

RESTRICTED DISTRIBUTION

Incorporating cross-border mobility data into projections of secondary school rolls

GLA Technical Note 2013-06-07

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Background

The GLA's Intelligence Unit (IU) operates a service providing school roll projections to London local authorities. The service is an optional, paid-for service that the majority of London's boroughs currently subscribe to. As part of on-going development work to the service, the GLA IU has been investigating options for improving the handling of cross-border flows of pupils within its models.

The GLA's existing models operate on an individual borough basis – incorporating only roll and population data for the area being projected for. The effects of cross-border mobility are modelled relatively simply with the net impact in- and out-flows accounted for as fixed proportions of the total roll. This approach has historically provided good results despite the high level of mobility exhibited by London's secondary school pupils. However, with pressure on secondary places projected to rise dramatically in the coming years, it seems likely that better incorporating mobility data into roll projection models will be important in improving the quality of roll projections.

To this end, the GLA is currently developing new roll projection models that make use of detailed cross-border mobility data. These models will incorporate pupil residency data for individual schools in combination with ward population projections and GP registrations by LSOA of residence. It is hoped that these improved models will provide both more accurate projections and an array of outputs that better meet the needs of school place planners.

Before beginning development of its new roll projection models, the GLA decided to undertake a proof-of-concept modelling exercise using publicly available data to better understand the likely impact of the new methodology. Around this time, the GLA was approached by a group of local authority planning officers who wanted to gain a better understanding of how demand for secondary places is likely to change for London's South-West region in the future. The methodology employed and outputs from this exercise were designed in conjunction with representatives from this group.

The agreed output from the exercise was a set of projected Year 7 rolls for London local authorities, which incorporated available data on patterns of cross-border mobility. This year group was chosen as it was decided that this gave the best indication of required future secondary capacity.

This document explains the methodology that was employed in this exercise and the results it yielded. All data used in the exercise is publicly available and the methodology can be reproduced by anyone so-minded to do so.

Methodology

The only publicly available data sets relating to pupil mobility are produced annually by the Department for Education (DfE)¹. This data is limited in the detail available. Residency and school location data is available at local authority or county-level only. Data is unavailable for individual school years, being provided by phase of education – i.e. total primary and total secondary. Data for special schools is not split by phase of education. The most recently available data in this series pertains to the school census held in January 2012. The cross-tabulations of location of school and home residence are only available for state-funded schools. All analysis below therefore refers only to those pupils attending state-funded schools. In addition, special schools are excluded from the data. For each local authority, the number of Year 7 pupils on roll in January 2012 was taken from another DfE release².

This data set was used in combination with local authority population estimates and projections for London and those surrounding areas from which there was a significant inflow of pupils to London. For London, the GLA's 2012 round of borough-level population projections were used. For areas outside of London, the ONS 2011-based interim Subnational Population Projections were substituted.

The methodology used for producing roll projections can be broken down into the following steps:

1. By local authority of residence (including counties and unitary authorities outside of London that export a significant number of pupils to London), create estimates for January 2012 of the number of children aged 11 attending state-funded schools in a London local authority.
2. For those children aged 11 attending a London state-funded school in each local authority of residence, estimate the numbers attending school in each possible destination authority in 2012.
3. Use the estimates from Step 1 together with population projections to create projections of the number of children in each authority of residence on roll at a London state-funded school.
4. Use the estimates produced in Step 2 to assign those pupils projected in Step 3 to the roll of a London local authority.

The outputs from this methodology take the form of origin-destination matrices of projected rolls for each combination of area of residence and area of schooling. The full array of results can then be aggregated to more manageable tables as desired.

To better understand the sensitivity of the projected rolls to different assumptions made in the modelling process, multiple projections were generated using combinations of different assumptions. The aspects of the model that were tested in this way were:

- The choice of population projection used
- The proportion of the population attending provision outside of London state-funded schools

¹ DfE: Schools, Pupils and their Characteristics, January 2012; June 2012

² School capacity: academic year 2011 to 2012; March 2013

- The proportion of children crossing local authority boundaries to attend school.

Assumptions in each area were chosen with the aim of representing both a relatively conservative scenario and one which might lead to additional pressure on school places in some localities. The range of scenarios covered was not intended to be in any way exhaustive, but designed to highlight aspects of roll projection modelling that should be concentrated on in future work. Importantly, the model used does not attempt to account for the impact of opening or shutting schools or changes to their popularity. In reality, changes in the quantity, type and perceived quality of provision can have large impacts on roll numbers.

In total, fifteen projection variants were produced – the result of applying different permutations of the following assumptions in the modelling process:

Take-up of provision outside of London state-funded schools

Two different methods for projecting the number of children in the population attending a London state-funded school were used:

- Assume a constant proportion of the population in a given area of residence would not attend a London state-funded school.
- Assume a constant number would not take up provision in a London state-funded school, i.e. regardless of changes to the population, the number taking up alternative provision would not change.

Future patterns of cross-border mobility

Two scenarios of future cross-border mobility were incorporated:

- For residents in each local authority, the **proportion** attending schools in each destination authority remained constant.
- For each local authority of residence, the **number** of children attending schools in each destination authority remains constant – with the exception of the home authority. The result of this assumption is that, generally, net exporters of pupils will see increased pressure on their own rolls as their population grows and the proportion of children attending school in other boroughs reduces. Likewise, net importers will see reduced pressure on their own roll as the number of children travelling for school from other authorities does not increase over time.

Projected London population

All population variants were based on the GLA 2012 round of borough-level demographic projections. In this round there are currently two publicly available projection variants. The first is the SHLAA based projection, which links projected population to development identified in the 2009 Strategic Housing Land Availability Assessment (SHLAA). The second is the Trend projection, in which population is projected using only recent trends in fertility, mortality and migration. The results for the two models vary greatly for individual boroughs, with the SHLAA model yielding higher projections for some and the Trend for others. These projections are discussed in detail in a GLA Update³. Three variants were used in the analysis:

³ GLA Intelligence Update 05-2013, GLA 2012 Round Population Projections; February 2013

- The Low population scenario was generated by taking the lower of the SHLAA and Trend projections for each local authority.
- The High population scenario was generated by taking the higher of the SHLAA and Trend projections for each local authority.
- The Medium projection was produced by taking the average of the values from the SHLAA and Trend projections.

Ratio method

As an additional test, projections were run using a simpler projection method. The ratio of year 7 pupils on roll in each local authority to the number of eleven year old children in its population for 2012 was calculated. This ratio was then applied to projected population to produce roll projections. This is a simplified version of one of the existing methodology options employed by the GLA. It is included here to provide a benchmark for the impact of changing methodology in the future. No cross-border migration data is used in this model. Three sets of these projections were produced varying only in the population projection used.

Results

Roll projections were produced using:

- Two different methods for estimating the number of pupils attending state-funded schools.
- Two different methods of assigning pupils between local authorities.
- Three different sets of population projections; to give twelve sets of projections.

Additionally projections were run using a simple ratio method for each set of population projections to give a total of fifteen projections.

The full results of the projections can be found in the accompanying Excel workbook. Because of the large number of variants, a key is used to identify them in graphs and tables. This key is shown below.

Cross border mobility assumption	
M1	For residents in each LA, assume constant proportion attend school in each destination authority
M2	For residents in each LA, assume constant number attend school in each destination authority, excluding home borough
Ratio	Assume the ratio of a local authority's age 11 population to year 7 roll remains constant
Alternative provision take-up assumption	
S1	Assume a constant proportion of the population in an area of residence do not attend London state-funded schools
S2	Assume a constant number of the population in an area of residence do not attend London state-funded schools
Population variants	
Low	For each local authority uses lowest of SHLAA or Trend projection
Medium	An average of the values in the SHLAA and Trend projections
High	For each local authority uses highest of SHLAA or Trend projection

Projected rolls

The accompanying Excel workbook contains a worksheet entitled “Borough results” which allows users to view all projection variants for a chosen borough or for Greater London by selecting its name from a drop-down list.

All variants project strong growth in Year 7 rolls for Greater London as a whole. By 2022 the projected roll ranged between a low of 86,600 and a high of 92,300, growth of 10,200 and 15,900 respectively from 2012. This growth is equivalent to an increase of between 340 and 530 forms of entry. In all projections the roll is projected to fall to a low in 2014 before beginning to rise (Figure 1).

The median value of the projected 2022 roll across all variants was calculated for each local authority (see Table 1). In all cases except Haringey (Figure 3) the median projection was for the roll to grow relative to 2012. Barking & Dagenham (Figure 2) showed the highest median growth with an increase of 846 pupils, or 38.8%, over the 2012 roll. Haringey saw a projected fall of 135 pupils, or 6.2%.

The spread of projected rolls between projection variants differed greatly between local authorities (see Table 2). At 2022, Greenwich (Figure 4) showed the largest (641) spread between highest and lowest projected rolls and Hackney showed the smallest (79). Greenwich also saw the highest single projection of growth, with one variant projecting a rise of 1,026 pupils, or 47.3%.

Figure 1 Greater London, projected total year 7 roll

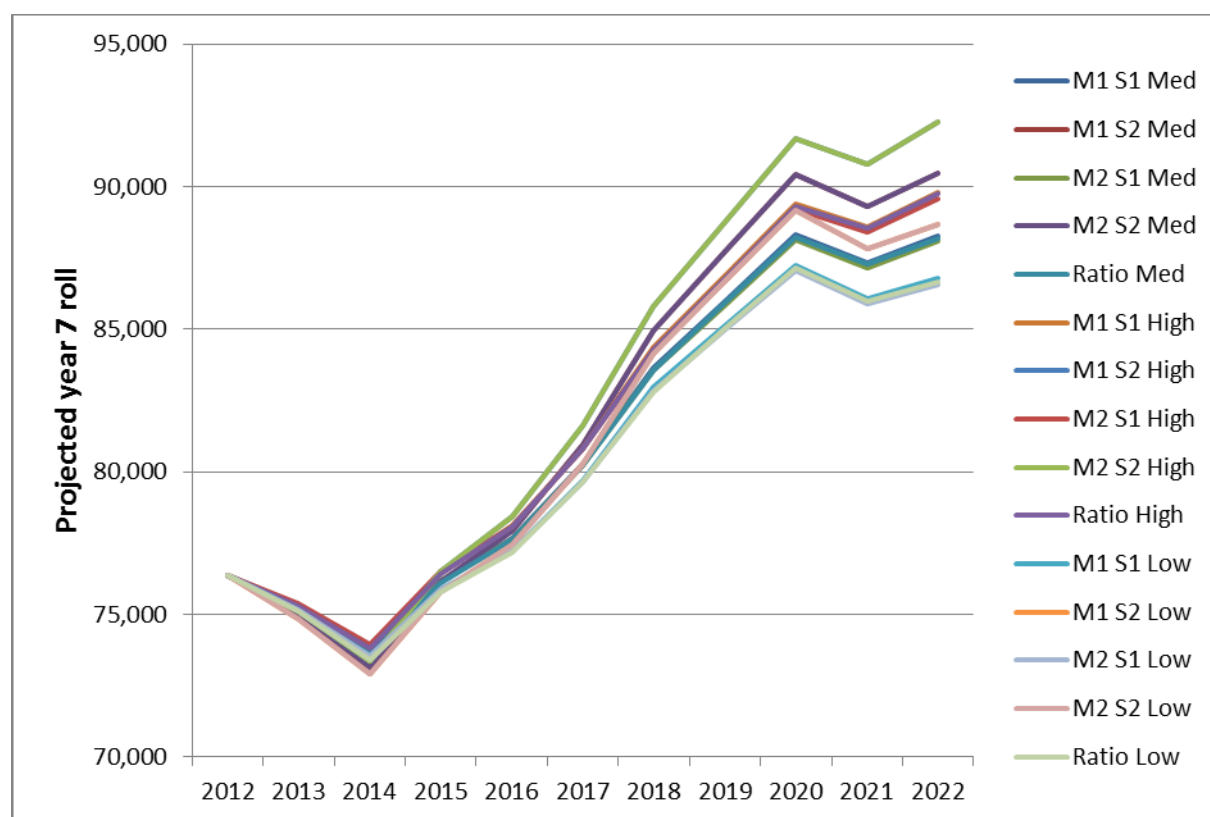


Figure 2 Barking and Dagenham, projected total year 7 roll

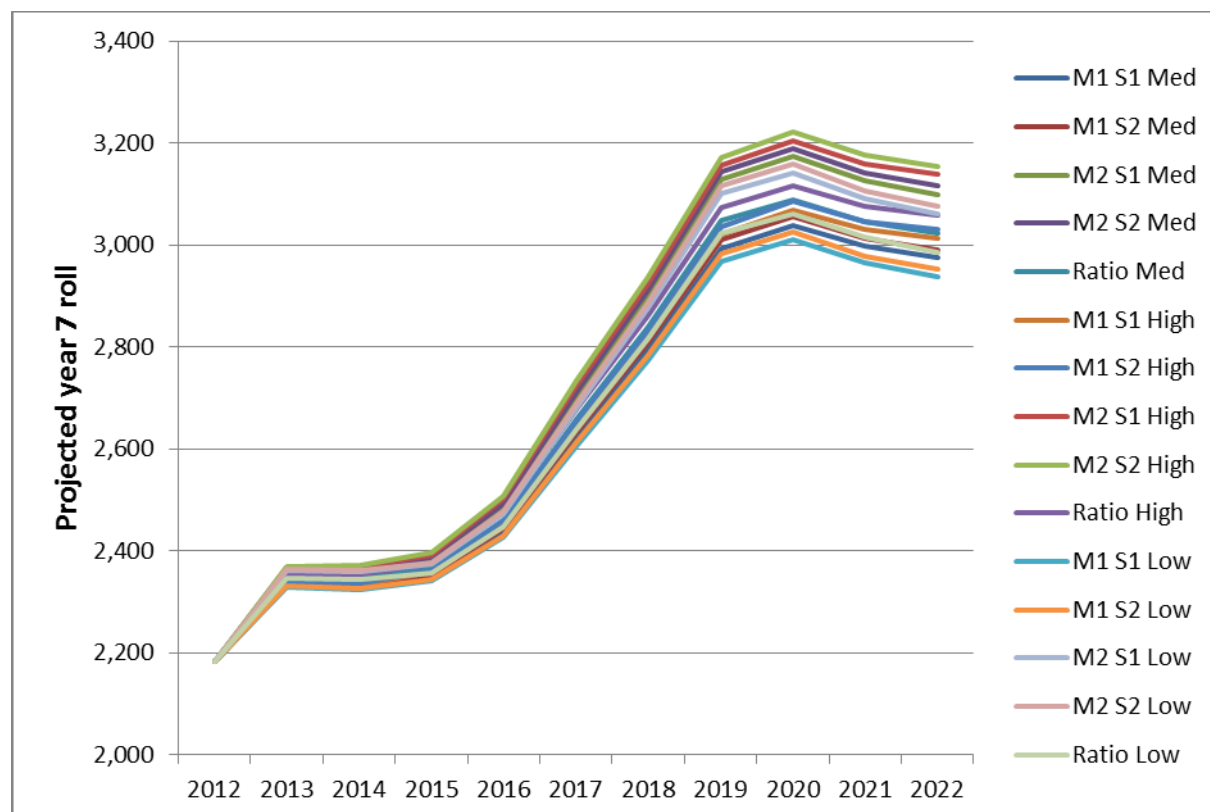


Figure 3 Haringey, projected total year 7 roll

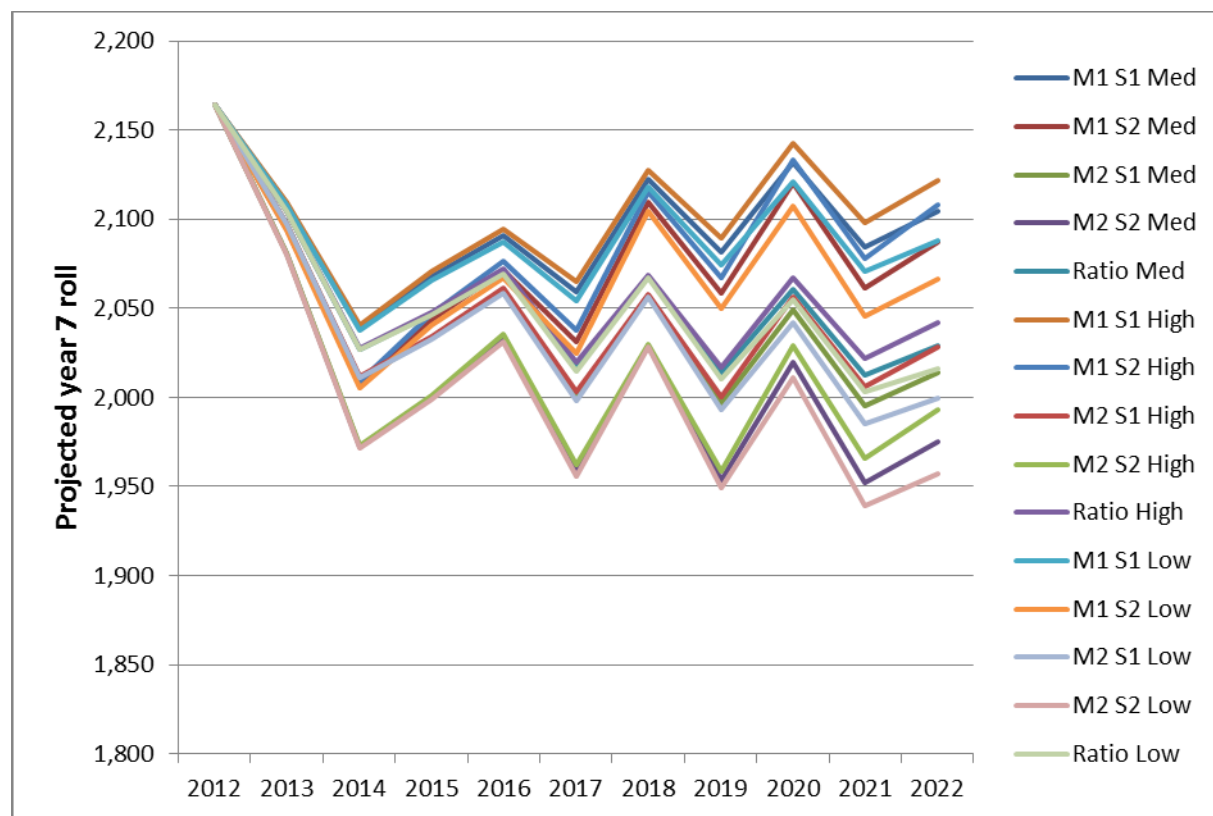


Figure 4 Greenwich, projected total year 7 roll

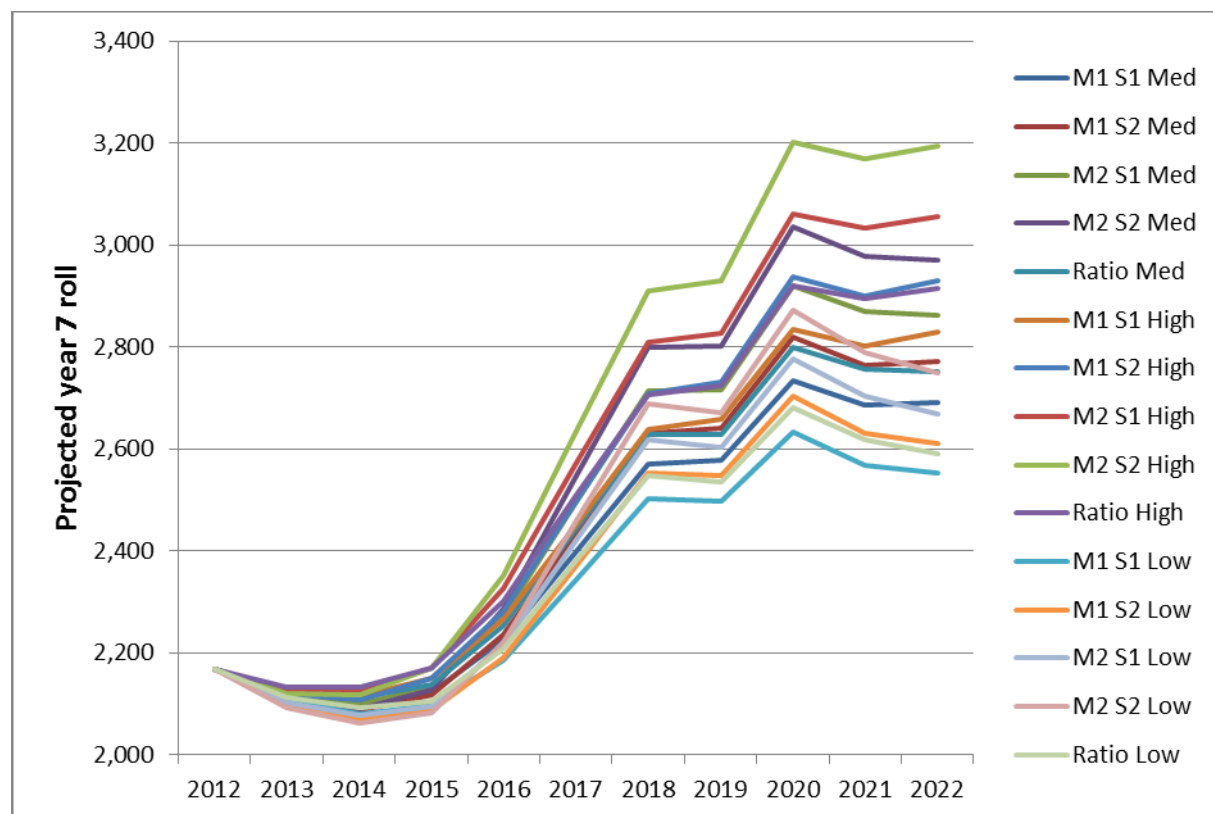


Table 1 Median year 7 projected rolls for 2022

Local authority	2012 roll	Median projected roll, 2022	Median growth 2012 to 2022	
			Number	Percentage
Camden	1,426	1,439	13	0.9%
Kensington & Chelsea	739	807	68	9.2%
Westminster	1,576	1,692	116	7.4%
City of London	0	0	0	--
Hackney	2,059	2,287	228	11.1%
Hammersmith & Fulham	1,355	1,620	265	19.5%
Haringey	2,164	2,029	-135	-6.2%
Islington	1,463	1,692	229	15.7%
Lambeth	1,948	2,165	217	11.2%
Lewisham	2,413	2,797	384	15.9%
Newham	3,509	3,780	271	7.7%
Southwark	2,404	2,837	433	18.0%
Tower Hamlets	2,526	3,149	623	24.7%
Wandsworth	1,650	2,118	468	28.3%
Barking & Dagenham	2,184	3,030	846	38.8%
Barnet	3,603	4,282	679	18.9%
Bexley	3,288	3,410	122	3.7%
Brent	2,953	3,227	274	9.3%
Bromley	3,356	3,896	540	16.1%
Croydon	3,609	4,326	717	19.9%
Ealing	2,724	3,215	491	18.0%
Enfield	3,613	4,115	502	13.9%
Greenwich	2,168	2,770	602	27.8%
Harrow	2,088	2,307	219	10.5%
Havering	2,934	3,298	364	12.4%
Hillingdon	3,120	3,488	368	11.8%
Hounslow	2,564	3,168	604	23.6%
Kingston upon Thames	1,521	1,871	350	23.0%
Merton	1,457	1,912	455	31.2%
Redbridge	3,300	3,873	573	17.3%
Richmond upon Thames	1,375	1,773	398	29.0%
Sutton	2,715	3,152	437	16.1%
Waltham Forest	2,573	3,213	640	24.9%
Greater London	76,377	88,679	12,302	16.1%

Table 2 Maximum, minimum and range of projected growth in rolls 2012 to 2022

Local authority	2012 total roll	2022		
		Relative to 2012		
		Max growth	Min growth	Range
Camden	1,426	96	-15	111
Kensington & Chelsea	739	145	25	120
Westminster	1,576	176	78	98
City of London	0	19	0	19
Hackney	2,059	273	194	79
Hammersmith & Fulham	1,355	353	213	140
Haringey	2,164	-42	-207	165
Islington	1,463	293	174	119
Lambeth	1,948	281	172	109
Lewisham	2,413	461	325	136
Newham	3,509	409	141	268
Southwark	2,404	534	360	174
Tower Hamlets	2,526	719	531	188
Wandsworth	1,650	713	388	324
Barking & Dagenham	2,184	970	754	216
Barnet	3,603	868	556	311
Bexley	3,288	362	14	348
Brent	2,953	355	217	139
Bromley	3,356	689	437	251
Croydon	3,609	890	638	252
Ealing	2,724	658	397	261
Enfield	3,613	712	328	383
Greenwich	2,168	1,026	385	641
Harrow	2,088	334	159	175
Havering	2,934	461	279	182
Hillingdon	3,120	504	252	252
Hounslow	2,564	830	418	412
Kingston upon Thames	1,521	463	272	191
Merton	1,457	653	337	316
Redbridge	3,300	813	378	435
Richmond upon Thames	1,375	628	316	311
Sutton	2,715	619	260	360
Waltham Forest	2,573	794	537	257
Greater London	76,377	15,888	10,192	5,697

Impact of changing individual assumptions

The multiple variants allow the impact on the projections of each assumption to be quantified. For example, the impact of the different assumptions about the take-up of provision outside of the London state-funded roll (*S1* and *S2* in our notation) can be estimated by comparing pairs of projections that vary only in this one assumption. To create an indication of the degree of sensitivity of a borough's projected roll to any one assumption the mean impact (at 2022) of changing between individual assumptions was calculated across all variants. The results of these calculations give an at-a-glance

indication of the sensitivity of each local authority's roll to changes in the assumptions in each of: cross-border mobility, take-up of alternative provision, and population growth (Table 3)

For Greater London, we can see that changing between the *S1* and *S2* gives rise to an increase of 2,290 in the projected roll. This represents the mean impact of changing between the assumptions that a constant proportion of the population will not take-up a place at a London state-funded school, and that a constant number will not do so. As the age 11 population is rising, *S2* equates to a reducing proportion of children taking up places outside of the London state-funded system over time, hence a higher projected roll for London.

Switching between Low and High population variants gives a mean increase of 3,262 in the projected roll. This case also makes for a good illustration of how individual assumptions interact with each other. The difference in population between the two variants is 3,586. For *S1* variants, this translates into a difference on roll of 3,024 or 16% of the extra population assumed to take-up provision outside of London's state-funded schools. For *S2* variants the difference in roll is 3,586 – all of the additional population appearing on roll in London state-funded schools.

Changing the assumption regarding cross border mobility from *M1* to *M2* – i.e. from a constant proportion to constant number attending schools outside of their home borough - we see a mean change in the projected roll of only 101. This is to be expected as this assumption affects the distribution of pupils across London rather than the total number of pupils. That there is a difference at all is due to a small change in the number of pupils travelling in to schools from outside of London.

Among individual boroughs, there is a large variation in the effect of each assumption on the projected roll. The effect of changing from the Low to High population assumption for each borough is shown in Figure 5. Greenwich shows the highest sensitivity to the change with the impact on the projected roll being 350 pupils. The next highest differences are in Enfield and Redbridge at 288 and 280, respectively. These are boroughs where the difference between the SHLAA- and Trend-based population projections is greatest. In Greenwich's case, the SHLAA projection is very much higher than the Trend because of the very large scale of new housing development included in the projections. For Redbridge and Enfield, the Trend projection is the higher as recent rises in population outstrip the level of development included in the SHLAA model.

Figure 6 shows the range of impact of changing assumptions of take-up of provision outside of London state-funded schools from one in which a constant proportion of the population will do so to one that implies the proportion will decline over time. Here the greatest impacts are seen in Richmond upon Thames, Wandsworth and Barnet, with increases in projected rolls of 225, 210, and 186 respectively. These are boroughs that couple high proportions of children attending non-state-funded provision with relatively high projected increases in the population. For some boroughs the effect is negligible, in these cases either the take-up rate of alternative provision is low or population growth is low. Haringey shows a negative impact of changing the assumption. This is a result of the projected fall in the population. In this case, holding the number taking up alternative provision constant leads to an increasing proportion of the population doing so over time.

Figure 7 shows the spread of impact on projected rolls of moving from a model of cross-border mobility, whereby for residents of any local authority, the proportion attending a school in each possible destination authority remains constant (*M1*), and one where the number travelling out of borough for school remains constant (*M2*) - with any growth in population having to be accommodated by the home borough. Here the effects vary from large increases in the projected roll to large decreases. The boroughs that see uplifts tend to be net exporters of pupils and those that see decreases are net

importers. The extremes are occupied by Greenwich and Bexley, +186 and -189 respectively. Greenwich is a large exporter of pupils to Bexley and is also projected to see a large increase in population. It is this combination that makes both Greenwich and Bexley sensitive to the assumptions about changing patterns of cross border mobility. The effect of changing the assumption is to toggle between a state where a fixed proportion of the growing population in Greenwich will take up school places in Bexley, and another where the number of Greenwich-based pupils in Bexley remains fixed, and all additional growth in Greenwich's population is catered for within its own schools.

Table 3 Sensitivity of projected rolls to individual assumptions

Local authority	2012 roll	Median 2022 projection	Mean impact changing from M1 to M2	Mean impact changing from S1 to S2	Mean impact changing from Low to High population
Camden	1,426	1,439	-70	9	27
Kensington & Chelsea	739	807	-34	45	44
Westminster	1,576	1,692	-45	42	8
City of London	0	0	13	4	1
Hackney	2,059	2,287	34	38	6
Hammersmith & Fulham	1,355	1,620	-18	86	33
Haringey	2,164	2,029	-101	-28	33
Islington	1,463	1,692	48	55	16
Lambeth	1,948	2,165	-6	56	6
Lewisham	2,413	2,797	47	38	41
Newham	3,509	3,780	-25	19	218
Southwark	2,404	2,837	25	64	85
Tower Hamlets	2,526	3,149	-4	58	125
Wandsworth	1,650	2,118	89	210	23
Barking & Dagenham	2,184	3,030	124	15	76
Barnet	3,603	4,282	31	186	91
Bexley	3,288	3,410	-189	12	139
Brent	2,953	3,227	-20	45	58
Bromley	3,356	3,896	-57	95	97
Croydon	3,609	4,326	65	134	51
Ealing	2,724	3,215	77	110	71
Enfield	3,613	4,115	41	54	288
Greenwich	2,168	2,770	186	94	350
Harrow	2,088	2,307	14	51	97
Havering	2,934	3,298	-103	9	66
Hillingdon	3,120	3,488	-32	50	169
Hounslow	2,564	3,168	-67	140	207
Kingston upon Thames	1,521	1,871	-40	82	69
Merton	1,457	1,912	85	118	109
Redbridge	3,300	3,873	-58	97	280
Richmond upon Thames	1,375	1,773	-13	225	70
Sutton	2,715	3,152	-168	45	151
Waltham Forest	2,573	3,213	68	31	156
Greater London	76,377	88,679	-101	2,290	3,262

Figure 5 Impact on 2022 roll of changing from Low to High population assumption

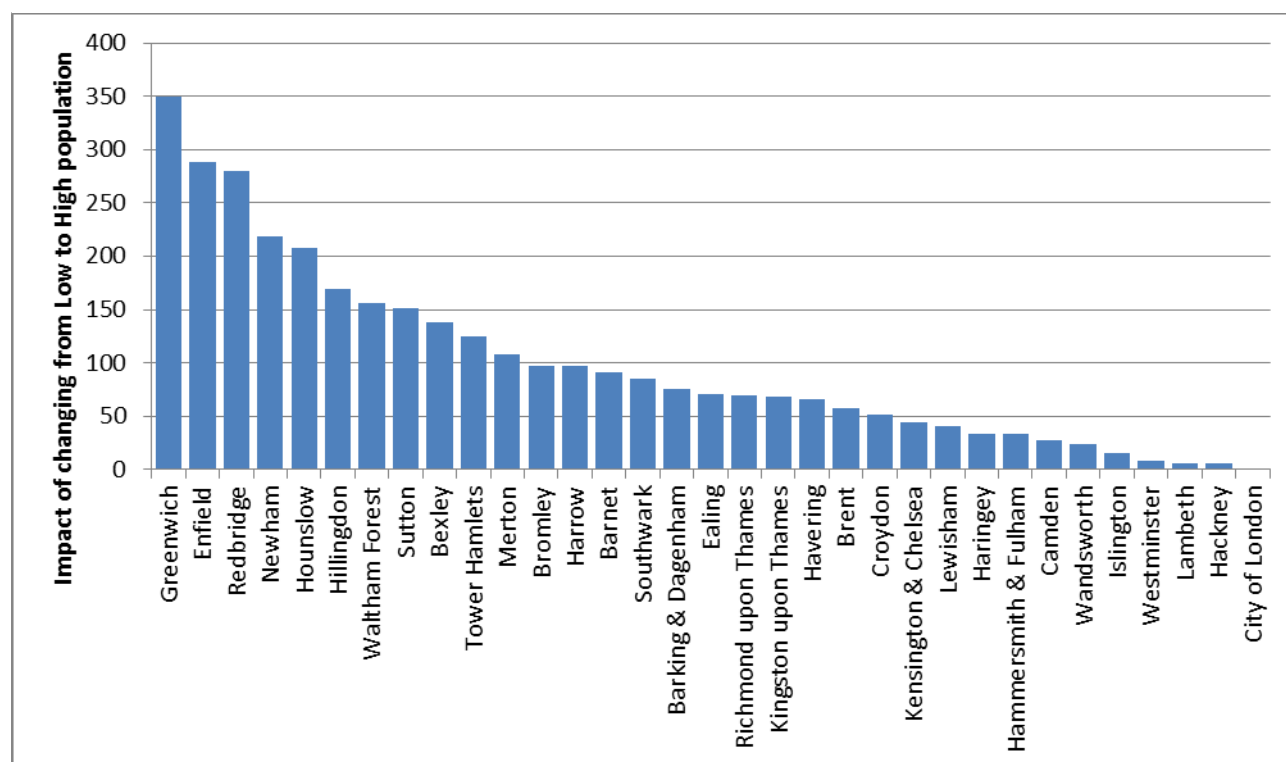


Figure 6 Impact on 2022 roll of changing alternative provision take-up assumption (S1 to S2)

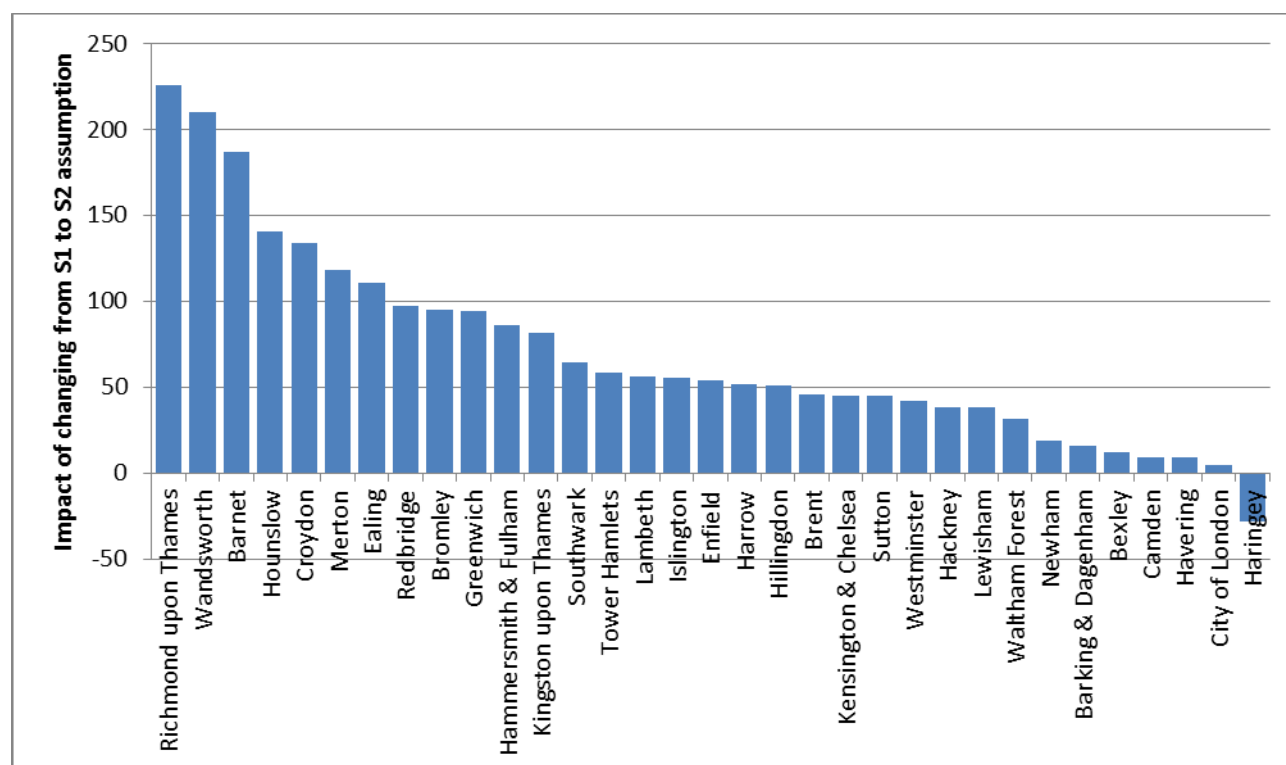
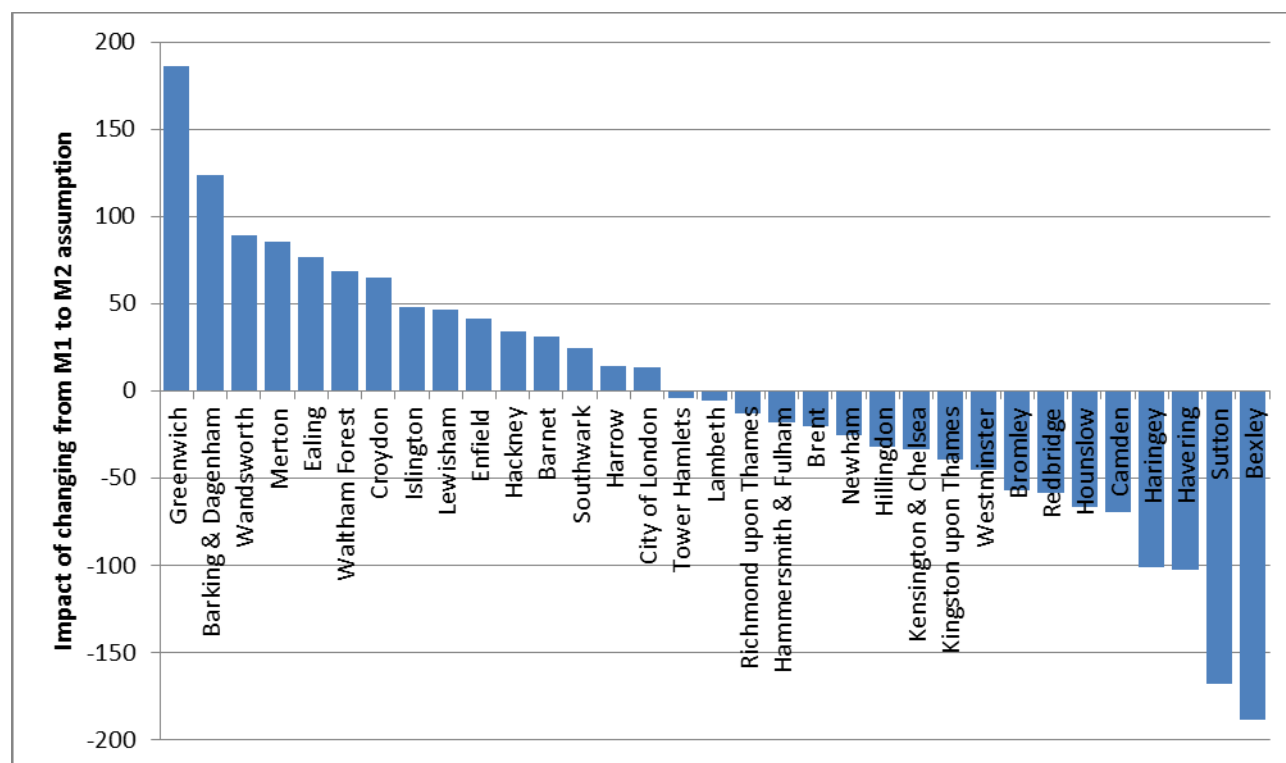


Figure 7 Impact on 2022 roll of changing cross-border mobility assumption (M1 to M2)



Conclusions

The conclusions drawn from this exercise will largely be limited to the implications for future roll projection work rather than on the outcomes of the projections themselves. These projections are not official GLA outputs and differ significantly from the projections supplied to subscribing authorities as part of the GLA's service. Later in 2013 the GLA will release pan-London roll projections using methods and models informed by this exercise.

Uncertainty and sensitivity

This exercise demonstrated that changing key assumptions within the model can have large impacts on the resulting roll projections. There exists a large range between local authorities in the degree of variation seen in their projected rolls. This would seem to offer insight into the degree of uncertainty in roll projections for a given area. However, caution should be exercised in drawing such conclusions. The assumptions and scenarios used in the exercise were not specifically optimised for this purpose. For example, the high and low extremes of the populations used were not equally likely for all boroughs, and other assumptions only considered a "worst case" scenario, e.g. a reduced proportion of children attending independent schools and not a counter-scenario where the opposite situation occurs. Careful selection of model assumptions and population variants will be necessary in order to be able to draw useful conclusions about the realistic range of future rolls.

While more careful consideration might be taken in the selection of the assumptions used, the results demonstrate that the approach of running multiple projections with different permutations of variables has the potential to provide useful information about both the likely range of future rolls and sensitivity to individual factors. There are a number of additional assumptions and variables that might be tested in this manner. However, the number of output variants will increase very rapidly as the number of variables increases. In this exercise (ignoring the three control scenarios) we looked at three different variables with two, two and three settings respectively, we arrived at twelve sets of output projections. Moving to a model with, for example, four variables with three settings for each, we would arrive at 81 different outputs. While, with a suitable implementation of the model, these would not necessarily be difficult to produce, thought would have to be given to how the results would be presented to users.

Accuracy and reliance on population projections

The methodology employed in this exercise results in projected rolls that are directly proportional to the projected population. In one sense this is desirable in that the model effectively accounts for every child present in the input population projection, which makes the results easily and intuitively understandable. However, this also means that any problems in the projected population will translate directly into problems in the projected roll. The accuracy of the method is therefore limited by the accuracy of the population projections.

The GLA's existing school rolls projection methodology has been designed to be resilient to such issues in the population – albeit at the expense of losing the direct intuitive link between population and roll numbers. While comparisons of results from the GLA's standard roll projection models are not included in this document, the differences for some local authorities are large. Where this is the case, **the GLA stresses that the existing projections provided by the GLA are likely to be more accurate than the results of this exercise.** The population data used in this exercise are considered likely to under-project the total increase in age eleven children in London.

In the case of the age eleven population, projections are very sensitive to the age-specific migration rates employed in the demographic models. The GLA has previously stated that accurate estimation of

these rates has been problematic for the 2012 round of projections used in this exercise - the difficulties arising from complications in the incorporation of the new 2011 Census baseline population. In future projection rounds the availability of detailed migration data from the 2011 Census should solve the issue. For the pan-London projections to be run this year, the exercise has highlighted the need for additional work to be carried out by the GLA to ensure the projections are suitable for this purpose and that chosen projection variants provide the best available reflection of the range of likely outcomes for individual boroughs. The GLA is confident that there exists sufficient data to generate improved projections of school age children suitable for its purposes.

To illustrate the impact that changing age specific migration rates has on the output, a supplemental set of projections have been produced using a modified version of the 2011 round SHLAA-based projections. Overall, the 2011 round of projections is less accurate than the 2012 round due to their production before the release of results from the 2011 Census. However, a great deal of work was done to optimise the migration rates used in this round of projections with a focus on improving projections of school-age children and the proportional changes school age population are in many cases more realistic. To overcome the inaccuracy in the 2011 population, the projections for each local authority have been offset, shifted up or down by a fixed number, such that the 2011 age eleven populations match those in the 2011 mid-year estimate. The results are attached in a supplementary Excel workbook. No analysis of this data is provided here, but **authorities may find these results of interest, as for the majority of local authorities the results more closely match the official projections provided as part of the GLA's roll projection service.**

Application to future models

The GLA has begun development of a new set of roll projection models that incorporate detailed information about pupil residence and school attended. The models will operate at a much finer geographic level than is the case in this exercise and projections will be produced for every school year group rather than for only Year 7. However just as in our exercise, assumptions will have to be incorporated with regards to future population growth, take-up of alternative provision, and pupil mobility.

The change in geographic level is likely to have implications in terms of sensitivity to some variables. For instance: the exercise showed that changing our assumptions about take-up of non-state-funded provision could have large implications for the total pupils on roll. However, while this was the case when looking at the borough-level, the impact in a model working at ward level or below may be quite different. In this case, take-up of alternative provision may be concentrated in a few, relatively affluent, wards. The impact of switching between our sets of assumptions will be dictated by the level of population growth in these wards rather than in the borough as a whole. In this way the switch to the lower geography has the potential to improve the fidelity of the model.

Similarly, the impact of mobility assumptions may be quite different when applied at a lower level. The propensity of pupils to travel across borough boundaries to attend school is likely to depend strongly on their location within their borough of residence. The distribution of population change within the borough will therefore become significant for the resulting projections.

The planned models also differ from the exercise in that a larger range of school year groups will be included. For projections of primary school demand extending more than a few years forward, projected births become increasingly significant to the results (whereas they are irrelevant to projections of year 7 rolls that only extend ten years forward. Additional population variants should therefore be considered that cover a range of possible fertility scenarios.

Questions remaining

A number of issues remain unexplored at this stage that could have significant implications for future roll projection work. These include improving understanding how changes in provision (schools opening, closing; changes in status, popularity) affect rolls in a locality, and problems in estimating demand for a given school based on its current roll numbers. These are complex issues and though local planners may have an understanding of the dynamics involved in each case, it is not clear whether general approaches could be derived that would allow improvements in modelling. Any work in this direction is likely to require access to detailed application data.

Availability of data

Output data

Output data is available directly from the Greater London Authority Intelligence Unit via the contact listed at the end of this document.

Roll data

All Department for Education data used in this report is available on the DfE website at the following addresses:

<https://www.gov.uk/government/publications/schools-pupils-and-their-characteristics-january-2012>

<https://www.gov.uk/government/publications/school-capacity-academic-year-2011-to-2012>

Population data

GLA population projections can be found on the London Datastore here:

<http://data.london.gov.uk/datastore/package/gla-demographic-projections>

ONS Interim 2011-based Subnational Population Projections are available from the ONS website here:

<http://www.ons.gov.uk/ons/rel/snpp/sub-national-population-projections/Interim-2011-based/stb-2011-based-snpp.html>

