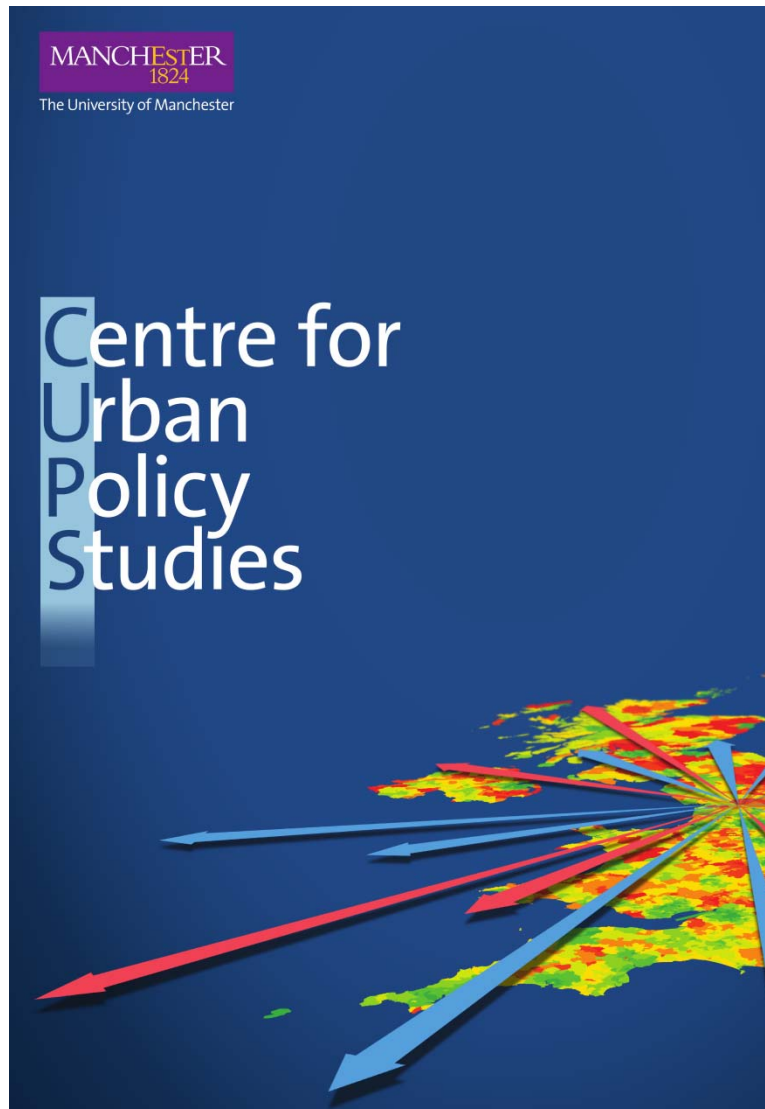




Does space matter? Housing, transport and accessibility in GM

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INTRODUCTION

While transforming the interconnectivities among northern cities as proposed in the *One North Plan* is a vital component for spatial rebalancing and the Northern Powerhouse, the planning for the devolution of Greater Manchester (GM) has to be strategically related to the development trajectories and challenges faced by different localities and communities of the conurbation. The analysis here focuses on examining housing and transport accessibility issues, which are seen as the key drivers of urban growth and spatial competitiveness as well as the key determinants of ordinary residents' quality of living. The study will highlight the intra-variations of housing affordability and transport accessibility among the ten local authorities in GM, and contextualise the position of GM within the wider spatial perspective of the rest of England.

HOUSING AND AFFORDABILITY

Following the recent recovery from the financial downturn, the underlying policy issues of house price inflation and housing affordability once again are resurfacing, though the debate tends to focus on the housing pressure in London and the South East. The boom and bust housing cycle tends to have differential spatial impacts on different places and localities. There is thus a need to examine the spatial patterns of housing consumption and affordability in different parts of GM and comparing the local situation with elsewhere in the country.

Owner occupation, rental and homelessness

According to the 2011 Census, the average level of home ownership in GM was 60% when compared to England's 63%. There are major variations in the level of owner occupation in GM (see Figure 1): only less than 38% of households in Manchester owned their properties, which contrasts sharply with Stockport's 73%. As expected, those local authorities (LA) that score well on the Index of Multiple Deprivation also had higher level of home ownership, after Stockport, the high level of owner occupation is also found in Bury and Trafford. It is noticeable that after Manchester, Salford had the second lowest level of home ownership

at 50%. When examining the distribution at the neighbourhood scale¹ in Figure 2, the patterns of variations are even more wide-ranging from 3% to 96%, with the lowest levels at the central locations of Manchester and Salford and the highest levels in the outer locations of the GM conurbation.

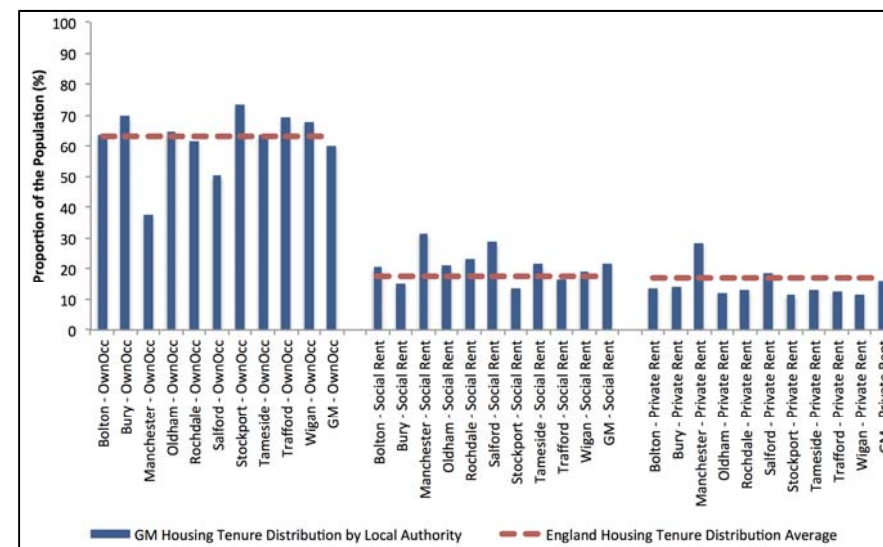


Figure 1: Housing tenure distribution in Greater Manchester local authorities 2011

A larger proportion of households were tenants in GM than in England: with 22% renting in the social sector and 18% in the private sector; when compared to England's 18% and 17% respectively. With the low level of home ownership in Manchester and Salford, it is not a surprise to find the high level of households living in rented accommodation, especially in the social housing sector (32% in Manchester and 29% in Salford). On the other end of the spectrum, Stockport (14%), Bury (15%) and Trafford (16%) had the lowest level social tenant households. Figure 3 shows the spatial distribution of social housing tenancy at the neighbourhood level,

¹ at the MSOA level

which is largely a mirror image of that of owner occupation in Figure 2. The level of renting in the private market is similar across the LAs in GM, except the very high level in Manchester at 28%, which is probably due to its large professional and student population.

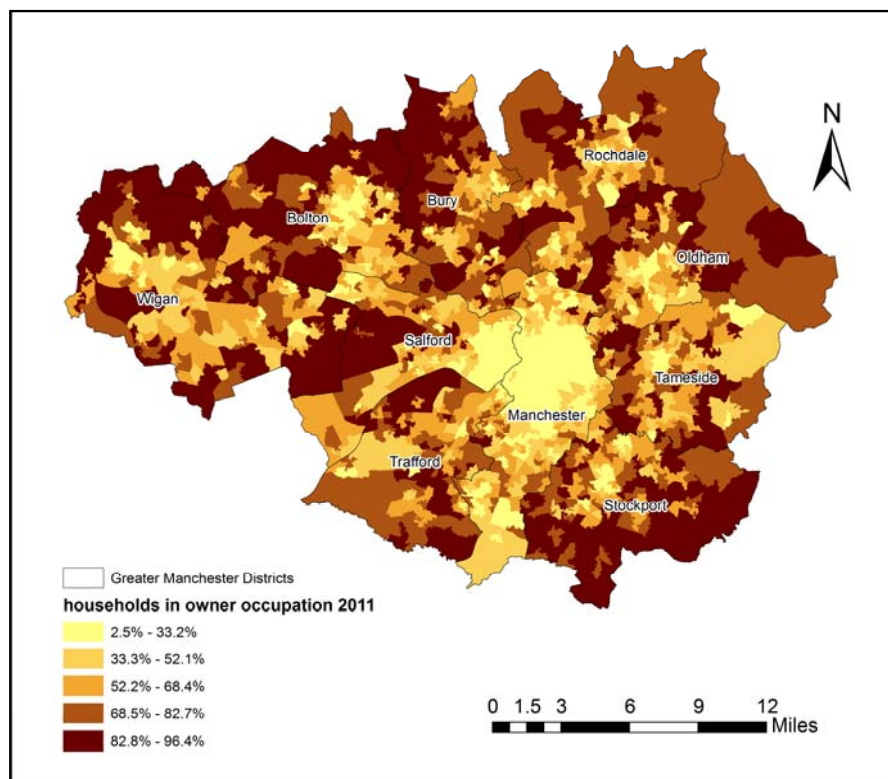


Figure 2: % of households in owner occupation, 2011

It is important to note that 6,166 of household applications for homeless assistance were processed by GM local authorities in the year 2014/15. However, only 2,447 (40%) of these applications were accepted as being homeless in priority need by local authorities. The spatial clustering of these homeless households is not evenly distributed. As shown in Figure 4,

the rate per 1,000 households is highest in Manchester (3.73). Two other local authorities also had a high rate: 3.35 in Bolton and 2.91 in Salford. On the opposite end, the lowest rate was found in Oldham (0.53) and Tameside (0.66).

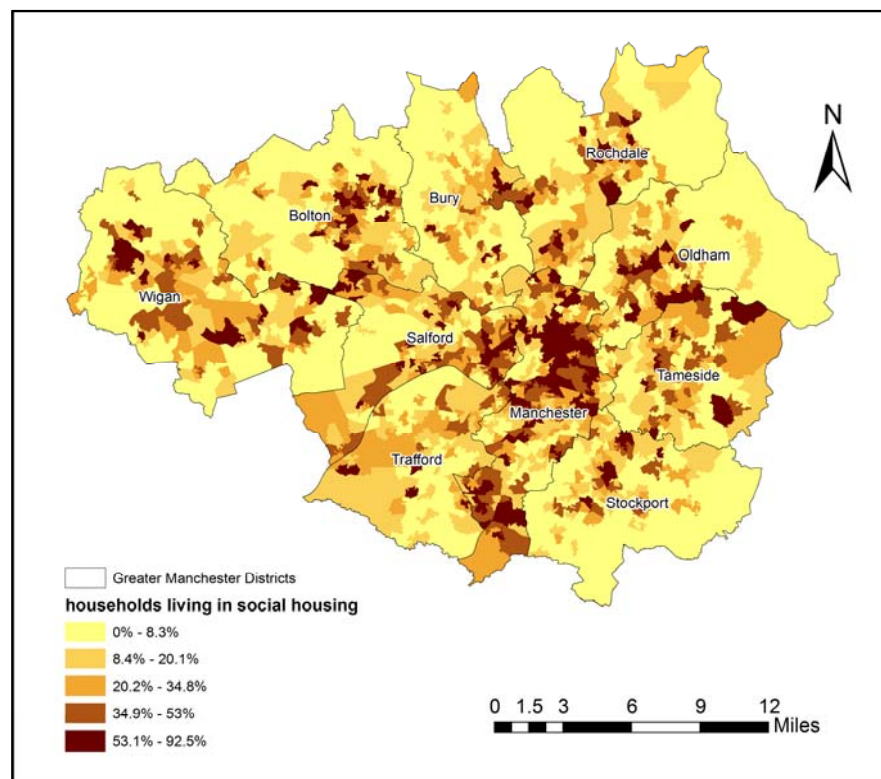


Figure 3: % households in social housing, 2011

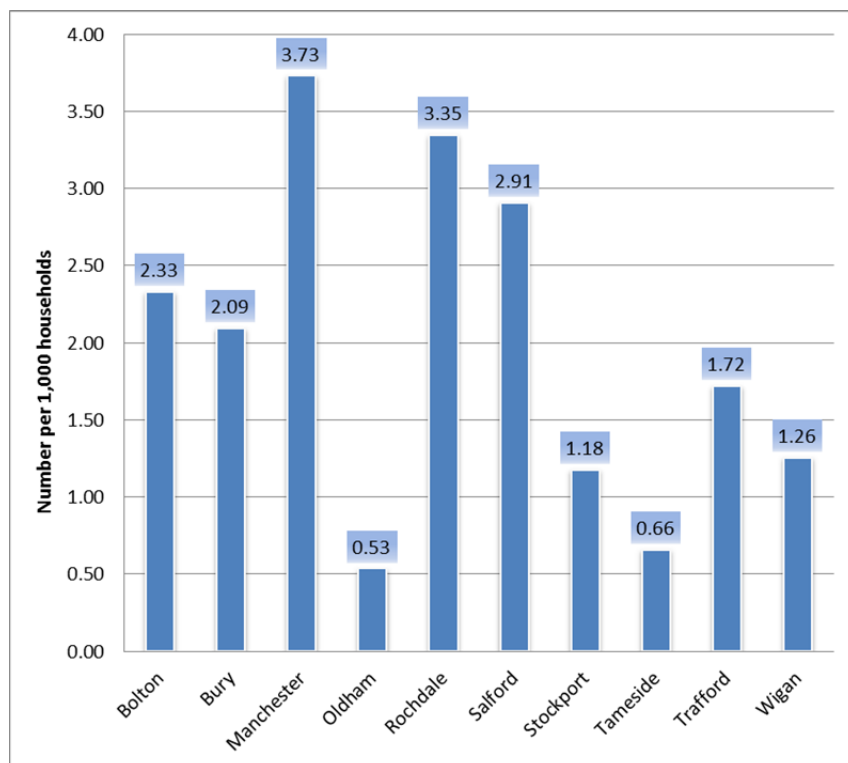


Figure 4: Accepted as being homeless and in priority need, GM LAs, Number per 1,000 households (04/2014-03/2015)

Housing market

There was a major housing boom in the early 2000s until the global financial crisis in summer 2007 (see Figures 5a & 5b). The average (median) house price in England shot up from £92,000 to £178,000, an increase of 93% between 2001 and 2007. The level of house price inflation was much higher in Greater Manchester: nine local authorities had prices increased by over 124%, which was partly due to the cheap house prices in these areas. On the contrary, the levels of house price inflation in LAs with

high house prices such as Trafford (+91%) and Stockport were more in line with the average level in England.

Despite the shock of the economic downturn, the median house price in England actually increased by 4% between 2007 and 2010. However, the impacts were spatially different across the country (see Figures 5b & 5c). The median house price in GM dropped by over 6% and all ten LAs experienced a house price decrease: with the largest price fall recorded in Tameside (-12%), Manchester (-11%) and Salford (-10%). Housing markets in Trafford (-1%), Oldham (-2%) and Stockport (-2%) were found most resilient during this turbulent time (see Figure 6).

By examining the patterns of house price changes nationally by dwelling types during the downturn, it becomes very obvious that the flats/apartments market had been the most volatile sector across England (see Figures 7a-c). This was definitely the case in GM. After the initial boom in the flats market between 2001 and 2007, with prices doubled or even quadrupled, the prices plummeted after 2007. As shown in Figure 8, the price levels of flats dropped significantly across the conurbation between 2007 and 2010: the largest fall in Wigan (-41%) and the lowest in Stockport (-12%). Indeed, the flats market has not recovered well in GM since 2010 (see Figure 8). Despite the strong recovery in Trafford and Manchester in 2014, none of the GM LAs have been able to return to their 2007 levels.

With the gradual economic recovery, the average 2014 house price levels have improved, particularly in London and the South East. There has been a rapid increase in house prices in this buoyant part of England even when compared to the pre-recession peak (see Figures 5d & 7d). The average median house price in England is estimated to have increased by 11% between 2007 and 2014. Nonetheless, the recovery picture in GM is a mixed one, with half of the LAs having gained from the house price inflation and the other half still not yet recovered from the price fall.

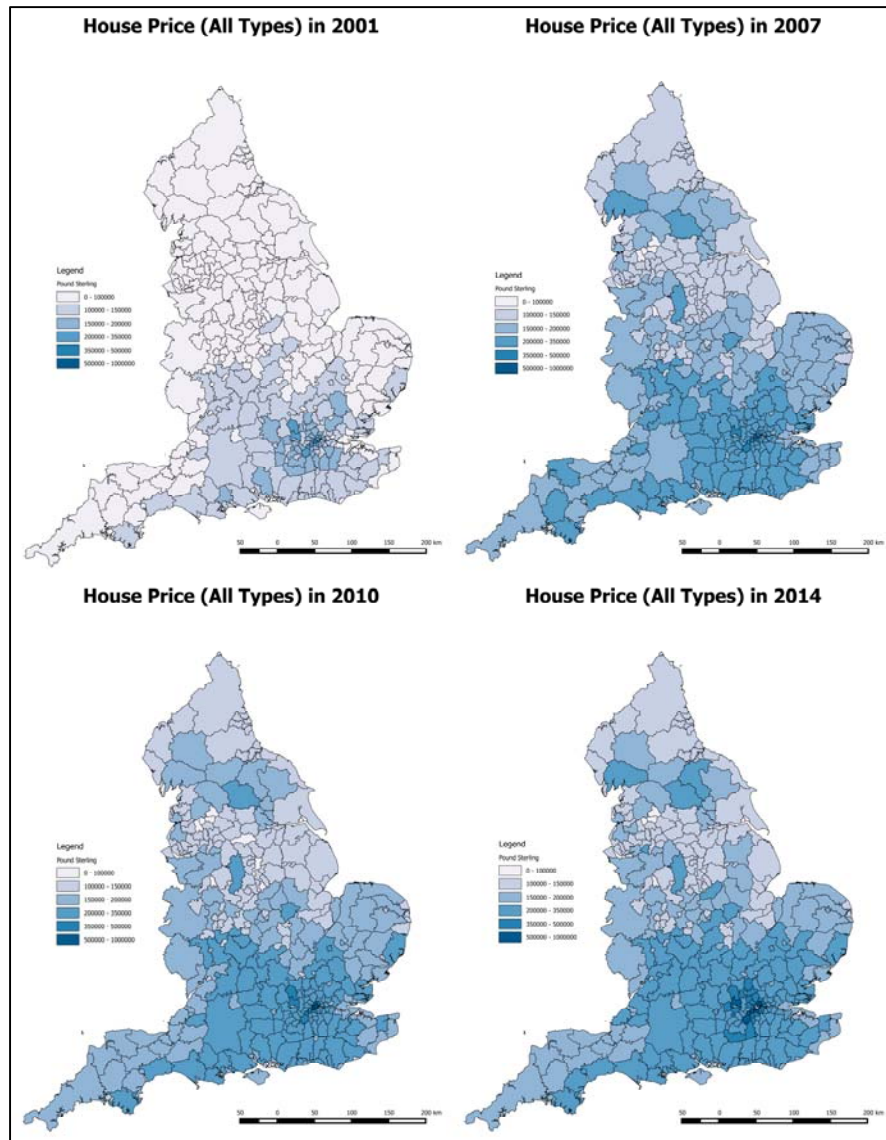


Figure 5: Median house price, all types:(a)2001; (b)2007; (c)2010; (d)2014

Trafford, which was most resilient during the downturn, has bounced back and actually experienced an increase of 9% in its prices. On the other end, Tameside suffered from a 5% drop in its average house price between 2007 and 2014. Figures 9 and 10 provide a more fine-grained display of the house price levels and changes across the GM conurbation. The outer areas of the conurbation, especially the southern part, tend to have higher price levels. The recovery patterns are somewhat patchy, though the high price areas tend to perform better.

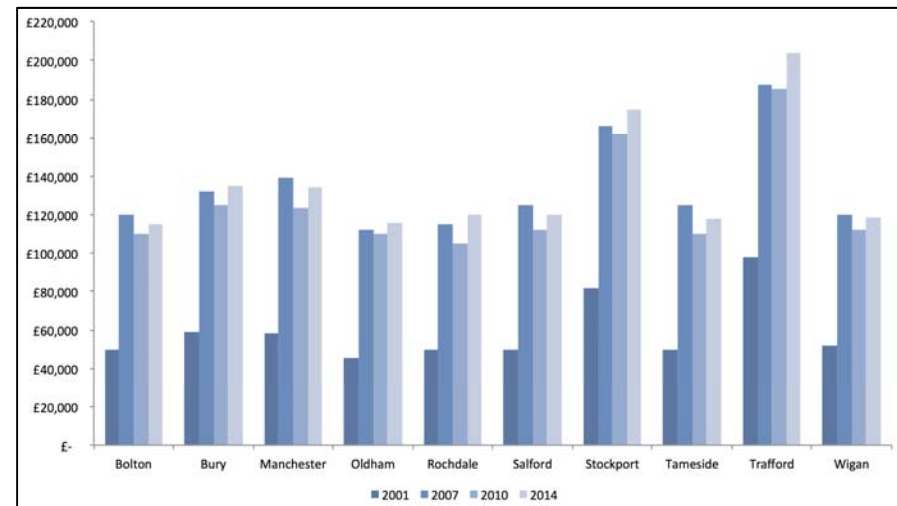
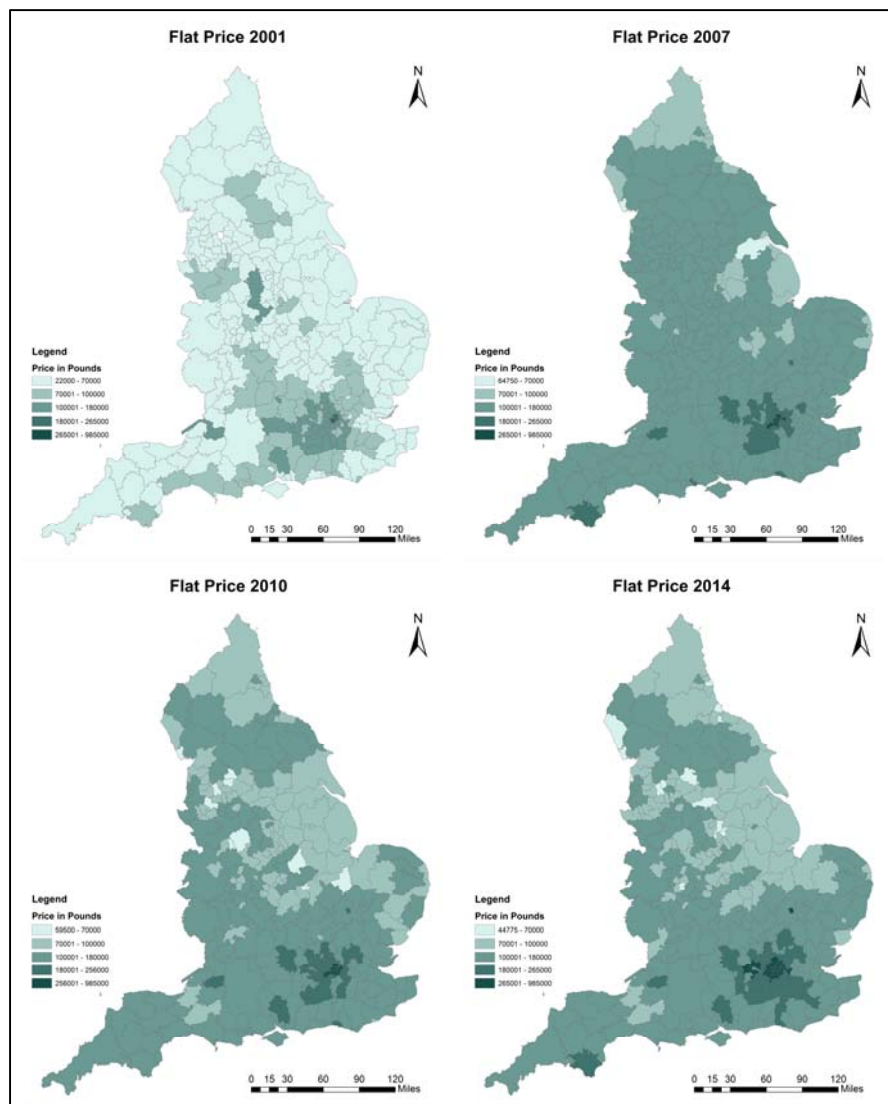


Figure 6: Median house price in Greater Manchester local authorities between 2001 and 2014



Figures 7: Median house price, flats: (a)2001; (b)2007; (c)2010; (d)2014

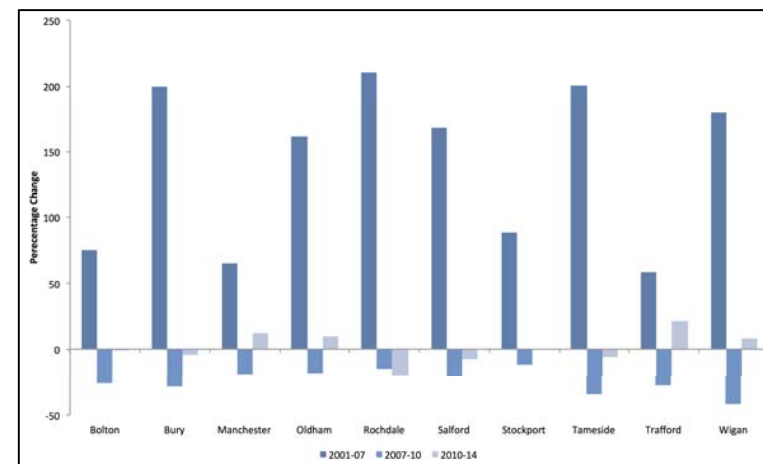


Figure 8: Change in median house prices of flats in Greater Manchester local authorities between 2001 and 2014

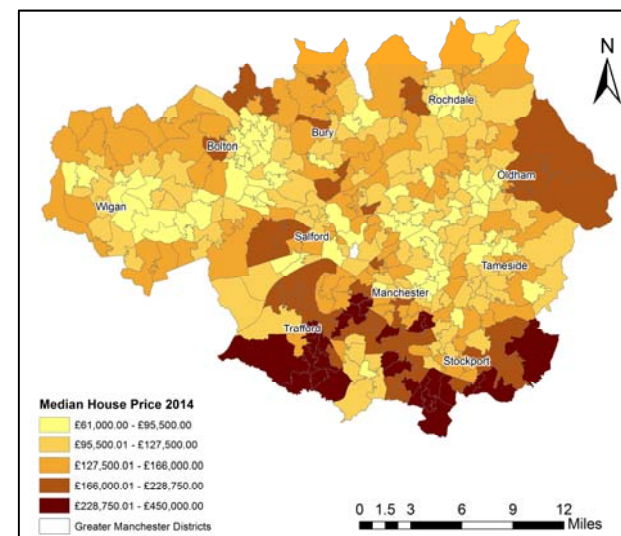


Figure 9: Median house price Greater Manchester, 2014

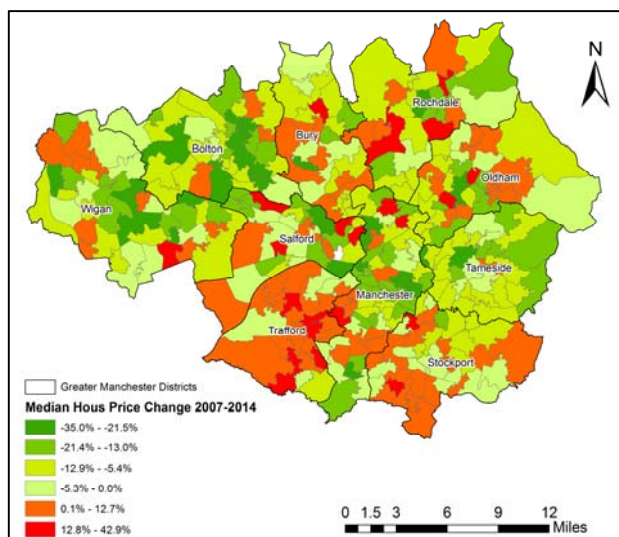


Figure 10: % change in house price, 2007-14

Housing affordability and rental levels

Housing affordability, a ratio of the lower quartile house price to lower quartile workplace earning, in England was 6.96 times in 2013. There are, however, major spatial variations across the country. In the pressured housing markets in London and the South East, the ratio can be as high as over 20 times. As shown in Figure 11, GM in the national context is a relatively affordable location for low income earners. Most LAs had a ratio of around 5 times², with the exception of the more expensive locations of Trafford (6.8 times) and Stockport (6.3 times) and the very affordable location of Wigan (4.7 times). When compared to the previous patterns, the affordability levels were similar to those in 2007.

While house prices have dropped or remained stable during the economic downturn, the picture of the social rental market in England was moving in

² Bolton (5.0); Bury (5.1); Manchester (5.5); Oldham (5.1); Rochdale (5.0); Salford (5.0) and Tameside (5.3).

the opposite direction. The average weekly local authority rent has continued to increase and the change between 2006/07 and 2013/14 was an increase of 42% from £57.93 to £84.44 per week. Similarly, the rental charges of private registered providers also went up from £66.67 to £92.30 per week between 2001 and 2014, a 38% rise in price. These levels of rental increase outpace the level of house price inflation (+11%) and impose a major burden on the low income households.

Figure 12 shows an interesting picture of the situation in GM: the levels of local authority rental charge in Wigan (+43%), Salford (+46%) and Stockport (+48%) went up at a higher level than the average in England between 2006/07 and 2013/14. In terms of the private registered providers' rental charge, all GM authorities, with the exception of Trafford (+44.4%), experienced a lower level of rental increase than the England average (38%) between 2007 and 2014.

There are difficulties in accessing reliable private rental data. Recently, the Office for National Statistics has released some experimental survey statistics. While the interpretation of the sample based survey data has to be cautious, the data provides a snapshot of the picture in GM. As shown in Figure 12, the weekly median rents in the private market are over £100 per week in 2015. The highest rental levels were found in Trafford (£160.66) and Manchester (£149.18), which are higher than the England average of £137.70. The lowest private rental markets are concentrated in the northern part of the conurbation in Bolton, Rochdale and Wigan, all with a weekly rental charge of around £103.

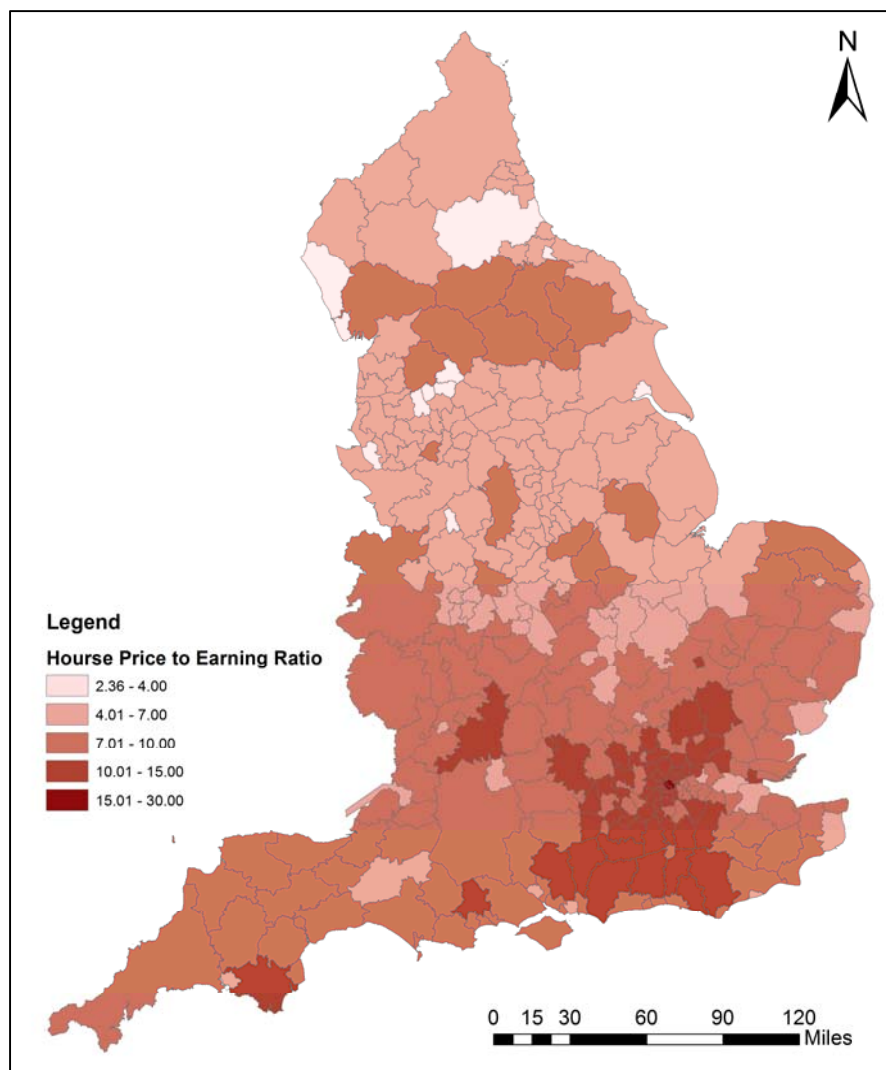


Figure 11: House Price Affordability, 2013

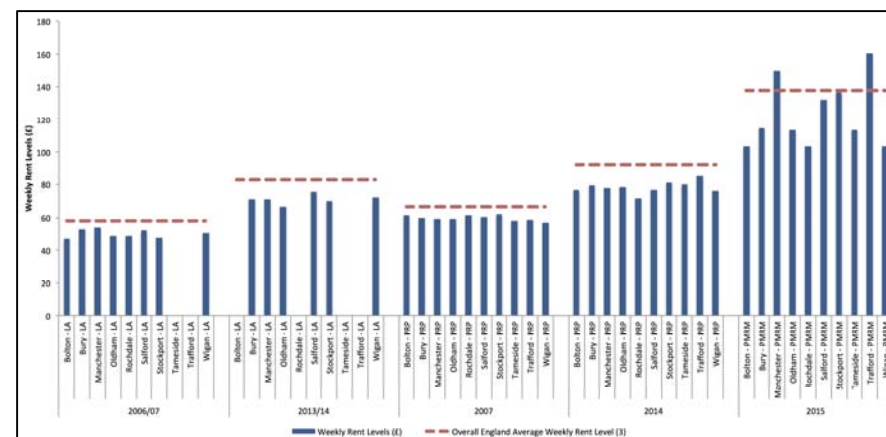


Figure 12: Weekly rental levels- Local Authority (LA), Private Registered Providers (PRP) and Private Market Rent Median (PMRM)

TRANSPORT AND ACCESSIBILITY

A key influence on the transformation of cities has been the changing transport infrastructure not simply in terms of travel behaviour, but also as a framework for land use markets through its impact on developers and investors. Transport and infrastructure development forms a critical component of the GM City Deal and the devolution agenda with the objective of ‘delivering sustainable increases in effective labour markets and business’³. While the media and political attention has focused on the major infrastructure investment of HS2 and the Northern Hub programme, the City Deal also mentions the importance of immediate carbon reduction and local employment support benefits offered by the GM’s Local Sustainable Transport fund.

Commuting: distance, mode and use of public transport

The average travel to work distance in GM was 12.6 km in 2011, which was shorter than the 14.9 km average of England. As shown in Table 1, all GM authorities had shorter commuting distance as well as smaller

³ Section 3.8 (p.23) of Greater Manchester City Deal document

proportion of long distance commuters and larger proportion of short distance commuters when compared to the average patterns of England.

Within the conurbation, Wigan had the longest average commuting distance (13.8 km) and a large proportion of long distance commuters (5.2%). On the other hand, Oldham and Tameside had the shortest commuting distance and the largest proportion of short distance commuters. It is also interesting to note that Manchester had the largest proportion of both long (5.5%) and short distance (67.7%) commuters. Figure 13 shows the detailed patterns of commuting distance of the GM conurbation. As expected, workers living in the outer areas of the conurbation tend to have longer commute, though long distance commuters were found scattered in different parts of the city-region. It is interesting to note that 8% of GM workers worked from home (only minor variations were found across the conurbation), which was below the 10% average level of England.

Table 1: Commuting distance and car ownership, 2011

	Average distance (km)	Over 30km (%)	Under 10km (%)	Work at home (%)	Car ownership (%)
Bolton	13	4.37	57.61	8.18	77.93
Bury	13.3	4.67	57.44	8.73	80.70
Manchester	12.4	5.49	67.67	7.15	69.20
Oldham	11.4	4.85	62.86	7.63	76.24
Rochdale	12.3	4.89	60.46	7.80	76.12
Salford	12.5	4.97	63.79	7.47	73.06
Stockport	12.4	4.75	58.60	9.74	82.00
Tameside	11.4	4.53	62.25	7.51	77.14
Trafford	12.9	4.97	59.57	10.07	82.18
Wigan	13.8	5.24	55.08	7.25	80.23
GM	12.6	4.93	60.90	8.08	76.55
England	14.9	7.96	52.31	10.26	79.49

Table 2 Transport mode of commuting (%), 2011

	Metro	Train	Bus	Car	Bicycle	Public transport (with car access)
Bolton	0.14	2.24	4.15	44.46	0.64	10.42
Bury	3.19	0.41	4.28	46.98	0.89	11.85
Manchester	0.76	1.55	12.46	27.75	2.27	25.58
Oldham	0.08	0.72	6.57	42.55	0.64	11.96
Rochdale	0.12	1.21	5.26	42.90	0.60	10.91
Salford	1.29	1.17	6.94	38.89	1.46	14.73
Stockport	0.11	3.40	5.42	46.59	1.36	13.09
Tameside	0.11	2.20	7.03	43.47	0.88	14.53
Trafford	3.45	1.01	4.68	46.56	2.14	13.04
Wigan	0.03	1.42	3.65	48.25	1.02	7.92
GM	0.82	1.60	6.65	41.39	1.31	14.26
England	2.64	3.46	4.85	40.15	1.91	16.43

About 40% of the commuting journeys in England were by car in 2011 and a similar figure (41%) was recorded for GM (see Table 2). However, the car ownership level amongst households in England (79%) was higher than that of GM (77%). Within GM (see Table 1 and Figure 14), car ownership level varies widely, ranging from 69% in Manchester to 82% in Trafford and Stockport and 80% in Bury and Wigan. It is thus not surprising to find that the four high car ownership LAs also had the higher levels of car use commuters. Nearly all LAs in GM had over 42% of car use commuters, with the exception of Salford (39%) and Manchester (28%). By comparing the spatial distribution of car use commuters in Figure 15 with car ownership level in Figure 14, we can see that they exhibit very similar patterns.

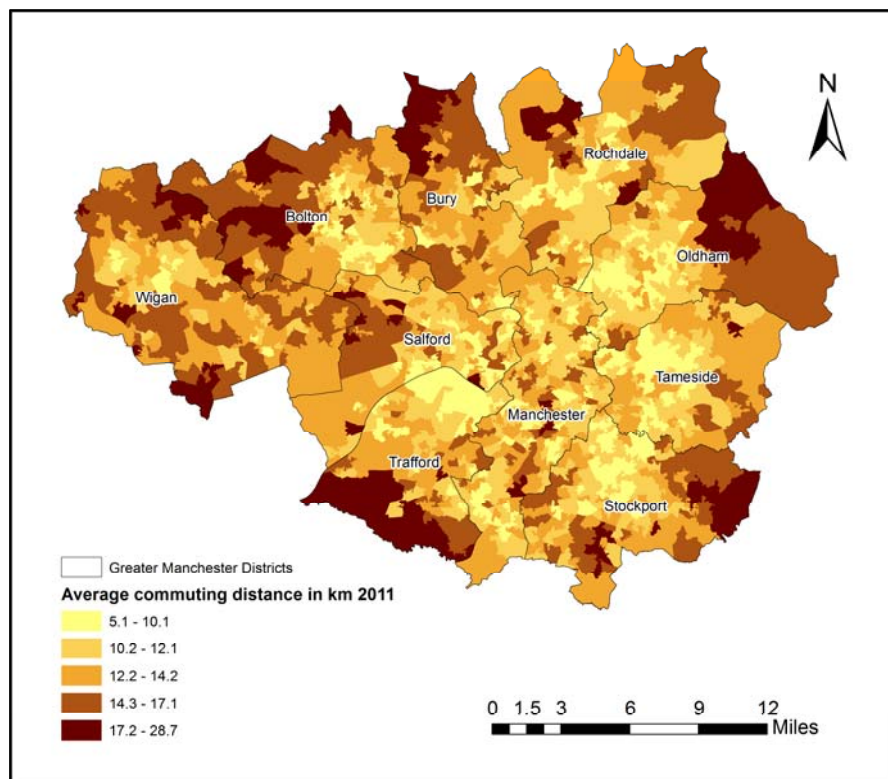


Figure 13: Average commuting distance, 2011

There were less public transport commuters in GM (9%) when comparing to England's 11% in 2011. Manchester stood out with the highest level of public transport commuters at 15%, whereas Wigan had the lowest level at 5% (see Table 2). Of the three public transport modes, bus was the most used mode (6.7%) in GM, and only 1.6% used train and just 0.8% used the metrolink. It is, however, important to note that these were 2011 figures. The Metrolink services then only had lines to Bury, Altrincham, Chorlton, and Eccles (via Salford Quays and Media City), hence the high levels of usage in Bury and Trafford. The network has recently been extended and now consists of six lines radiating from Manchester city centre to the final

stations at Altrincham, Ashton-under-Lyne, Bury, East Didsbury, Eccles and Rochdale and with further extensions to Oldham and Rochdale town centres and Manchester Airport (to be completed by 2016). A further extension to the Trafford Centre and Port Salford is also under development. It is expected that both tram and passenger numbers will increase across the conurbation in the next few years.

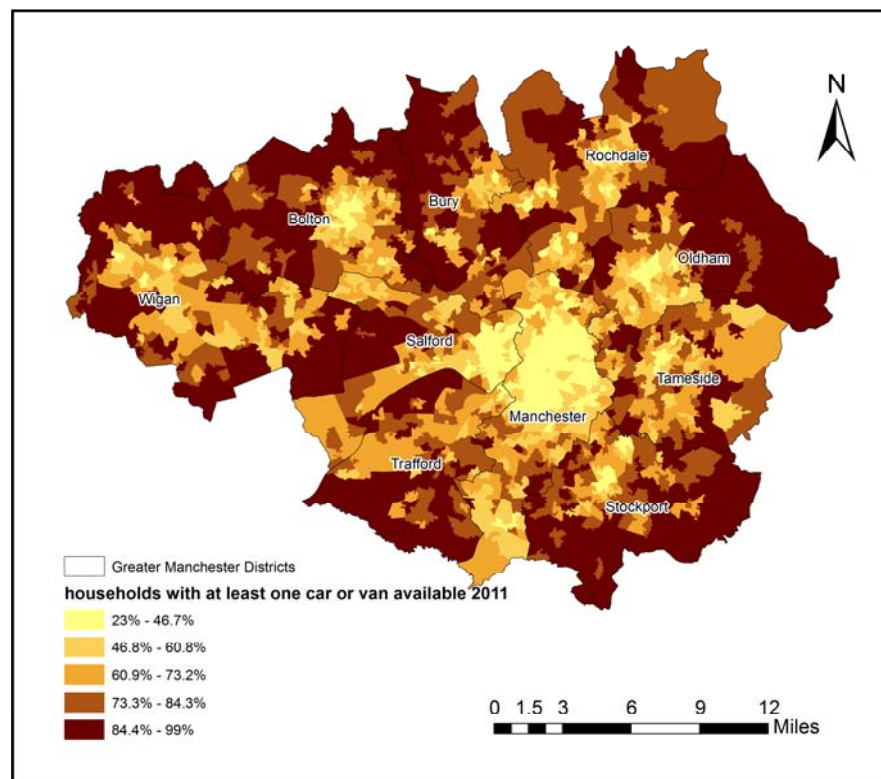


Figure 14: % ownership of at least a car or a van, 2011

With the promotion of the sustainable development agenda, it is interesting to find out whether those commuters with access to a car/van still chose to commute by public transport. When examining the national picture in

Figure 16, it is clear that the use of public transport tends to cluster in metropolitan areas, though the extent of usage was most stark in London and the wider South East. Of the car/van owning households in GM, only 14% of commuters used public transport, which was slightly below the average level in England at 16%. However, the more detailed spatial patterns in Figure 17 show that the commuters lived in the centre of the GM conurbation (around Manchester city centre) had the higher propensity to use public transport.

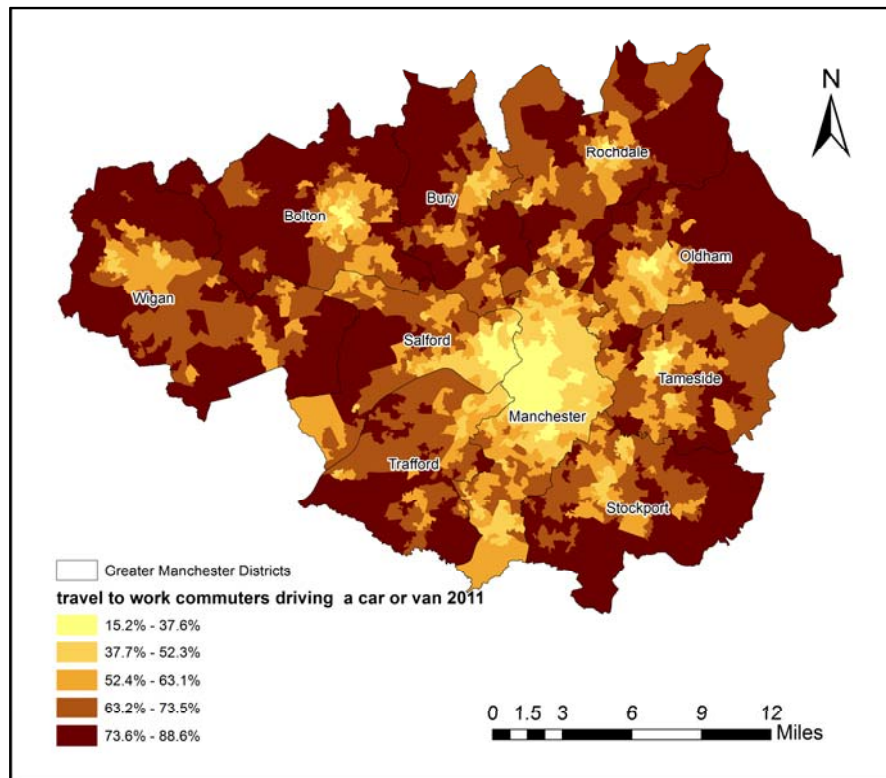


Figure 15: % commuting with car/van, 2011

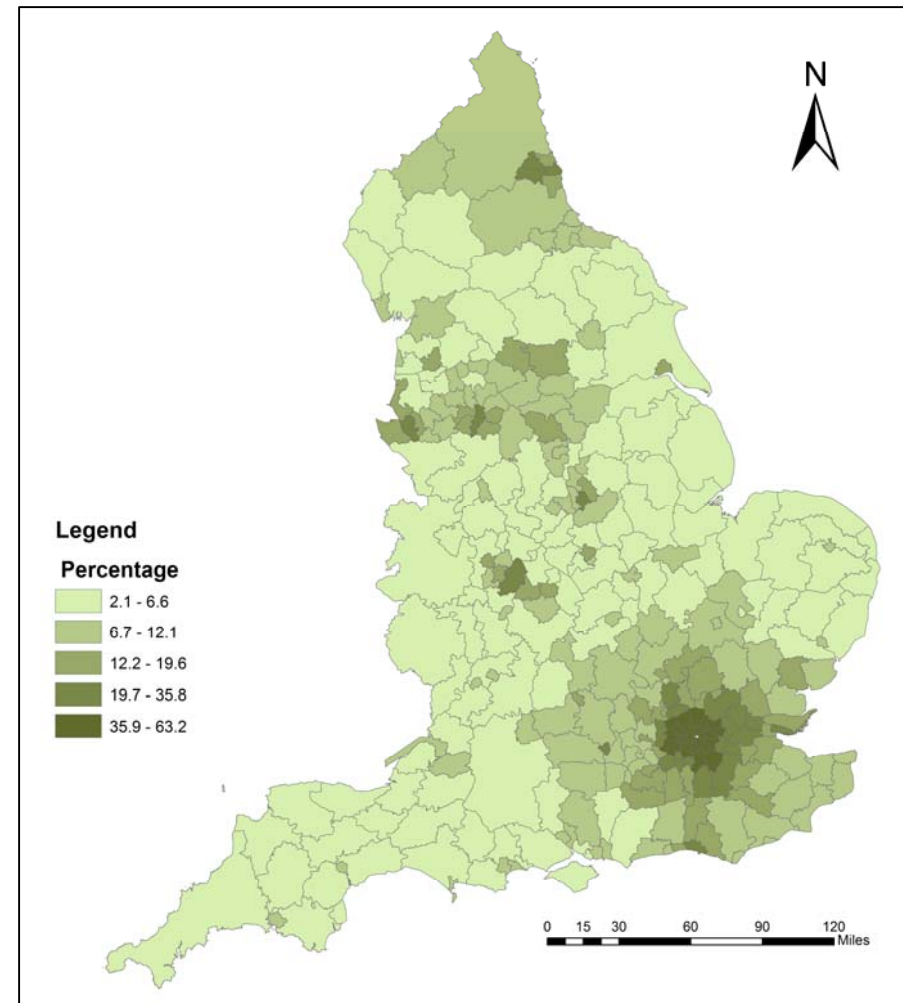


Figure 16: % commute with public transport with car access, 2011

Another sustainable transport mode is commuting by bicycle and major investment on cycling schemes can be found in the GM City Deal. At the time of the 2011 Census, however, only 1.3% of commuters cycled to

work in GM when compared to England's 1.9%. Manchester (2.3%) and Trafford (2.1%) had the largest proportion of cycling commuters, whereas Bolton and Bury had the lowest at 0.6%. There is a need to monitor the changes made to different parts of GM after the major transport investment and improvement schemes are implemented.

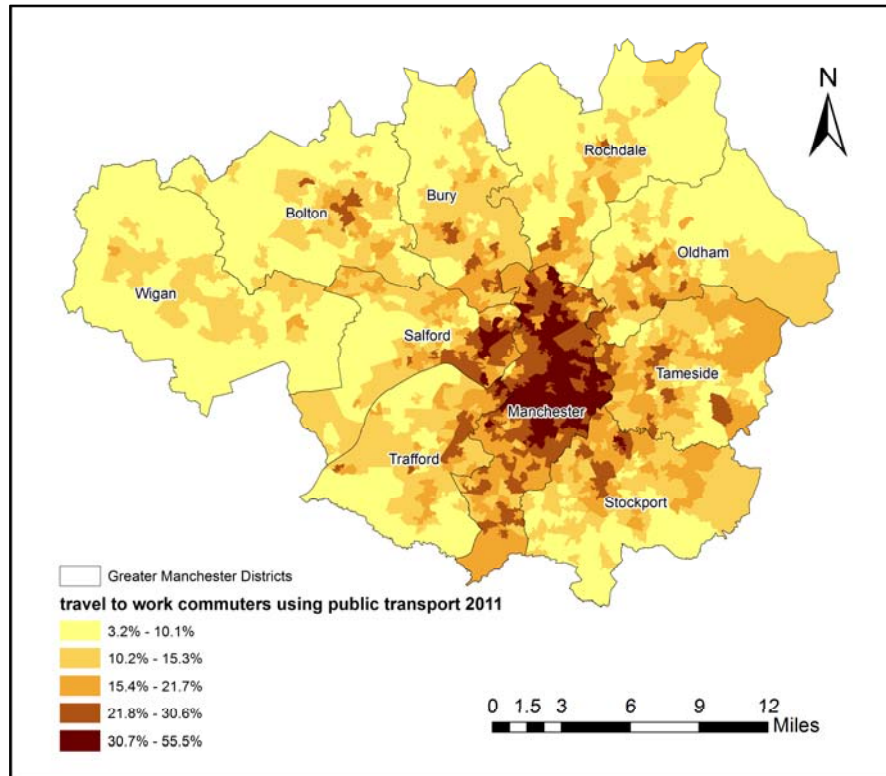


Figure 17: % commute with public transport, 2011

Speed, access to key services and road casualties

The heavy reliance on cars to commute is a widespread phenomenon in both GM and across England, as it provides door to door connectivity between different localities.

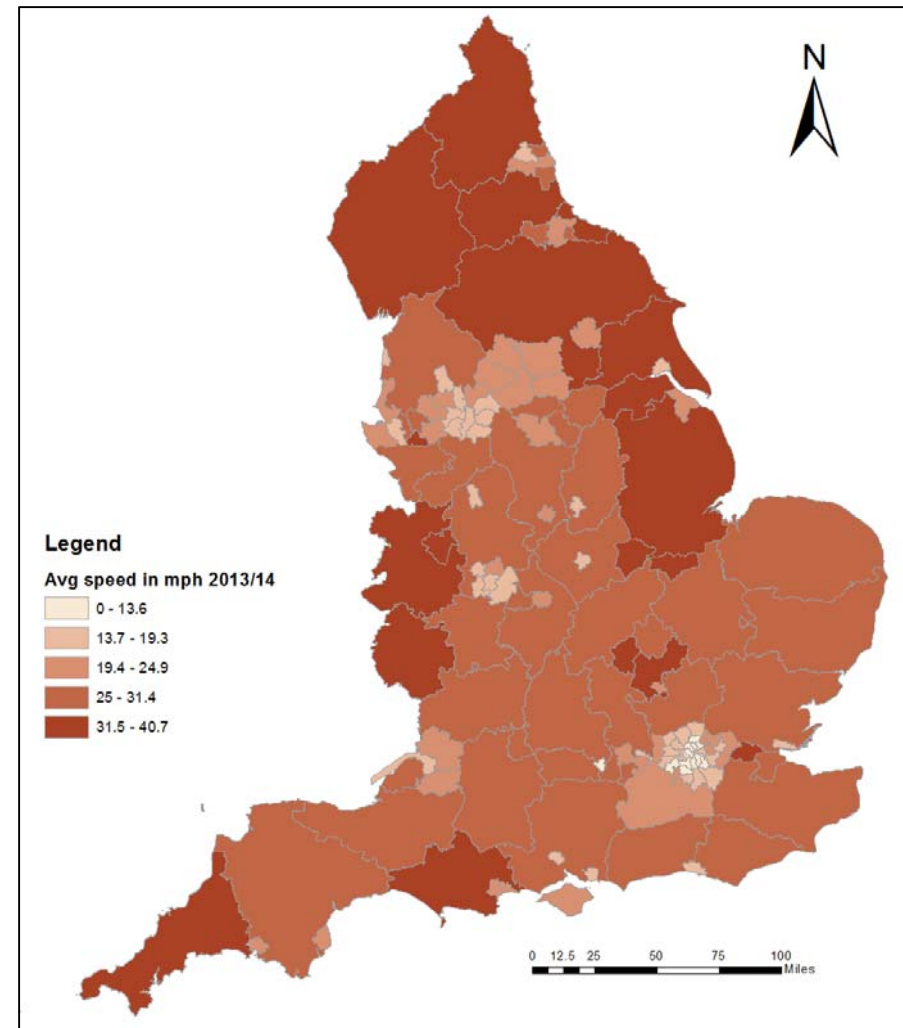


Figure 18: Average 'A' road vehicle speeds in peak hours, 2013/14

However, such convenience is highly constrained by road capacity and traffic congestion, especially during rush hours. Figure 18 maps the

average vehicle speeds of 'A' roads during the weekday morning peak⁴. The average vehicle speed in England was 24.3 miles per hour in 2013/14, which was worse when compared to 24.6 miles in 2006/07. The traffic flows were even more sluggish in GM, with the average of 17.9 miles per hour in 2013/14. As shown in Figure 18, GM and the West Midlands suffered most from slow traffic flows in peak hours outside Greater London.

The road capacity also affects the accessibility to key services. Based on the Department for Transport statistics, the average minimum travel times to employment centres, primary schools, secondary schools, further education, GPs, hospitals and food stores by car (Figure 19) and by public transport (Figure 20)⁵ were mapped.

As expected, the average travel times to access key services is shorter by car than by public transport: 15.6 minutes by public transport and 6.4 minutes by car/walking for the average in England; and 12.5 minutes and 5.6 minutes for GM. It is interesting to point out that the travel times by public transport slightly went down for both England and GM, but the situation reversed for car use. Of all GM authorities, it is interesting to note that Manchester (9.6 minutes) was ranked the 10th most accessible authority in terms of key service access by public transport in England, with the first nine all London boroughs. Trafford (5.2 minutes) was ranked the 18th in England in terms of access to key services by car.

⁴ These statistics are currently 'badged' as 'Experimental' by the Department for Transport and are undergoing evaluation.

⁵ Due to some data problems for the public transport or walking access data in 2012, so the latest published data is based on 2011 statistics.

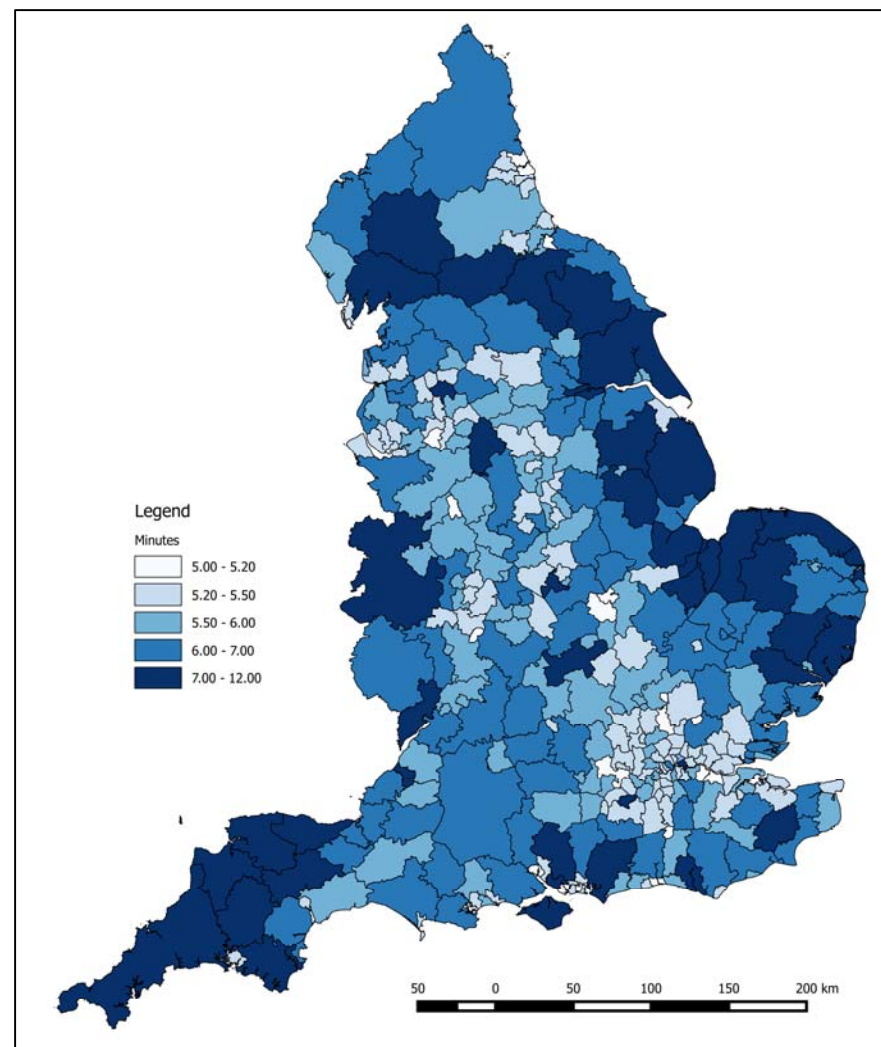


Figure 19: Access to key services by car, 2012

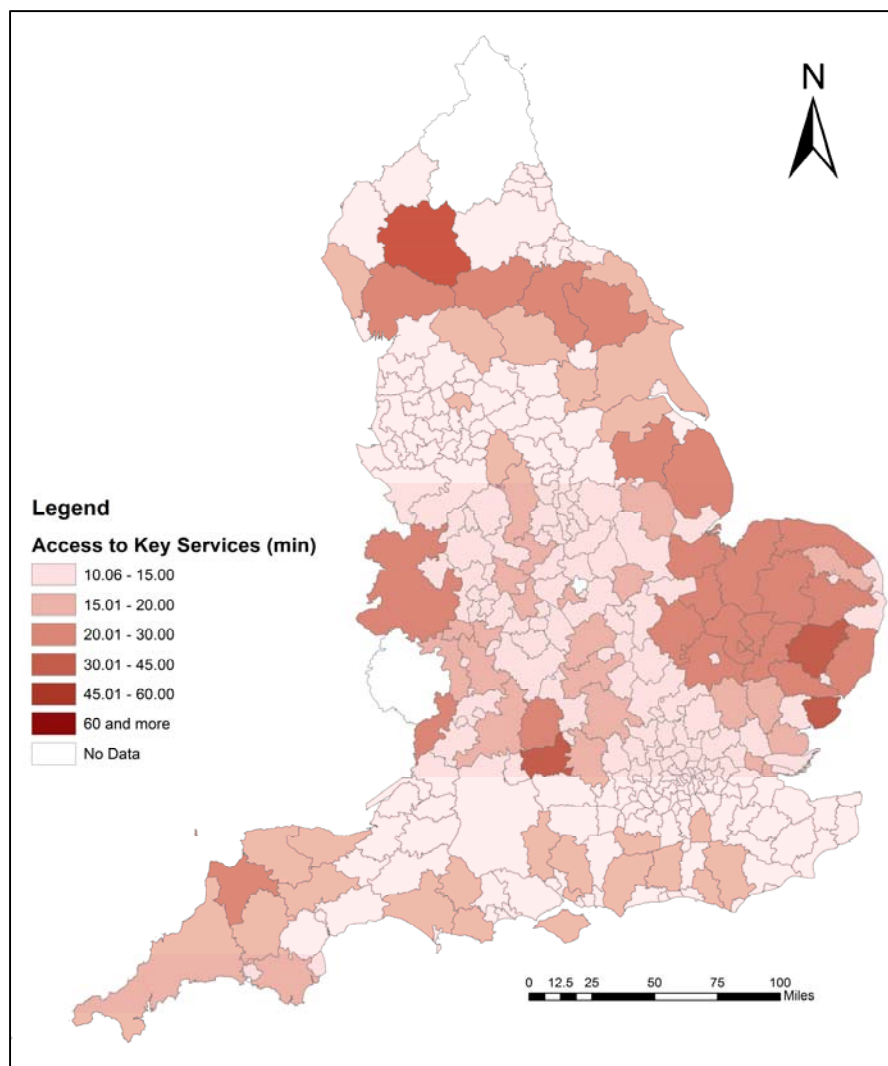


Figure 20: Access to key services by public transport or walking, 2011

Road safety is an important factor in transport planning. There were 5,444 road casualties in GM in 2013. Figure 21 provides a breakdown of the

types of casualties. Car accidents constituted over 57% of road casualties in GM and 59% in England. There was a higher level of pedestrian casualties in GM (19%) than the average of England (13%). However, the levels of casualties caused by bicycle and motor cycle were lower in GM (10% and 7% respectively) than average levels of England (both at 11%).

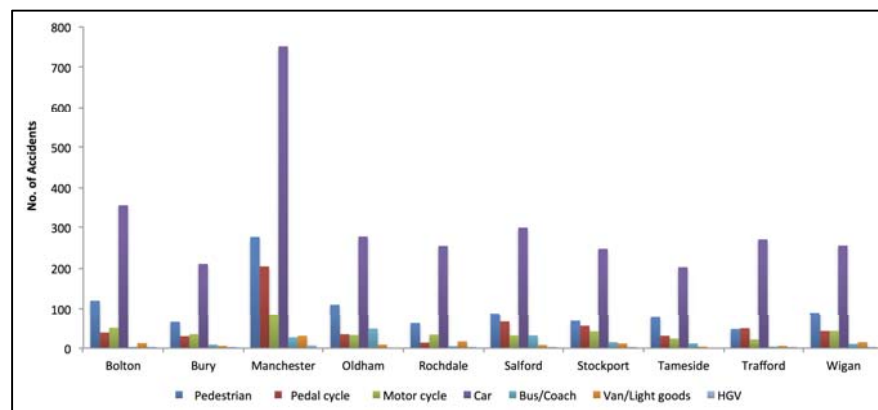


Figure 21: Types of road casualties, Greater Manchester local authorities 2013

CONCLUSION

The very diverse spatial patterns of development across the ten local authorities in GM are further exacerbated when examining them in the lower spatial scale. Our analysis shows that the housing markets in GM have been rather volatile during the economic downturn and particularly in the flats market. Stronger housing markets tend to be found in Stockport, Trafford and Bury and they tend to also have higher level of home ownership and are more resilient to market fluctuations. These areas also have higher car ownership and are fuelled with car-borne commuters.

GM as a conurbation had lower level of car ownership, but higher proportion of car use commuting. The average 'A' road speed in GM is worse than the average in England. While the access to key services is still faster by car than by public transport, the slow changes show that the travel time is reducing by public transport and is increasing by car. The spatial patterns of public transport use for commuting show that the levels of take up are related to the level of services provided, as observed by the high usage of the Metrolink in Bury and Trafford, the use of train in Stockport and the use of bus services in Manchester. There is a need to promote more sustainable commuting mode e.g. cycling and home working and to reduce the number of road accidents, particularly, car and pedestrian casualties.

It is interesting to note the complex situation of Manchester LA: it has a very mixed profile of housing tenure, with the highest level of both long and short distance commuters, and 42% of homeless decisions in GM made there. Wigan also exhibits different patterns of development: it has suffered a major house price crash during the downturn, a large share of homeless households, and a strong car commuter culture which is probably related to its peripheral location and lack of quality public transport provisions.

The analysis here provides a snapshot of the changing conditions of housing and transport across different parts of GM. With the changing economic and investment prospects in GM and the major transport

investment programmes underway, even some of the statistics provided here do not capture the latest development. It is thus important to continue the monitoring of the impact they create on different parts of the conurbation and on the quality of living of local residents.

The devolution of major governing and budget powers to GM, together with the announcement of the Northern Powerhouse initiative, has created an upbeat outlook in the City. However, the gravity and spatially diverse problems in many provincial cities, including GM, remain an imperative for strategic thinking.

APPENDIX

Data Sources and Definitions

All maps use boundary data obtained from the UKBorders service of EDINA. This data is provided with the support of the ESRC and JISC and uses boundary material which is copyright of the Crown, the Post Office and the ED-LINE consortium.

Figure	Title	Data Sources, Definition and Health Warnings
Figure 1*	Housing tenure distribution in Greater Manchester local authorities 2011	Census 2011: QS405EW - Tenure – Households https://www.nomisweb.co.uk/census/2011/qs405ew
Figure 2*	% of households in owner occupation 2011	Census 2011: QS405EW - Tenure – Households https://www.nomisweb.co.uk/census/2011/qs405ew
Figure 3*	% of households in social housing 2011	Census 2011: QS405EW - Tenure – Households https://www.nomisweb.co.uk/census/2011/qs405ew
Figure 4	Accepted as being homeless and in priority need, GM LAs, Number per 1,000 households (04/2014-03/2015)	Live tables on homelessness, table 784: local authorities' action under the homelessness provisions of the Housing Acts, financial year 2014 to 2015 https://www.gov.uk/government/statistical-data-sets/live-tables-on-homelessness
Figure 5	Median house price all types: (a) 2001; (b) 2007; (c) 2010; (d) 2014	ONS Statistical Bulletin: House Price Statistics for Small Areas in England and Wales, 1995 to 2014 http://www.ons.gov.uk/ons/rel/regional-analysis/house-price-statistics-for-small-areas/1995-2014/stb1.html
Figure 6	Median house price in Greater Manchester local authorities between 2001 and 2014	ONS Statistical Bulletin: House Price Statistics for Small Areas in England and Wales, 1995 to 2014 http://www.ons.gov.uk/ons/rel/regional-analysis/house-price-statistics-for-small-areas/1995-2014/stb1.html
Figure 7	Median house price flats: (a)2001; (b)2007; (c)2010; (d)2014	ONS Statistical Bulletin: House Price Statistics for Small Areas in England and Wales, 1995 to 2014 http://www.ons.gov.uk/ons/rel/regional-analysis/house-price-statistics-for-small-areas/1995-2014/stb1.html
Figure 8	Change in median house prices of flats in Greater Manchester local authorities between 2001 and 2014	ONS Statistical Bulletin: House Price Statistics for Small Areas in England and Wales, 1995 to 2014 http://www.ons.gov.uk/ons/rel/regional-analysis/house-price-statistics-for-small-areas/1995-2014/stb1.html

Figure 9	Median house price, 2014	This map shows the median price for medium layer super output areas across Greater Manchester. Source: ONS Statistical Bulletin: House Price Statistics for Small Areas in England and Wales, 1995 to 2014 http://www.ons.gov.uk/ons/rel/regional-analysis/house-price-statistics-for-small-areas/1995-2014/stb1.html
Figure 10	% change in house price, all types, 2007-14	ONS Statistical Bulletin: House Price Statistics for Small Areas in England and Wales, 1995 to 2014 http://www.ons.gov.uk/ons/rel/regional-analysis/house-price-statistics-for-small-areas/1995-2014/stb1.html
Figure 11	House Price Affordability, 2013	Table 576 Ratio of lower quartile house price to lower quartile earnings by district, from 1997 https://www.gov.uk/government/statistical-data-sets/live-tables-on-housing-market-and-house-prices Affordability here is defined as ratio of lower quartile workplace earning to lower quartile house price.
Figure 12	Weekly rental levels- Local Authority (LA), Private Registered Providers (PRP) and Private Market Rent Median (PMRM)	Table 702 Rents, Lettings and Tenancies: local authority average weekly rents, by district, from 1998-99 https://www.gov.uk/government/statistical-data-sets/live-tables-on-rents-lettings-and-tenancies Private Rental Market Statistics, Table 2.7: Summary of monthly rents recorded between 1 April 2014 and 31 March 2015 by administrative area for England https://www.gov.uk/government/statistics/private-rental-market-statistics-may-2015
Figure 13*	Average commuting distance, 2011	Census 2011, QS702EW Distance travelled to work https://www.nomisweb.co.uk/census/2011/qs702ew
Figure 14*	% ownership of at least a car or a van, 2011	QS416EW - Car or van availability https://www.nomisweb.co.uk/census/2011/qs416ew
Figure 15*	% commuting with car/van, 2011	QS416EW - Car or van availability https://www.nomisweb.co.uk/census/2011/qs416ew
Figure 16*	% commute with public transport with car access, 2011	DC7401EWla - Method of travel to work (2001 specification) by car or van availability https://www.nomisweb.co.uk/census/2011/dc7401ewla
Figure 17*	% commute with public transport, 2011	QS701EW Method of travel to work https://www.nomisweb.co.uk/census/2011/qs701ew
Figure 18	Average 'A' road vehicle speeds in peak hours, 2013/14	Average vehicle speeds (flow-weighted) during the weekday morning peak on locally managed 'A' roads: by unitary authority and county in England: annual averages from 2006/07 https://www.gov.uk/government/statistical-data-sets/cgn02-flow-weighted-vehicle-speeds

Figure 19	Access to key services by car, 2012	Transport connectivity and accessibility of key services statistics https://www.gov.uk/government/collections/transport-connectivity-and-accessibility-of-key-services-statistics
Figure 20	Access to key services by public transport or walking, 2011	Transport connectivity and accessibility of key services statistics https://www.gov.uk/government/collections/transport-connectivity-and-accessibility-of-key-services-statistics
Figure 21	Types of road casualties, Greater Manchester local authorities 2013	Department for Transport statistics, RAS30043 Reported casualties by region, local authority and road user type, England, 2013 https://www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2013
Table 1*	Commuting distance and car ownership, 2011	Census 2011, QS702EW Distance travelled to work https://www.nomisweb.co.uk/census/2011/qs702ew QS416EW - Car or van availability https://www.nomisweb.co.uk/census/2011/qs416ew
Table 2*	Transport mode of commuting (%), 2011	QS701EW Method of travel to work https://www.nomisweb.co.uk/census/2011/qs701ew

* In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.