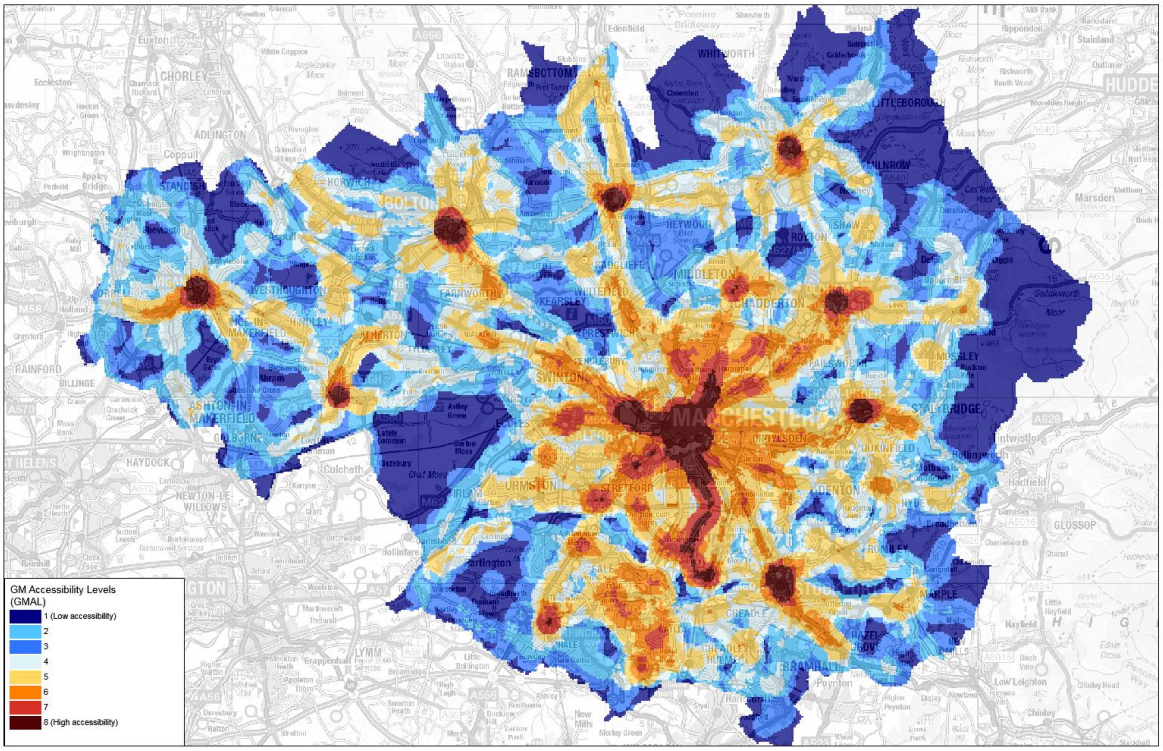
2	3
3	5
4	7½
5 or more	2 for each room

Table II

Floor area of room	Number of persons
110 sq. ft. or more	2
90 sq. ft. or more but less than 110 sq.ft.	1½
70 sq. ft. or more but less than 90 sq. ft.	1
50 sq. ft. or more but less than 70 sq. ft.	½

50 sq. ft is 4.65m²

D. Greater Manchester Accessibility Levels for public transport



Data at 31st January 2015