Manchester City Council
Report for Information

Report to: Economy Scrutiny Committee – 24 June 2015

Subject: Demographic change in Manchester

Report of: Head of Performance and Intelligence

Summary

This paper looks at the issues in Manchester relating to demographic changes and the challenges in forecasting the future direction of change.

Recommendations

Members are asked to consider and comment on the information in this report.

Wards Affected: All

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

1   Introduction

1.1.   Demographic change in recent years has seen the population of the city grow beyond the 2015 target set in the Community Strategy. This report sets out the context and work underway relating to understanding demographic changes and the challenges in forecasting the future direction of change.

1.2.   The outputs from the analysis inform the City's decision making at all levels: the Community Strategy, specific Growth and Reform strategies, Devolution, service planning and Budget setting as well as informing our responses to consultations and returns such as the upcoming boundary review, Census 2021 and the School Capacity Survey (SCAP return).

1.3.   Official statistics from the Office of National Statistics (ONS) estimate the population size was 514,000 people in 2013. Different models forecast different population sizes going forward because they are based on different assumptions, as presented in Figure 1. According to these, it is likely that the population growth in the city will be higher than that projected by ONS. This report explains the differences between the models and their implications for future estimates of the city's population.

1.4.   The paper outlines some of the complexities and challenges in forecasting population trends in diverse cities like Manchester, the subsequent concerns over official ONS statistics as well as potential mitigations.

1.5.   Our own estimates and forecasts are predicated on access to high quality administrative data, highlighting the importance of the ICT and Information Strategy.

Figure 1
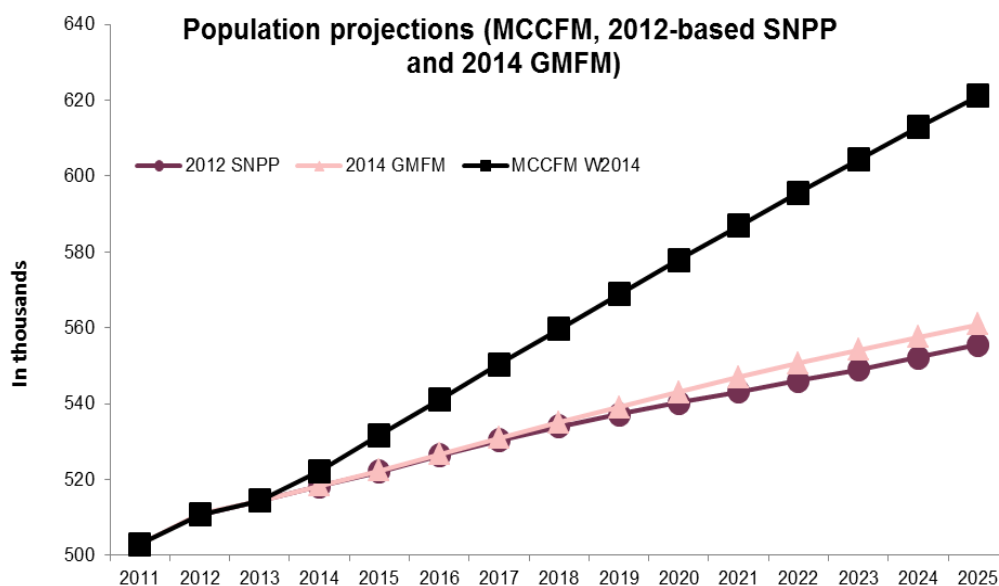
Source: 2012-based SNPP, ONS © Crown copyright; 2014 GMFM, © copyright Oxford Economics Ltd; MCCFM, Public Intelligence; analysis by Public Intelligence (PRI)

Glossary:

Census – a count of population, carried out every 10 years in the UK
MYE – Mid Year Estimates – a historic estimate of the size and structure (age bands and sex) of the population at national, regional and district levels. There is a two year time lag and estimates are revised every year
SNPP – Sub-National Population Projections – ONS forecasts, projecting the size and structure of the population looking forward, assuming current trends continue
GMFM – Greater Manchester Forecasting Model. Commissioned locally and based on ONS estimates and projections, adding in an economic dimension
MCCFM – a population forecasting model developed by PRI which enables forecasts based on different scenarios at city and ward levels

2.   Background

Summary of key population trends:

Recent fertility rates have been boosted by births to foreign born mothers. Around 60% of births are to UK-born mothers. The birth count has fallen slightly in the latest figures (2013) and the Total Fertility Rate has been lowering since it peaked in 2008. Forecasting forward, we are seeing a 'regression towards the mean' in Manchester's fertility rate. This means that cohorts that had bigger families in the past are tending to have smaller families as the number of children per family is reducing and getting closer to the average.

According to 2011 Census data, Manchester is moving towards smaller average household sizes, with more single people aged under 65, with a relative decline in the number of households made up of families with children. This means the average household size is set to be lower over the next decade and, with the increase in private sector renting, more transient.

The first of the post-war baby boom generation reached retirement age in 2011. Manchester has started experiencing higher numbers of residents aged 65-70, which should continue for a couple more years before numbers reduce again.

The Manchester model is predicated on the assumption that migration trends in the last decade will continue.

2012 has seen an unusual trend which puts Manchester's population growth forecast more in line with the national average due to more people leaving the city than entering it. This trend can partly be explained by student migration due to tuition fees and could therefore be a 3-4 years blip, as explained in this paper.

2.1.   The 2001 Census significantly undercounted the population of Manchester. Following a constructive dialogue with the Office for National Statistics (ONS), the 2001 mid-year estimate was revised and an acceptable position was agreed between the ONS and the Council (423,000). This provided a more realistic reflection of changes underway in the city linked to the repopulation of parts of the conurbation core and associated regeneration and renewal activity.

2.2.   The latest census took place in March 2011 and estimated that Manchester
       was the fastest growing city outside London, having grown by 19% over the
       decade, reaching just over 500,000 (503,127).

2.3.   As the census is used as the basis for calculating the annual population Mid-
       Year Estimates (MYE), it is important that the figure is as accurate as possible.
       Work done throughout the decade in-house and with ONS to improve the
       address base and thereby aid enumeration, meant that we were confident that
       the 2011 Census estimate was an acceptable figure for Manchester. In
       preparation for the 2011 Census, an internal population estimate was derived
       from administrative data (including GP registrations, Council Tax and
       Education) unrelated to ONS projections. The Census result fell comfortably
       within the expected range, meaning that the result was credible. However,
       given that there is no register of population in the UK and administrative data
       around immigration is currently poor, there will always be concern over the
       accuracy of forecasts and estimates, especially as time goes on from the last
       Census.

3   **Manchester's population**

3.1   Manchester's population estimate has been growing steadily, from 423,000 in
       2001 to the current 2013 MYE figure of 514,000, growth of 91,000 (an average
       of around 1.7% per year). The rate of growth in Manchester was at least twice
       the national average but slowed at the start of this decade (**Figure 2**).

3.2   International migration has made a significant contribution to the growth of the
       city's population and continues to contribute to growth, including to a higher
       than average birth rate because of the fertility rate of immigrant communities.

Figure 2
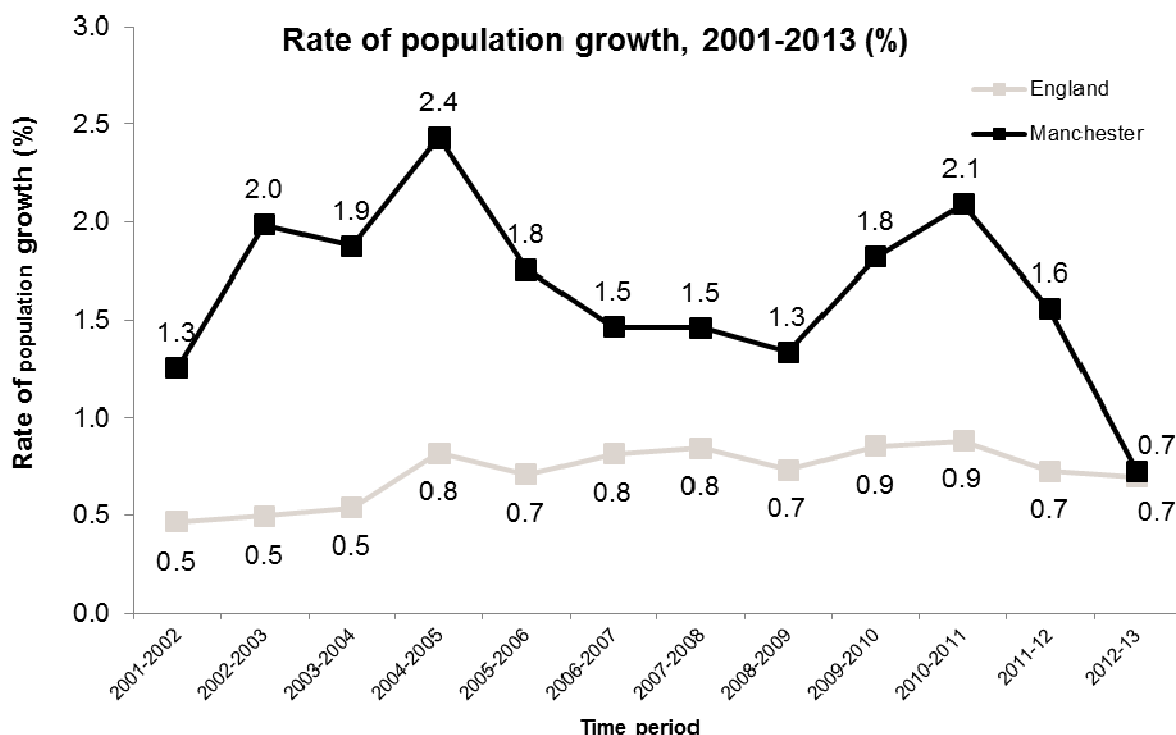
Source: Revised MYEs, ONS. © Crown copyright. Analysis by Public Intelligence (PRI)

immigration. Immigration trends do tend to be erratic due to changing circumstances both in the UK and around the world and it would be misleading to assume that high rates never come down.

3.4   2012 saw an unusual pattern in Manchester which affects the forecasts going forward. For the first time in many years more people left the city than moved into it, which resulted in an estimated loss of 839 people. Although this was compensated by more births than deaths (natural change) population growth reduced to just 0.8% (very near the national average) and much lower than usual for Manchester. This is very unlike the previous decade that averaged growth of around 6-7,000 residents per annum. A more detailed discussion about this trend comes later in this report in section 3.13.

3.5   ONS also produce subnational population projections (SNPP), which provide an indication of the possible size and structure of the future population, based on the continuation of recent demographic trends and are produced on a consistent basis across all English local authorities. The projections are trend-based, making assumptions about future fertility, mortality and migration levels based on trends in recent estimates, usually over a five-year reference period. They give an indication of what the future population size, age and sex structure might be if recent trends continued.

Estimate formula:

To the last year estimated:

Add births (known)
Deduct deaths (known)
Add internal migration (derived mainly from GP and Higher Education data)
Deduct internal emigration (derived mainly from GP and Higher Education data)
Add international migration (derived from surveys)
Deduct international emigration (derived from surveys)

Forecasting formula:

Age each cohort by one year
Add estimated births (based on estimated fertility rates)
Deduct estimated deaths (based on mortality rates)
Add migration and immigration estimates (based on previous trends)
Deduct emigration estimates (based on previous trends)

3.6   The projections do not consider the capacity of an area to accommodate changes in its population or the impact of any strategy. They simply indicate the population levels and age structure that would result if the assumptions and trends based on observed past estimates were to be realised. They are a pure mathematical exercise.

3.7 2012-based SNPP considerably reduces growth over the decade to 6.9%, lower than the national average of 8% and counter-intuitive to the 19% growth in the city seen over the past decade. The projections developed by ONS use some reliable data (births and deaths), some relatively reliable data such as GP registration, student data and some DWP data and data that is not reliable, particularly around international migration both into and out of the country.

3.8 Using the SNPP, Manchester's population is projected to continue to increase to 522,100 by 2015, to 543,100 by 2021 and to 591,600 by 2037. The average rate of growth overall between 2012 and 2037 is 0.6% per year. This growth is not evenly spread across all age groups. Although the annual rates of growth of 0-15s are projected to continue to increase until 2018 they will start to fall, falling below zero from 2026 onwards. The average rates of growth of 0-15s between 2012 and 2037 are projected to be 0.4% per year. Conversely, the numbers of residents aged 65 and over are projected to start to increase slowly until the end of the decade, and then grow rapidly to the end of the 2020s. Average rates of growth of this age group over the total period (2012-2037) are 1.8% per year.

3.9 The 'formula' and methodologies used by ONS are developed over time and consulted upon. The latest major change, applied in 2011, was developed to address anomalies between the projections produced, the administrative data and the Census particularly in London where there was a 'centralisation' effect. In other words, too much of the immigration was distributed to the centre and not enough to the outer London Boroughs. The methodology was applied nationally and Manchester, which 'loses out', argued that this effect is unlikely to be true in Greater Manchester (GM) because much of the cheap housing, attractive to international migrants, is actually in the centre of the conurbation, in Manchester. While there is logic in the argument, there is a need to provide evidence to ONS to back it up. ONS will be open to refining the methodology if and when the evidence becomes available.

Immigration

3.10 Immigration acts as a major accelerator to the overall projection largely because recent immigrant households tend to have higher fertility rates and it is this natural increase which is anticipated to drive Manchester's future population growth. Over the past decade, areas such as Cheetham Hill have continually attracted migrants from across Asia, Africa and Europe, attracted by a pre-established Black and ethnic minority (BME) community and an established support network linked to language, nationality and faith. Areas such as Moston Lane, Moss Side and Gorton South have also become popular with new arrival communities due to cheap housing, predominantly private rented terraced, and low cost commercial space. There are also other areas in GM such as Rochdale and Oldham that have similar characteristics.

3.11 The fallout from the economic downturn continues to drive international migration, with economic migrants from EU15 Mediterranean countries making up an increasing proportion of new arrivals to the city. Net long term migration

to the UK was up year ending December 2013, with a rise in immigrants from the EU, including an increase in citizens of EU15 (pre 2004, including Spain, Portugal, Italy, Greece) and EU2 (Romania and Bulgaria). In recent years though, Manchester has seen a fall in the number of new national insurance registrations, although this levelled off in 2013/14. Overall we have an increase in immigration from some EU countries but a fall from others, demonstrating the complexity of the issue.

Internal Migration

3.12   The 2012/13 internal migration data shows an increase in the gap in net internal migration. In 2010/11 the gap was -1,500 (i.e. a loss of 1,500 due to internal migration); in 2011/12 the gap increased to -1,673; in 2012/13 it increased further to over -3,659.

3.13   Some of this 'gap' can be traced back to the changes in the student population. When the student population is stable, most of those completing their courses and leaving Manchester are 'replaced' by those starting their degrees. However, the increase in tuition fees that became operative in 2012 led to a reduction in the number of students starting university in 2012/13 meaning that more students left the city than entered it. Recent admissions data suggests that numbers of admissions may be recovering and that the reduction was a blip rather than part of a longer term trend. At the moment however the number of students in the city is lower than was the case prior to 2012 as the cohort impacted by lower admissions is still affecting the figures.

Students

3.14   As outlined above the city's population is therefore significantly affected by the number of students resident here. The impact of raising costs of being a student (tuition fees plus maintenance) from 2012/13 saw a 764 decrease in 2013/14 to 70,876, on top of a 4,290 decrease the previous year and this cohort with lower numbers is still passing through the system. Recent admissions data suggests that the number of students in their first year has recovered. In 2013/14, overseas (non-EU) undergraduate and postgraduate numbers had recovered to pre-2012 levels, while EU undergraduate and postgraduate numbers recovered somewhat but were still below 2011/12 levels. These trends are consistent with the national trends.

3.15   **Figure 3** summarises the number of students attending Manchester University, Manchester Metropolitan University and The Royal Northern College of Music. 61% of students studying in the universities live in the City.

Figure 3

All students at 3 Manchester HEs*
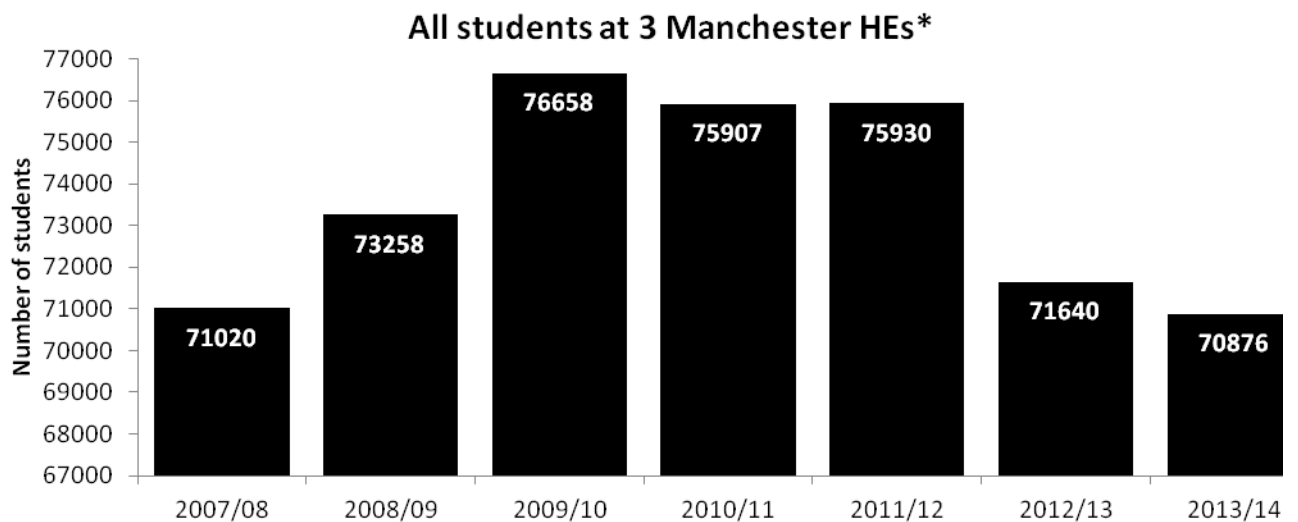
* University of Manchester, Manchester Metropolitan University,
Royal Northern College of Music

Source: HESA; analysis by Public Intelligence (PRI)

3.16   While numbers of all undergraduates and postgraduates from the UK have
been falling, student numbers from China, Malaysia, Hong Kong, Singapore,
Saudi Arabia, Romania, Greece and South Korea have shown the greatest
increases since 2011/12. It is clear that graduate retention has become an
increasing factor in supporting population growth as we can offer a more
affordable option to London as well as higher skilled jobs and an attractive
lifestyle for graduates.

Greater Manchester Forecasting Model (GMFM)

3.17   An alternative population forecast is available from the Greater Manchester
Forecasting Model (GMFM), which is an economic model with a demographic
element, commissioned by Greater Manchester local authorities. The aim of
the GMFM is to quantify the links between economic change and population
change at local authority level in Greater Manchester and produce forecasts of
economic and population change consistent with existing projections for the
UK and international economies. The GMFM provides forecasts on a 'policy
neutral' basis. That is, known investments and developments are included, as
are the effects of known policies. Unconfirmed, aspirational or policies at
planning or development stage are not included. Whereas official projections
of migration are based on the continuation of recent trends, the GMFM
approach depends on looking at the economic forces (for example, regional
unemployment, house price and wage levels compared to London or
nationally), driving recent patterns of migration, as well as simple trends.

3.18   Population forecasts from the 2014 GMFM show continuing growth in
Manchester's population but at a higher level than in the 2012-based SNPP,
reaching 522,400 by 2015, 546,900 by 2021 and 584,900 by 2034 (**Figure 1
above**).

The MCC population forecasting model (MCCFM)

3.19   PRI has developed a Manchester-focused population forecasting model that creates different scenarios incorporating local data and knowledge to estimate the size of the population, including at ward level, in order to give a better understanding of the population trends within the City and to ensure there is the best possible intelligence and modelling to support decision making.

3.20   Different scenarios use different assumptions and the intention is to ensure that when used, they are credible and can be 'audited'. Scenarios developed to date have been discussed with Professor Ludi Simpson and developed with his advice as a 'critical friend'. The latest forecast, MCCFM W2014, estimates that the population could reach over 600,000 within 10 years, if migration remained in line with the average experienced in the city during the past decade (MCCFM W2014 on **Figure 1 above**).[1]

3.21   Further detailed work, including incorporation of additional local datasets is planned to continuously strengthen the accuracy of the model:

- **Birth and mortality rates, migration (international and internal) and graduate retention** – MCCFM allows us to vary the birth rate, mortality rate and expected migration across different wards in the city. Through identifying alternative local data sources we can make informed adjustments to the forecasting.

- **Housing market growth** – using the housing supply forecast at ward level we can re-distribute the population from a ward with no housing plans to one that has.

3.22   To date much of the in-house modelling has focussed on school places planning given the urgent nature to understand the growth in this cohort and where it might be seen. Further modelling work to refine planned housing growth and changes in the jobs market are factored into the Manchester forecasting model development plan. Our issues with some of the elements of the formulas used in the SNPP methodology require evidence to challenge and output from the MCCFM will enable us to make a case.

3.23   For example, forecasts from MCCFM W2014 are consistently higher than the 2012-based SNPP projections for ages 0-4, 5-15 and 60/65 and over because of the different assumptions included in the calculations and the inclusion of local intelligence in our in-house forecasting model (**Figure 4**).

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[1] The model is constantly updated with administrative data and forecasts are produced twice a year – in the winter and in the summer.

Figure 4

Population projections and forecasts by age group (MCCFM and 2012-based SNPP)
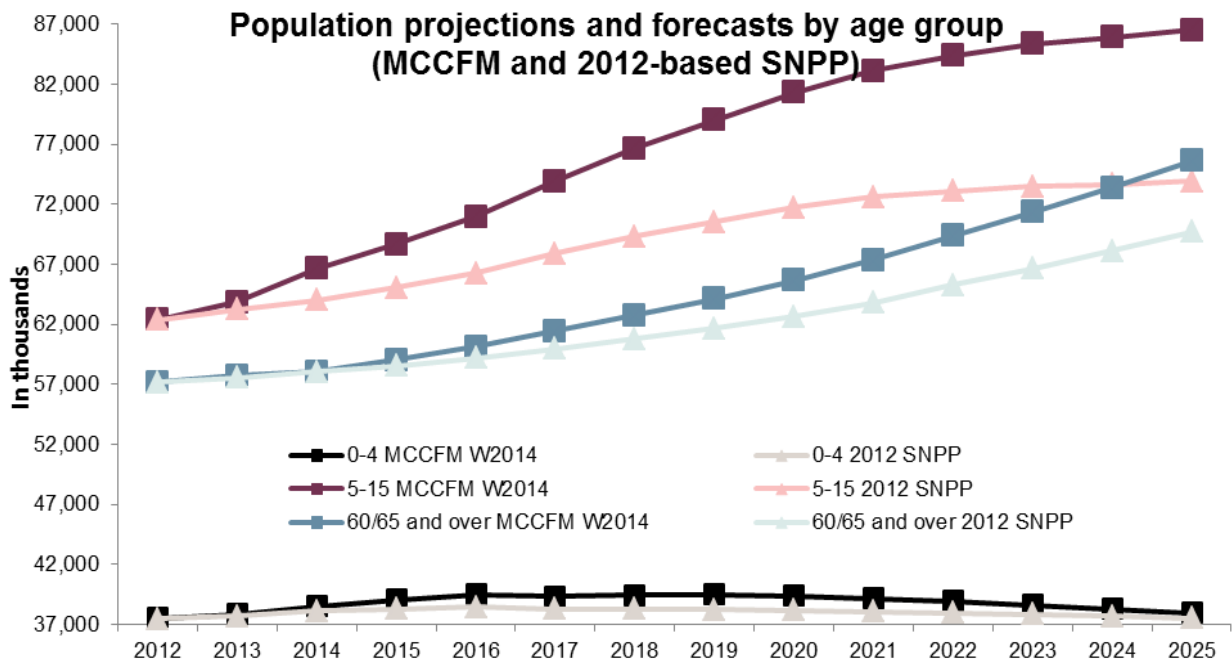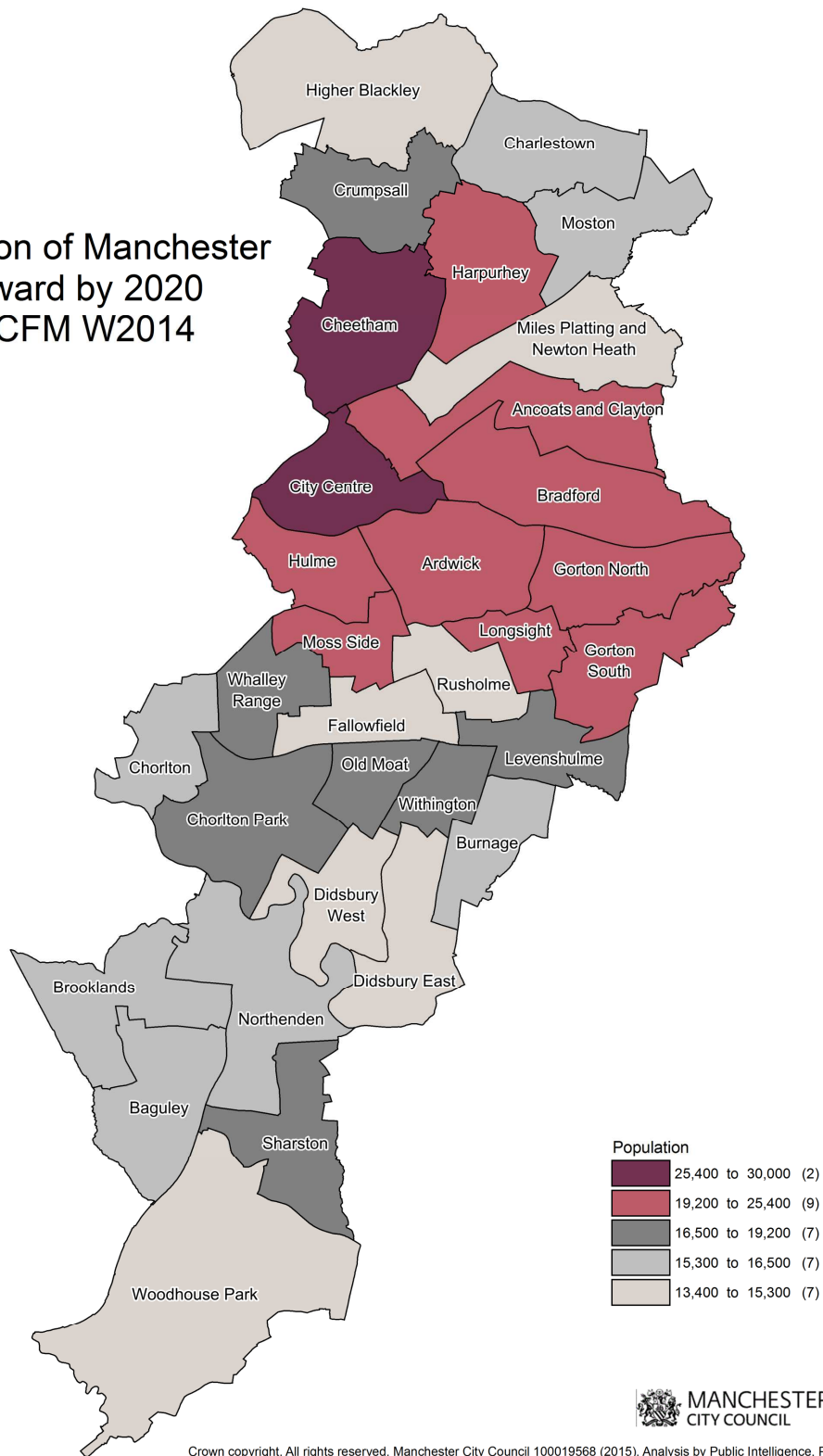
Source: 2012-based SNPP, ONS © Crown copyright; MCCFM W2014, Public Intelligence; analysis by Public Intelligence (PRI)

At a local level, according to MCCFM W2014, by 2020 Cheetham and City Centre wards are forecast to have the largest populations, with parts of Central and North Manchester following closely behind (**Map 1**). These forecasts will inform the Boundary Review in 2016.

Map 1

Population of Manchester by ward by 2020 MCCFM W2014

Population

25,400	to 30,000	(2)
19,200	to 25,400	(9)
16,500	to 19,200	(7)
15,300	to 16,500	(7)
13,400	to 15,300	(7)

MANCHESTER
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Economic data:

4.1. A range of other factors is responsible for the growth of Manchester's population over the last 14 years and is likely to have an impact going forward. These include:

4.2. **Residents in employment**: the rate of residents claiming out of work benefits has fallen faster than the national rate over the past decade (**Figure 5**). Although the employment rate in the city is below the UK average, the rate of employment growth over the past decade (**Figure 6**) has been faster than in the UK as a whole and Manchester is expected to generate 39,000 new jobs by 2023. Growth sectors such as construction, customer service and tourism will increase demand for migrant labour to take up entry level and minimum wage roles. Manchester also continues to have an attractive wage to housing costs ratio compared to many other larger urban centres and a strong international profile led by sports and culture, particularly across the EU.

4.3. Questions remain over untracked immigrants coming to the city, often linked, initially, to short term and unregulated jobs. Short-term migrants (typically here between 3-12 months) often do not appear in the estimates or projections. There are currently limited data regarding these individuals (ONS estimated 2,610 in 2010), but they are still dependent on services and need to be housed, albeit on a short term basis in the city. With a global trend of migration and urbanisation, this challenge is shared across Core Cities in the UK and other international cities, particularly in Europe.

Figure 5
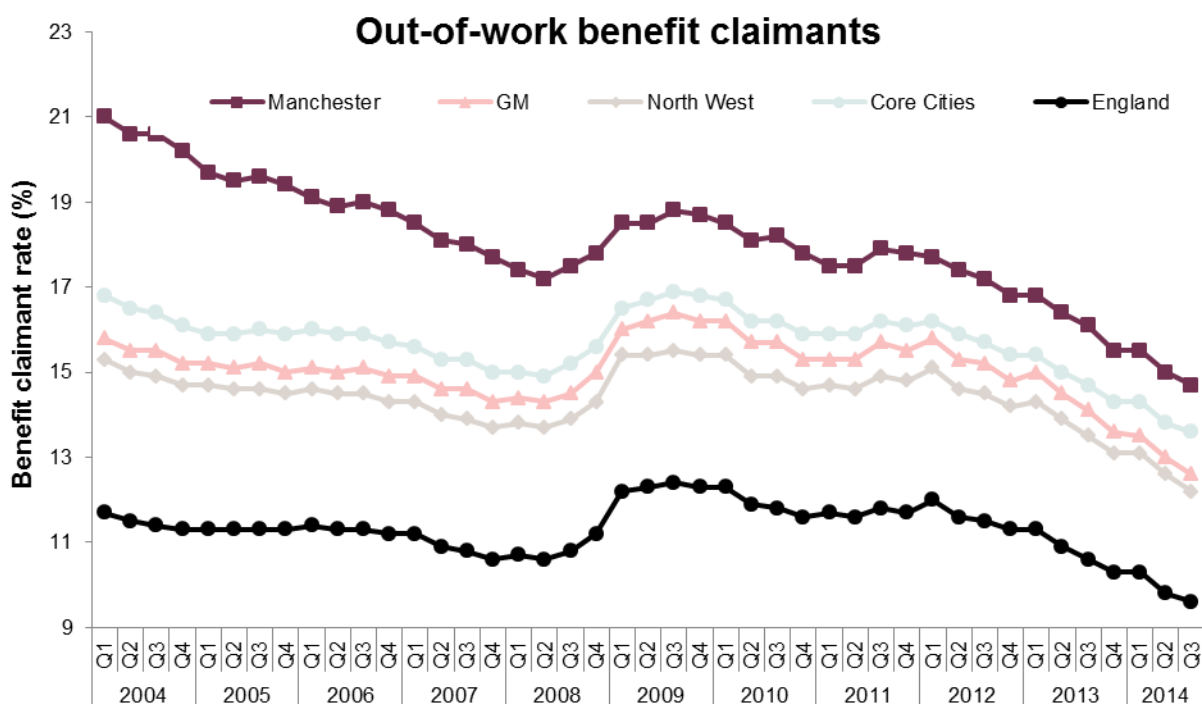
Source: Benefit claimants - Working age client group, DWP. © Crown copyright Analysis by Public Intelligence (PRI)

Figure 6

Employment growth
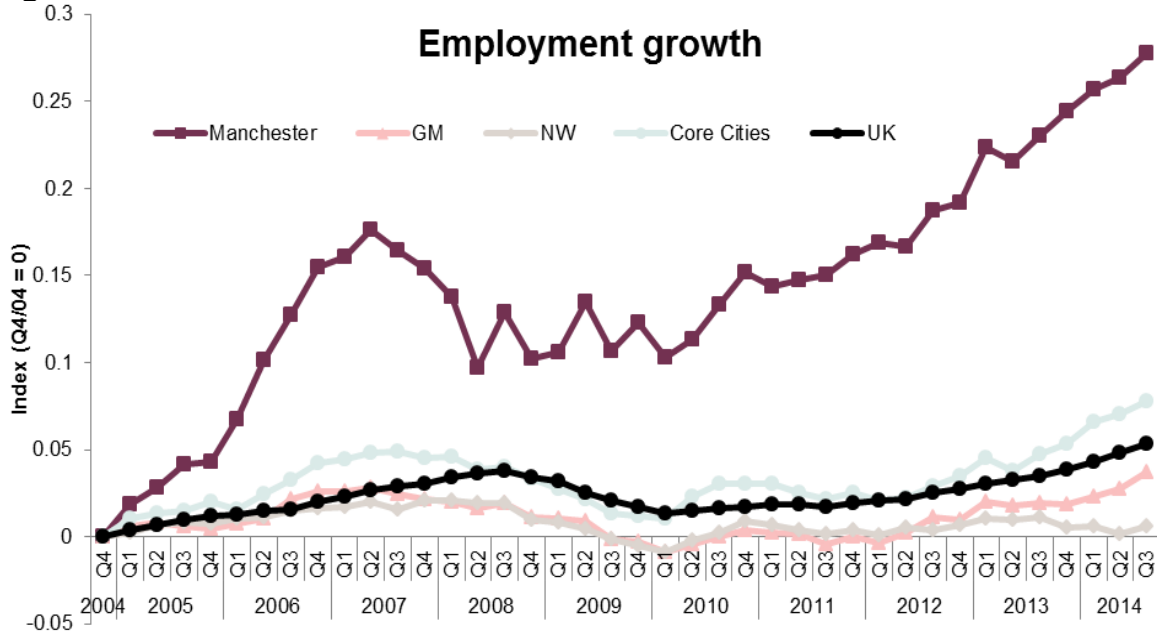
Source: Annual Population Survey, ONS 2015. © Crown copyright. Analysis by Public Intelligence (PRI)

4.4.   **Children**: MCCFM W2014 forecasts show that the number of children will continue to increase in the immediate future at the same time as the number and percentage of children in low income families continues to decrease. **Figure 7** presents the negative correlation.

Figure 7
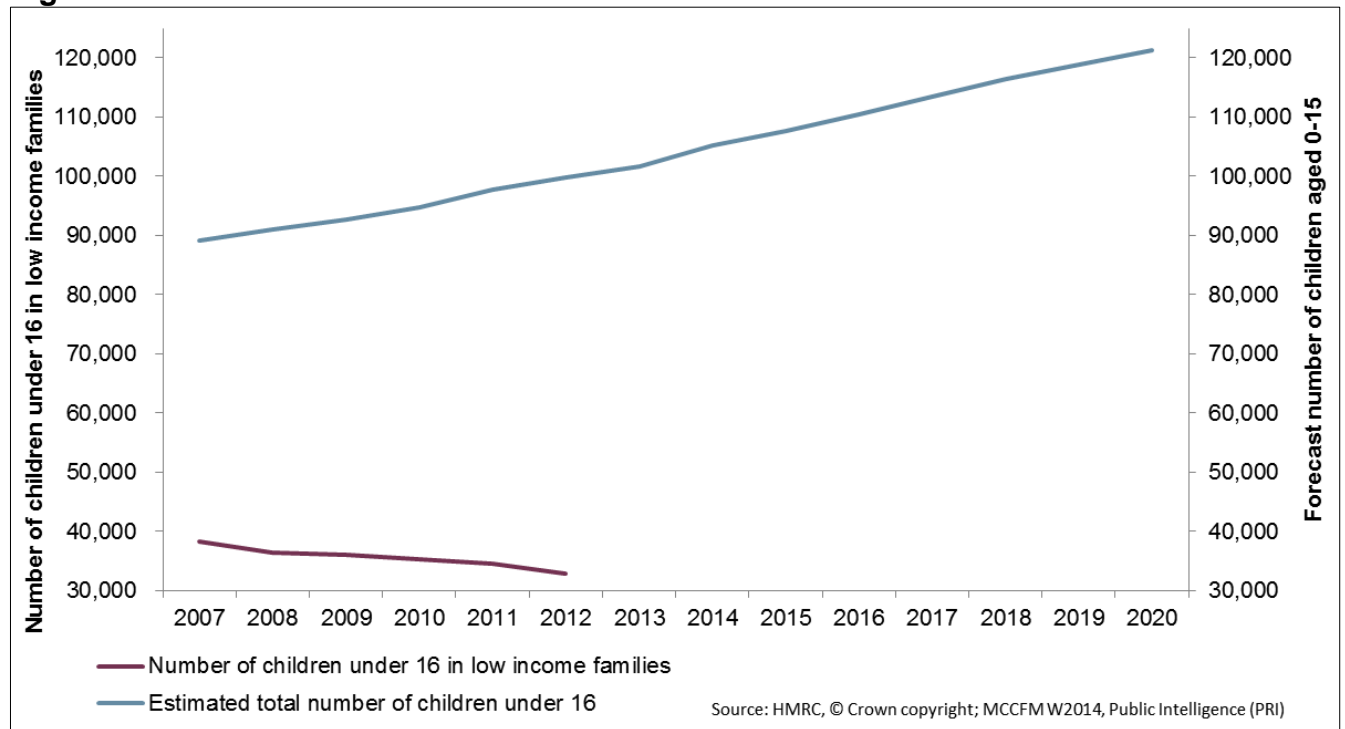
Source: HMRC, © Crown copyright; MCCFM W2014, Public Intelligence (PRI)

Housing and households: Manchester's residential pipeline equates to roughly 25,000 new homes in the period to 2025, with a particular concentration at the core of the city. Census data show changes to household composition in the city, with many wards gaining single person or small households at the expense of families with children (**Figure 8**).

Figure 8
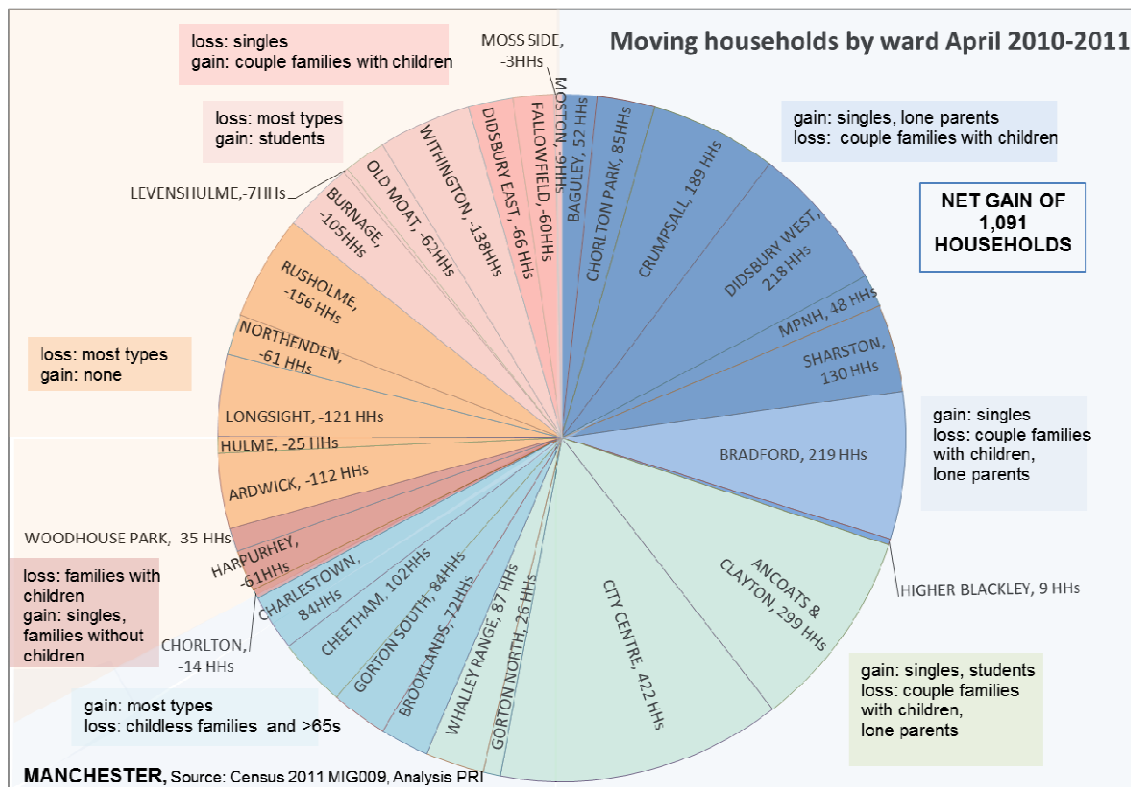
4.5.   Information about the city's population is disseminated to the public via Census dashboards, briefing papers, the annual State of the City report and the Intelligence Hub Analysis Tool on the Council's web site. The Public Intelligence intranet pages host additional briefings and data for users within the Council. We also circulate monthly briefings on Job Seekers Allowance claimants to Members and officers via email.

5. Conclusion

5.1.   This paper set out the current position and the work underway to develop more accurate population modelling locally. Modelling tools are being used to understand the range of issues affecting the city's future population including, in particular, the treatment of migration in statistical terms. This work aims to ensure that we develop robust tools to enable us to better understand recent and future trends and enable us to discuss these with ONS and other agencies.

5.2.   A significant amount of work has been carried out to create a Manchester population estimate using administrative data and to develop a population forecasting modelling tool to give a better understanding of the population trends within the City. This has informed improvements to pupil places

planning. Further work is planned, including to support discussions with the Boundary Commission and a new scenario focussing on planned housing and job increases.

Appendix: **The future of the Census**

The national Census in its current form is expensive, outdated and with modern technology could be delivered more effectively and cheaply. A paper-based census is time intensive and customarily only done every ten years. As a result, we are often relying on data that is out of date almost as soon as it has been analysed then published.

Consultation on the future of the Census, to which the Council responded, led to a recommendation by the National Statistician that the 2021 Census should be conducted online (or partially online), a modern successor to the traditional paper-based decennial census, with support for those who are unable to complete the census form online. This would help compile the data more cheaply and, when supplemented by greater use of administrative data and surveys, will allow access to more up-to-date population statistics between censuses.

Central Government supports the dual running of an online (decennial) census with increased use of administrative data in 2021 only, but not for future censuses. Censuses after 2021 will be conducted using other sources of data, supplemented by sample rolling census surveys, and will provide more timely statistical information.

While using national, administrative data could offer an annual population estimate which would be relatively accurate at local authority level, this would lose fine levels of detail and characteristics of the population at smaller geographies which are used in-house to plan services at a local level. Although data for several years could be combined for some smaller geographies, reliability issues still remain. It is possible that some improvements can be delivered in the shorter term and we continue to work with ONS to influence methodologies where we can.