



APPENDIX 1 to ISSUE 1

BATH AND NORTH EAST SOMERSET COUNCIL

DEMOGRAPHIC AND HOUSING PAPER

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1. INTRODUCTION

- 1.1 The purpose of this review paper is to provide evidence to demonstrate the appropriate level of housing provision for the study area, Bath and North East Somerset (BANES), to provide for arising needs and demands of the population based upon projections generated by the Chelmer Housing and Population Model, which uses a demographic methodology to determine future housing provision.
- 1.2 It should be noted that in order to determine the appropriate housing requirement for BANES, it is appropriate to review the arising needs and demands of neighbouring Local Authorities, which include: Bristol City; North Somerset; and South Gloucestershire. This is due to the sub regional nature of the housing market responding to capacity issues within Bristol City.
- 1.3 The paper begins, in section 2, by setting the policy context for determining housing requirement, specifically PPS3, other circulars, official letters and the emerging Draft National Planning Framework. Followed by the Development Plan context, including the adopted and emerging RS and emerging Core Strategy. A short summary of the Development Plan position for the three neighbouring Local Authorities is also set out.
- 1.4 The next stage, section 3, presents demographic contextual data i.e. population, households, natural change and migration for the study area within the relevant period set by the Development Plan for all four authorities.
- 1.5 The paper concludes, in section 4, by summarising the projections generated by the Chelmer Housing and Population Model and the implications for the study area and neighbouring Local Authorities. The outputs of the model are included as appendices to this paper.

2. POLICY CONTEXT

National Planning Policy

2.1 National planning policy in respect of determining appropriate housing requirements is set out within Planning Policy 3: Housing. In addition, since the Coalition Government came into power in May 2010, a number of letters, statements and publications have been issued, including a draft National Planning Policy Framework, in order to provide further policy guidance to reflect the principles of the new Government. All of which are summarised below.

Planning Policy Statement 3: Housing

2.2 Paragraph 33 of PPS 3 is concerned with determining an appropriate level of housing. It identifies that a number of factors should be taken into account, which include:

- Evidence of current and future levels of need and demand for housing and affordability levels based upon:
 - Local and sub regional evidence need and demand, set out in Strategic Housing Market Assessments and other relevant market information such as long term house prices.
 - Advice from the National Housing Planning Advice Unit (NHPAU) on the impact of the proposals for affordability in the region.
 - The Government's latest published household projections and the needs of the regional economy, having regard to economic growth forecasts.
- Local and sub regional evidence of the availability of suitable land for housing using Strategic Housing Land Availability Assessments and other relevant information.

- The Government's overall ambitions for affordability across the housing market, including the need to improve affordability and increase housing supply.
- A Sustainability Appraisal of the environmental, social and economic implications, including costs, benefits and risks of development. This will include considering the most sustainable pattern of housing, including in urban and rural areas.
- An assessment of the impact of development upon existing or planned infrastructure and any new kind of infrastructure.

2.3 There are further references to the references to the role of the RSS (now the RS), these remain of importance until the RS is revoked (as explained below).

Letter of the 27 May 2010 from Secretary of State

2.4 A letter of the 27 May 2010 set out the intention of the Coalition Government to abolish Regional Strategies and explain that decisions on housing supply rest with Local Authorities with the framework of regional numbers and plans. The letter also pointed out that it was a material consideration in any decision that the LPA was taking. It should be noted that the letter gave no information on how housing supply issues were to be determined.

Letter of the 6 July 2010 from Steve Quartermain

2.5 On the 6 July a letter was sent out by Steve Quartermain, Chief Planner, to all Planning Authorities explaining that the Secretary of State had now announced the revocation of Regional Strategies. The letter also contained advice to local Authorities on issues that may arise from the revocation regarding LDFs and making decisions on applications.

- 2.6 Question 2 sets out those references to Regional Strategies in Policy Statements are no longer valid. Thus in respect of the need provide a five year supply of housing land from the bottom up approach, the advice in PPS in determining housing requirement figures is no of particular relevance.
- 2.7 Question 4 of the advice deals with planning applications and explains that authorities are to have regard to adopted DPDs, saved policies and any old style plan that has not lapsed. In addition there is a need to have regard to other material considerations including national policy.
- 2.8 In respect of determining an appropriate level of housing, question 10 explains that Local Authorities will be responsible for establishing the right level of local housing provision in their area; some may use existing housing targets in the revoked RSS others may choose to review housing targets.
- 2.9 In terms of justifying housing numbers local authorities are to continue to collect and use reliable information to justify their housing supply policies and defend them through the LDF process. They should do this in line with current policy in PPS3.
- 2.10 Question 12 deals with the use of the so called “option 1 numbers”. Authorities can base their housing targets on the level of provision put to the RS EIP, but the advice goes on to say that this should be supplemented by more recent information as appropriate. If the figures are challenged the Authorities need to be able to defend them.
- 2.11 Question 13 goes on to point out that a five year supply of deliverable land is still required.

CALA Homes (South) Limited v Secretary of State for Communities and Local Government

- 2.12 On 10 November 2010 the approved judgement on the above CALA case was given. This judgement related to a judicial review of the decision by the Secretary of State,

announced in a parliamentary statement on 6 July 2010, to revoke Regional Strategies (RS).

- 2.13 The judgement determined that the Secretary of State cannot revoke RS's in the manner in which he did. In addition the judgement also stated that the Secretary of State needs to and should have, undertaken a proper consideration of the need for Strategic Environmental Assessment in accordance with the Environmental Assessment of Plans and Programmes Regulations 2004. The Secretary of State's decision of 6 July 2010 was therefore quashed.
- 2.14 The effect of the quashing of the Secretary of State's revocation of RS's is to reinstate RS's as part of the overall development plan, which brings it back to importance in the determination of planning applications in accordance with Section 38(6) of the Planning and Compulsory Purchase Act 2004.

Letter of 10 November 2010 from Steve Quartermain

- 2.15 Following the CALA decision a further letter was sent out by Steve Quartermain, the Chief Planner, to all Planning authorities on 10 November 2010. Within this letter the courts decision is noted but reference was made to the fact that the Government still intend to revoke RSs as part of the Localism Bill and that the view that the Government wished to abolish RS's should be treated as a material consideration as set out in the letter of 27 May 2010. A clause of the proposed bill was attached.
- 2.16 On 26 November in the High Court following an application for judicial review from CALA against the Secretary of State the effect of the Statement by the Secretary of State dated 10 November 2010 as sent out by the Chief Planner was stayed until further notice. The matter was subsequently considered in the courts and the determination made that the letter can be a material consideration, but there was a need to consider in any decision what weight (if any) to give the letter.
- 2.17 The matter was again considered in the Court of Appeal and judgement was made on the 27 May 2011. The court determined that the proposal to abolish could be a

material consideration in respect of development control decisions but in respect of development plan documents being prepared by an Authority it would be unlawful for them to have regard to the proposals to abolish Regional Strategies.

- 2.18 On the basis that the letter is a material consideration, there is a need now to consider what weight should be given to the intention to abolish the RS.
- 2.19 The approach to be applied is that weight increases depending on the stage reached. The Localism Act provides for the opportunity to abolish RSs, but this can only be following a Strategic Environmental Assessment (SEA). Given the stage at present relating to the SEA, the weight to be attached can only be either no weight at all or very limited weight.

Localism Act

- 2.20 The Localism Act was introduced by the House of Commons on 13th December 2010 and given Royal Assent on 15 November 2011. The Act aims to cover numerous provisions in relation to Local Government. Reform of the planning system is just one aspect of the Act. Part 5 specifically deals with planning. There are numerous changes to development plans proposed including the abolition of RS (clause 89). The Act also sets out that saved policies from Structure Plans or other Development Plan policies made under the Town and Country Planning Act 1990 will cease to have effect.
- 2.21 In addition the Act seeks to place a duty to cooperate on local planning authorities to promote sustainable development (clause 90). This duty reinforces a feature of the planning system that has for a long time been considered to be important in the process of forward planning where development needs straddle Local Authority boundaries.

Planning for Growth – Written Ministerial Statement

- 2.22 Following the budget which set out “The Plan for Growth” a written Ministerial Statement was produced by Greg Clark dealing with Planning for Growth. The statement makes it clear that the planning system should do everything it can to help secure a swift return to economic growth. The Government’s top priority is to promote economic growth. The expectation is that the answer to development and growth should wherever possible be ‘yes’ except where this would compromise the key sustainable development principles set out in national policy.
- 2.23 The Government has proposed to introduce a strong presumption in favour of sustainable development. Local authorities are to plan positively for new development, deal promptly and favourably with applications that comply with up to date plans and national planning policies and wherever possible to approve applications where plans are absent, out of date silent or indeterminate.
- 2.24 Authorities are encouraged to press ahead with plan making and be proactive in identifying housing, business and other development needs of their areas.
- 2.25 The Statement says that in considering applications Authorities should support enterprise and facilitate housing, economic and other forms of sustainable development. The statement then lists five points that Authorities should take into account:
- (i) consider fully the importance of national planning policies aimed at fostering economic growth and employment, given the need to ensure a return to robust growth after the recent recession
 - (ii) take into account the need to maintain a flexible and responsive supply of land for key sectors, including housing
 - (iii) consider the range of likely economic, environmental and social benefits of proposals; including long term or indirect benefits such as increased

consumer choice, more viable communities and more robust local economies (which may, where relevant, include matters such as job creation and business productivity)

(iv) be sensitive to the fact that local economies are subject to change and so take a positive approach to development where new economic data suggest that prior assessments of needs are no longer up-to-date

(v) ensure that they do not impose unnecessary burdens on development.

- 2.26 In considering applications Authorities should give appropriate weight to the need to support economic recovery and that applications that secure sustainable growth are treated favourably.

Draft National Planning Framework

- 2.27 On the 25 July 2011 the Draft National Planning Framework (DNPF) was published for consultation. It is intended to replace Planning Policy Guidance and Statements currently in existence and therefore provides a good indication of future planning policy
- 2.28 In terms of determining an appropriate housing requirement, the DNPF requires local planning authorities to have a clear understanding of housing requirements in their area. It goes on to state that they should:
- prepare a Strategic Housing Market Assessment to assess their full housing requirements, working with neighbouring authorities where housing market areas cross administrative boundaries. The Strategic Housing Market Assessment should identify the scale and mix of housing and the range of tenures that the local population is likely to require over the plan period which:

- meets household and population projections, taking account of migration and demographic change;
 - addresses the need for all types of housing, including affordable housing and the needs of different groups in the community (such as families with children, older people, disabled people, service families and people wishing to build their own homes; and
 - caters for housing demand and the scale of housing supply necessary to meet this demand.
- prepare a Strategic Housing Land Availability Assessment to establish realistic assumptions about the availability, suitability and the likely economic viability of land to meet the identified requirement for housing over the plan period.
- 2.29 Paragraph 110 of the DNPf outlines that the presumption in favour of sustainable development means that Local Plans should be prepared on the basis that objectively assessed development needs should be met, unless the adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the Framework as a whole.
- 2.30 To conclude, therefore, in relation to both existing and emerging national planning policy for determining housing requirements, it is clear that housing requirements should be based upon robust demographic evidence. The Chelmer Model is a demographic based tool which uses the most recent data set available, it is a robust model which is dealt with further in section 3 and listed in **Appendix 1**.

The Development Plan

- 2.31 The Development Plan for BANES consists of the South West Regional Strategy (SWRS), adopted September 2001, and the BANES Local Plan, adopted October 2001.

- 2.32 The housing projection evidence used to inform the strategic development requirements of the September 2001 adopted SWRS was the 1996 Based Household Projections, which were derived from the 1991 Census. This information, and housing targets derived from this information, is significantly out of date. It is considered that reliance upon the housing targets in the adopted SWRS is inappropriate, particularly given more recent policy advice, notably PPS 3 and other emerging guidance.
- 2.33 The adopted SWRS set out levels of housing development for the period of 1996 – 2016. An annual average dwelling target of 3,700 for the former area of Avon was identified within Policy HO1.
- 2.34 The Joint Structure Plan for Avon was adopted in September 2002. Policy 33 requires that the following dwelling targets are achieved between the period of 1996 to 2011: BANES 6,200; Bristol 13,000; North Somerset 14,900 and South Gloucestershire 16,100.
- 2.35 More recently, the South West Regional Assembly prepared a Draft Regional Strategy (DSWRS), which was submitted to Government for examination in April 2006. The DSWRS was subject to an Examination in Public in spring/ summer 2007. After which the Panel's findings was published in January 2008. The proposed changes of the Secretary of State, which took account of the recommendations of the Panel, were published in July 2008. In September 2009, the Government Office for the South West announced further Sustainability Appraisal work was required. This work was not completed prior to the general election in May 2010, which resulted in a change of Government and with it the proposed abolition of Regional Strategies.
- 2.36 Although, the DSWRS was not formally adopted, it is appropriate to consider the dwelling requirements put forward within the Proposed Changes as this represents the most up to date strategic thinking in respect of providing for arising needs and demands. In relation to the former BANES and neighbouring Local Authorities, the following housing requirements were proposed between the period of 2006 and 2026: BANES 21,300; Bristol 36,500; North Somerset 26,750 and South Gloucestershire 32,800.

2.37 The BANES Local Plan was prepared in the context of the adopted SWRS of September 2001. As a consequence the strategic development requirements reflected that of the adopted SWRS of September 2001 but only provided for homes to 2011. Various policies in this plan have been “saved” and therefore it still comprises part of the statutory Development Plan until replaced.

2.38 More recently, the Council has commenced with the preparation of the Core Strategy, which is the subject of an examination. The Draft Core Strategy Publication Version was published for consultation in December 2010. This document seeks to deliver 11,000 dwellings, which is significantly less than the Proposed Changes. As set out above, the housing requirement of 11,000 dwellings is not considered to be robust when considering emerging policy guidance. Further more recent evidence is available, which is considered in subsequent chapters.

2.39 In terms of the neighbouring Local Authorities:

The Bristol Development Framework Core Strategy was adopted in June 2011. The housing requirement for the plan period of 2006 to 2026 is 30,600, which is less than the Proposed Changes housing requirement. The minimum housing requirement identified is 26,400 dwellings.

The North Somerset Core Strategy Publication Version was published in July 2011 and examined in November 2011. The report of the Inspector is awaited. The housing requirement for the plan period of 2006 to 2026 is 14,000, which is less than the Proposed Changes housing requirement.

The South Gloucestershire Core Strategy including Post Submission changes is due to be considered by the Council in December 2011. The housing requirement for the plan period of 2006 to 2026 is 21,500 dwellings, which again is less than the Proposed Changes housing requirement.

3. DEMOGRAPHIC CONTEXT

3.1 The chapter presents demographic contextual data (i.e. population, households, natural change and migration) for the study area of BANES and neighbouring authorities including Bristol City, North Somerset and South Gloucestershire within the relevant period set by the Development Plan.

Office for National Statistics (ONS) Subnational Population Projections (SNPP)

3.2 The SNPP for BANES has consistently projected a population growth in the order of 1,000 people a year from 2006 to 2026 (20 years) from the 2004 Based (Revised) projections, which is a significant increase when compared to the annual average between 1996 and 2006 (20 years) is less than half of the recent average. The latter projection (2008 Based) anticipates a population increase of 27,000 between 2006 and 2026.

Table 1: ONS Population Estimates and Projections for BANES Council

	1996	2001	2006	2011	2016	2021	2026	1996-2006	2006-2026
2008 Based	163.6	169.2	173.2	182.1	187.7	193.2	200.2	9600/ 960 pa	27000/1350pa
2006 Based	163.6	169.2	175.6	184.2	191.4	198.6	206.4	12000/ 1200 pa	30800/1540pa
2004 Based (Revised)	163.6	169.2	175.9	181.7	186.6	191.5	196.8	12300/1230 pa	20900/1045pa
2003 Based	163.6	169.2	173.4	177.3	180.5	183.8	187.5	9800/980 pa	14100/705pa

Source: Office for National statistics

3.3 The SNPP for Bristol City identify that the annual average growth in population has increased when compared with subsequent data releases since the 2003 Based SNPP. The amount of growth projected in 2008 between 2006 and 2026 is four times the figure projected in 2003.

3.4 Historically, between 1981 and 2006, growth is approximately six times less than that anticipated over the next 20 year period of 2006 to 2026.

**DEMOGRAPHIC AND HOUSING REVIEW PAPER
 BATH AND NORTH EAST SOMERSET COUNCIL**
Table 2: ONS Population Estimates and Projections for Bristol City Council

	1996	2001	2006	2011	2016	2021	2026	1996-2006	2006-2026
2008 Based	389.2	390	420.3	450.6	487	518.8	548.1	31100/ 3110 pa	127800/6390pa
2006 Based	389.2	390	410.5	440.7	469.4	495.6	519.8	21300/2130 pa	109300/5465pa
2004 Based (Revised)	389.2	390	404.2	418.1	432.1	445.5	458	15000/1500 pa	53800/2690pa
2003 Based	389.2	390	393.7	400.1	407.7	415.5	423.2	4500/450 pa	29500/1475pa

Source: Office for National statistics

3.5 The SNPP for North Somerset again identify that the annual average growth in population has increased when compared to subsequent data releases since the 2003 Based SNPP. The amount of growth projected in 2008 between 2006 and 2026 is double the figure projected in 2003.

3.6 Historically, between 1981 and 2006, growth is approximately three times less than that anticipated over the next 20 year period of 2006 to 2026.

Table 3: ONS Population Estimates and Projections for North Somerset Council

	1996	2001	2006	2011	2016	2021	2026	1996-2006	2006-2026
2008 Based	183.2	188.8	202.8	216.7	233.5	251.2	268.4	19600/1960 pa	65600/3280pa
2006 Based	183.2	188.8	201.4	216.8	233.2	250.1	266.4	18200/ 1820 pa	65000/3250pa
2004 Based (Revised)	183.2	188.8	200.5	211.9	223.5	235.2	246.1	17300/ 1730 pa	45600/2280pa
2003 Based	183.2	188.8	196.5	204.8	213.3	221.8	229.7	13300/ 1330 pa	33200/1600pa

Source: Office for National statistics

3.7 The SNPP for South Gloucestershire again identify that the annual average growth in population has increased when compared to subsequent data releases since the 2003 Based SNPP. The amount of growth projected in 2008 between 2006 and 2026 is approximately one third more than the figure projected in 2003.

3.8 Historically, between 1981 and 2006, growth is approximately half that anticipated over the next 20 year period of 2006 to 2026.

Table 4: ONS Population Estimates and Projections for South Gloucestershire Council

	1996	2001	2006	2011	2016	2021	2026	1996-2006	2006-2026
2008 Based	233	246	257.5	268.9	283.1	298.2	313.6	24500/ 2450pa	56100/2805pa
2006 Based	233	246	254.4	266.4	280	294.3	308.1	21400/ 2140 1070pa	53700/2685pa
2004 Based (Revised)	233	246	255.8	267.2	278.9	290.7	301.5	22800/ 2280 pa	45700/2285pa
2003 Based	233	246	252.9	262.7	272.2	281.4	289.7	19900 1990pa	36800/1840pa

Source: Office for National statistics

Department of Community and Local Government (CLG) Subnational Household Projections (SNHP)

3.9 The SNHP for BANES has consistently projected household growth in excess of 650 per annum between 2006 and 2026 (20 years). Given that the Core Strategy suggests a housing requirement of 11,000 dwellings, which is significantly less than the total number of households projected in this period, there is immediate concern that all arising households would not be provided for.

Table 4: CLG Household Estimates and Projections for BANES Council

	1981	1991	2001	2006	2011	2016	2021	2026	1981-2006	2006-2026
2008 Based		67	71	72	76	80	84	88		16,000/800pa
2006 Based	62	67	71	74	79	84	89	93	12,000/480pa	19,000/950pa
2004 Based (Revised)	62	67	71	74	79	83	87	91	12,000/480pa	17,000/850pa
2003 Based	62	67	71	74	77	80	84	87	12,000/480pa	13,000/650pa

Source: CLG

3.10 The SNPP for Bristol has consistently projected household growth in excess of 1,450 per annum, rising to 3,600 dwellings per annum within the latest 2008 Based data. As with BANES, given that the adopted Core Strategy includes a housing requirement of 30,600, which is significantly less than the total number of households projected in this period, there is immediate concern that all arising households would not be provided for.

Table 5: CLG Household Estimates and Projections for Bristol City Council

	1981	1991	2001	2006	2011	2016	2021	2026	1981-2006	2006-2026
2008 Based		163	165	177	195	214	232	249		72,000/3600pa
2006 Based	154	163	165	178	194	211	227	241	24,000/960pa	63,000/3150pa
2004 Based (Revised)	154	163	165	178	186	197	207	217	24,000/960pa	39,000/1950pa
2003 Based	154	163	165	171	178	186	193	200	17,000/680pa	29,000/1450pa

Source: CLG

3.11 The SNPP for North Somerset has consistently projected household growth in excess of 1,200 per annum, rising to 1,800 households per annum within the latest 2008 release. The Core Strategy proposed dwelling requirement of 14,000 is significantly less than the total number of household projected in this period. Again there is concern that the arising needs and demands of household will not be provided for.

Table 6: CLG Household Estimates and Projections for North Somerset Council

	1981	1991	2001	2006	2011	2016	2021	2026	1981-2006	2006-2026
2008 Based		72	80	86	94	103	113	122		36,000/1800pa
2006 Based	61	72	80	87	95	104	114	123	26,000/1040pa	36,000/1800pa
2004 Based (Revised)	61	72	80	87	94	102	109	116	26,000/1040pa	29,000/1450pa
2003 Based	61	72	80	85	91	97	103	109	24,000/960pa	24,000/1200pa

Source: CLG

3.12 The SNPP for South Gloucestershire has consistently projected household growth in excess of 1,350 per annum. For the past three data releases, growth has stabilised at approximately 1,650/ 1,600 per annum. The Core Strategy proposed housing requirement of 21,500 dwellings is significantly less than the projected growth in households of 32,000. There is concern therefore that arising need and demands of the arising household will not be accommodated within South Gloucestershire.

**DEMOGRAPHIC AND HOUSING REVIEW PAPER
 BATH AND NORTH EAST SOMERSET COUNCIL**
Table 7: CLG Household Estimates and Projections for South Gloucestershire Council

	1981	1991	2001	2006	2011	2016	2021	2026	1981-2006	2006-2026
2008 Based		86	99	105	112	120	129	137		32,000/1600pa
2006 Based	71	86	99	105	113	121	130	138	34,000/1360pa	33,000/1650pa
2004 Based (Revised)	71	86	99	105	114	123	131	138	34,000/1360pa	33,000/1650pa
2003 Based	71	86	99	105	112	120	126	132	34,000/1360pa	27,000/1350pa

Source: CLG

ONS Estimates and Projections of Natural Change

3.13 Natural change is one of the inputs of population change. The natural change statistics for all four Local Authorities that an element of the population increase does stem from natural population change as set out in earlier tables.

Table 9: ONS Natural Change Estimates and Projections BANES Council

	01/ 02	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12	16/ 17	21/ 22	26/ 27
2008 Based	0	0	-100	-100	200	200	200	200	200	200	300	400	500	500
2006 Based	0	0	-100	-100	200	200	200	200	300	300	400	500	600	600
2004 Rev Based	0	0	-100	-100	100	100	100	100	100	100	100	200	300	300
2003 Based	0	0	-100	100	100	100	0	0	0	0	100	200	200	100

Source: ONS

Table 10: ONS Natural Change Estimates and Projections Bristol City Council

	01/ 02	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12	16/ 17	21/ 22	26/ 27
2008 Based	800	700	100	1300	1700	1900	2300	2700	2600	2800	3000	3200	4100	4800
2006 Based	700	1000	1300	1700	1900	2300	2700	2400	2600	2900	3200	3400	4100	4400
2004 Rev Based	700	1000	1300	1700	1900	1600	1700	1800	1900	2000	2100	2200	2800	3100
2003 Based	700	1000	1300	1700	1400	1500	1500	1600	1600	1700	1800	1900	2300	2500

Source: ONS

Table 11: ONS Natural Change Estimates and Projections North Somerset Council

	01/ 02	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12	16/ 17	21/ 22	26/ 27
2008 Based	-300	-400	-300	-200	-200	0	0	200	200	100	100	200	300	300
2006 Based	-400	-300	-200	-200	0	0	200	0	100	100	200	200	300	400
2004 Rev Based	-400	-300	-200	-200	0	-100	-200	-200	-200	-200	-200	-200	-100	-100
2003 Based	-400	-300	-200	-200	-200	-200	-300	-300	-300	-300	-300	-200	-200	-300

Source: ONS

Table 12: ONS Natural Change Estimates and Projections South Gloucestershire Council

	01/ 02	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12	16/ 17	21/ 22	26/ 27
2008 Based	900	800	800	900	1000	1000	1000	1200	1000	1100	1100	1100	1300	1500
2006 Based	800	800	900	1000	1000	1000	1200	1100	1100	1200	1200	1200	1300	1400
2004 Rev Based	800	800	900	1000	1000	900	900	800	800	800	800	800	900	1000
2003 Based	800	800	900	1000	900	900	800	800	700	700	700	800	800	800

Source: ONS

ONS Estimates of Net Migration

3.14 Net migration is one of the inputs of population change. Tables 13, 14, 15 and 16 identify levels of migration since 2000.

3.15 When examining the annual average figures for BANES, over the past ten years net migration has been in excess of 1,060 people. More recently over the last five years the annual average has increased to 1,280 people per annum.

Table 13: ONS Estimate of Net Migration and Other Change BANES Council

	2000- 2001	2001- 2002	2002- 2003	2003- 2004	2004- 2005	2005- 2006	2006- 2007	2007- 2008	2008- 2009	2009- 2010	Annual Average	
											2005- 2010	2000- 2010
Net Migration	600	1000	900	600	1100	300	2200	1800	200	1900	1280	1060

Source: ONS

3.16 When examining the annual average figures for Bristol, over the past ten years net migration has been in excess of 3,260 people. More recently over the last five years the annual average has increased to 4,140 people per annum.

Table 14: ONS Estimate of Net Migration and Other Change Bristol City Council

	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	Annual Average	
											2005-2010	2000-2010
Net Migration	-1200	-300	1200	3900	8300	3700	4800	2800	4300	5100	4140	3260

Source: ONS

3.17 When examining the annual average figures for North Somerset, over the past ten years net migration has been in excess of 2,530 people. More recently over the last five years the annual average has increased to 2,740 people per annum.

Table 15: ONS Estimate of Net Migration and Other Change North Somerset Council

	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	Annual Average	
											2005-2010	2000-2010
Net Migration	1400	2000	2700	2500	3000	3000	3200	2800	1900	2800	2740	2530

Source: ONS

3.18 When examining the annual average figures for South Gloucestershire, over the past ten years net migration has been in excess of 1,030 people. More recently over the last five years the annual average has increased to 820 people per annum.

Table 16: ONS Estimate of Net Migration and Other Change South Gloucestershire Council

	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	Annual Average	
											2005-2010	2000-2010
Net Migration	300	1500	1100	1900	1400	1100	900	-100	800	1400	820	1030

Source: ONS

ONS Projections of Net Migration

3.19 Migration projections, which form part of the SNPP, are calculated using migration propensities by age from one area to another. The data is summarised in Tables 17, 18, 19 and 20.

3.20 Table 17 identifies that if recent propensities are to be maintained within BANES, it is projected that annual net migration could be expected to reach 1,100 from 2026 onwards. Throughout the plan period it is not projected to fall below 700 people per annum.

Table 17: ONS Migration Estimates and Projections (Annual Figures) BANES Council

	2006	2011	2016	2021	2026
2008 Based		1200	700	700	1100
2006 Based		1300	900	800	1100
2004 Based (Revised)	1400	900	800	700	800
2003 Based		700	500	600	600

Source: ONS

3.21 Table 18 identifies that if recent propensities are to be maintained within Bristol, it is projected that annual net migration could be expected to reach 4,900 from 2011, although it is anticipated to decline to 900 at 2026. Throughout the plan period it is not projected to fall below 900 people per annum.

Table 18: ONS Migration Estimates and Projections (Annual Figures) Bristol City Council

	2006	2011	2016	2021	2026
2008 Based		4900	2700	1200	900
2006 Based		2700	1500	500	400
2004 Based (Revised)	1500	500	-100	-500	-700
2003 Based		-500	-700	-900	-1100

Source: ONS

3.22 Table 19 identifies that if recent propensities are to be maintained within North Somerset, it is projected that the annual average net migration will be stable and achieve a minimum annual net migration figure of 3,100 throughout the plan period.

Table 19: ONS Migration Estimates and Projections (Annual Figures) North Somerset Council

	2006	2011	2016	2021	2026
2008 Based		3100	3100	3200	3100
2006 Based		3000	3000	3000	2900
2004 Based (Revised)	2600	2400	2400	2400	2300
2003 Based		1900	1900	1900	1900

Source: ONS

3.23 Finally, Table 20 identifies that if recent propensities are to be maintained within South Gloucestershire, it is projected that the annual average net migration will be consistently above 1,600, achieving 1,700 peaks within the plan period.

Table 20: ONS Migration Estimates and Projections (Annual Figures) South Gloucestershire Council

	2006	2011	2016	2021	2026
2008 Based		1700	1600	1600	1700
2006 Based		1400	1400	1500	1500
2004 Based (Revised)	1500	1400	1400	1400	1300
2003 Based		1100	1000	1000	900

Source: ONS

3.24 To conclude in respect of the demographic context, this chapter has demonstrated that the population of BANES and neighbouring Local Authorities is projected to increase at a greater rate than previous years as is the number of households. This is due to both an increase in natural change and net migration, which are both anticipated to accelerate at increased levels compared to previous years. It therefore important that sufficient housing is delivered to provide for the arising needs and demands of the population.

4. CHELMER POPULATION AND HOUSING MODEL

- 4.1 This concluding chapter summarises the projections generated by the Chelmer Population and Housing Model (Chelmer Model). The Chelmer Model is a demographic regional housing model that can produce forecasts for specific local areas. It is based on population projections methodology allowing the projection of natural changes (births and deaths) and the projection of migrants into and out of an area. The projection population (by age and gender) is converted into household projections by the application of projected household formation rates. Household projections are then calculated into dwellings by incorporating factors for vacancies and shared households.
- 4.2 The underlying data sets used in the Chelmer Model are set out in full within Appendix A. The Chelmer Model contains the latest data releases as at November 2011. In summary, the data include:
- Mid Year Population Estimates to 2010 (published by ONS);
 - 2008 Based Sub National Population Projections (published by ONS);
 - 2008 Based Sub National Household Projections (published by Department of Communities and Local Government);
 - 2010 Based National Population Projections and earlier versions (published by ONS, and previously by the Government's Actuary Department); and
 - Internal Migration Estimates by Local Authority to 2010 (published by ONS).
- 4.3 In total four differing scenarios have been tested, which include two unconstrained runs and two constrained runs. The unconstrained runs (historic demographic trends are projected forward and implications are accommodated) consist of: validation of 2008 Based population projections and continuation of baseline trends. The constrained runs (where a factor is fixed and the structure of population is modelled to be consistent) are a dwelling led run based on adopted/ emerging Core Strategy dwelling requirements; and a further dwelling led hybrid run based on the adopted Core Strategy requirement for Bristol City with the residual indigenous growth for Bristol (identified within the run of continuing baseline trends) is then apportioned

(using RS Proposed Changes proportions) on to the neighbouring authorities of BANES, North Somerset and South Gloucestershire. Each scenario is explained further below.

Validation of 2008 Based Population Projections (unconstrained)

- 4.4 This scenario forecasts the population, household and dwelling growth based on levels of net migration as projected by ONS. It essentially validates the model against the ONS 2008 Based SNHP.
- 4.5 The key figures from the model output sheets (one for each Local Authority), specifically the growth in population, labour force, household and dwellings between 2006 and 2026, are summarised in Table 21 below. The model output sheets are enclosed as Appendix B.
- 4.6 When comparing the household growth in Table 21 with the 2008 Based SNHP, identified in Tables 4, 5, 6 and 7, the projected growth in households is consistent (when rounded in 1000s).

Table 21: 2008 Based Population Projections from 2006 to 2026 for all four Local Authorities

	Population Growth	Labour Force Growth	Household Growth	Dwelling Growth
Bath and NE Somerset	27,100	13,278	16,101	16,490
Bristol City	134,700	81,336	71,994	73,352
North Somerset	67,800	26,176	35,617	36,724
South Gloucestershire	56,400	21,328	31,703	32,284
Total	286,000	142,118	155,415	158,850

Source: Appendix A

- 4.7 The output sheets identify that the annual average level of migration included within the projection is 726 for BANES, 1,909 for Bristol, 2,774 for North Somerset and 1,213 for South Gloucestershire. This broadly reflects the average migration propensities identified in Tables 17, 18, 19 and 20.

- 4.8 In order to convert the number of households into dwellings, provision for vacancies and shared dwellings has been added, which give projected dwelling growth, between 2006 and 2026 of 16,490 for BANES, 73,352 for Bristol City, 36,724 for North Somerset; and 32,284 for South Gloucestershire.
- 4.9 In addition, the Chelmer Model provides forecasts of the total labour force throughout the plan period (difference from 2006 to 2026). Based on the 2008 Based SNHP it is projected that the labour force will increase by 142,118. It is therefore projected that the LEP target of 95,000 (which admittedly is for a slightly different time period 2008 to 2030) could well be achieved.
- 4.10 As set out above, there is concern that based upon the statistics published by the Government and referred to in paragraph 33 of PPS3 in respect of determining an appropriate housing requirement, the number of dwellings required to meet the need and demands of the future population is not being provided for.

Continuation of Baseline Trends (unconstrained)

- 4.11 This scenario forecasts the population, household and dwelling growth based on five year average levels of internal migration as a well as a historical reflection of international migration. This is considered to be a robust migration assumption for projecting future migration. When combined with the most up to date demographic assumptions in the Chelmer Model, the forecast provides credible evidence of future growth if past trends are rolled forward.
- 4.12 The key figures from the model output sheets (one for each Local Authority), specifically the growth in population, labour force, household and dwellings between 2006 and 2026, are summarised in Table 22 below. The model output sheets are enclosed as Appendix C.

Table 22: Continuation of Baseline Trends Growth from 2006 to 2026 for all four Local Authorities

	Population Growth	Labour Force Growth	Household Growth	Dwelling Growth
Bath and NE Somerset	44,922	19,664	20,279	20,770
Bristol City	175,163	97,285	82,690	84,249
North Somerset	73,010	27,255	34,372	35,440
South Gloucestershire	50,603	13,164	27,951	28,464
Total	343,698	157,368	165,292	168,923

Source: Appendix C

- 4.13 The output sheets identify that the annual average level of migration included within the projection is 1,722 for BANES, 4,366 for Bristol, 2,930 for North Somerset and 1,172 for South Gloucestershire. The migration numbers for 2006 – 2011 are the actual figures from the mid-year estimates for 2007, 2008, 2009 and 2010 plus an estimate for 2011 that is based on the average migration over the five year period 2006, 2007, 2008, 2009 and 2010. This reflects the average annual migration trends as identified in Tables 13, 14, 15 and 16.
- 4.14 As set out above, for all authorities the total number of household growth is 10,000 more than the number of households projected by the 2008 Based SNHP. Indeed for BANES the household growth rises to 20,279 dwellings. The total number of dwellings required for all four authorities, once other factors such as vacancies and shared accommodation have been taken into account, is 168,923 between the period of 2006 and 2026.
- 4.15 The projections identify that labour force is anticipated to growth by 157,368 between the period of 2006 and 2026, which is an increase of circa 15,000 on the 2008 Based SNHP. Again, it is projected that the LEP target of 95,000 (which admittedly is for a slightly different time period 2008 to 2030) could well be achieved.
- 4.16 As demonstrated above, the underlying data is the most up to date available and future trends are based upon long term averages. In light of this, this figure is considered to be a robust and credible forecast of the amount of homes required to meet the arising needs of the population of BANES.

4.17 When comparing the projected number of dwellings against housing targets in the emerging Development Plan, it is clear that the Core Strategy target of 11,000 is deficient by some 10,000 dwellings. The fact that BANES is pursuing a housing requirement so far below this range should immediately raise concerns.

Adopted/ Emerging Core Strategy Dwelling Requirements (constrained)

4.18 The Chelmer Model has the facility to fix or constrain a factor (such as dwellings, households or population) and the population profile is modelled to be consistent with achieving the fixed/ constrained factor. For this particular scenario, the number of dwellings has been fixed/ constrained to follow the adopted/ emerging Core Strategy dwelling requirements, as identified in the Development Plan context. This scenario, therefore, tests the sensitivity and identifies the demographic consequences of providing for the number of dwellings put forward by each Local Authority.

4.19 The key figures from the model output sheets (one for each Local Authority), specifically the growth in population, labour force, household and dwellings between 2006 and 2026, are summarised in Table 23 below. The model output sheets are enclosed as Appendix D.

Table 23: Adopted/ Emerging Core Strategy Dwelling Requirements from 2006 to 2026 for all four Local Authorities

	Population Growth	Labour Force Growth	Household Growth	Dwelling Growth
Bath and NE Somerset (11,000)	20,095	5,050	10,739	10,999
Bristol City (30,600)	49,732	21,376	30,034	30,600
North Somerset (14,000)	21,312	-2,419	13,579	14,001
South Gloucestershire (21,500)	32,553	2,184	21,114	21,501
Total (77,100)	123,692	26,191	75,466	77,101

Source: Appendix D

4.20 As set out above, a result of providing 77,100 dwellings overall results in a significantly reduced level of household, labour force and population growth within the period of 2006 to 2026. When examining the difference in population compared with the unconstrained scenarios, the population growth has reduced by 162,308 and

220,006 respectively when compared against the 2008 Based SNHP and continuation of baseline trends. This is due to the level of net migration and natural change decreasing as a consequence of insufficient housing provision.

- 4.21 It should be noted that, if migration is not catered for there will be additional pressure on upon local housing markets. There are no mechanisms to prevent migration from occurring between areas of the UK. Restricting the supply of housing will reduce opportunities for local households to acquire homes on the open market. It is therefore important that migration is properly provided for to prevent local indigenous households from being disadvantaged.
- 4.22 In terms of the impact upon labour force within the plan period (difference from 2006 to 2026), with the Core Strategy dwelling requirements the labour force growth totals 26,191 for all four authorities. In particular, for North Somerset the labour force would be 2,419 less in 2026 than it was at 2006.
- 4.23 This dwelling provision scenario would not assist to achieve the LEP 95,000 job growth target. There would indeed be a significant shortfall. When comparing this figure with the 2008 Based SNHP and continuation of baseline trends scenario, there are 115,927 and 131,177 less people contributing towards the economy.
- 4.24 It is clear, therefore, that the positive net migration is making a significant contribution to the work force. Should the LPA fail to provide dwellings for the net additional migrants, the full economic potential of the LEP will not be achieved.
- 4.25 As demonstrated by Table 23 and commentary above, a number of detrimental consequences (in both social and economic terms) are projected to occur as a result of providing the number of dwellings identified within adopted/ emerging Core Strategies.

Hybrid Scenario (constrained)

- 4.26 Due to constraints associated with housing delivery in Bristol City and in light of the emphasis on strategic planning and cooperation, it is appropriate to consider a

scenario where the neighbouring authorities seek to accommodate residual growth that cannot be provided for within Bristol City itself.

- 4.27 This dwelling led run, entitled hybrid scenario, therefore tests the implications of providing 30,600 dwellings in Bristol City (as this figure is within the adopted Development Plan for Bristol) with the residual indigenous growth for Bristol (53,649 dwellings, which is 84,249 (from Table 23) minus 30,600 (Core Strategy dwelling requirement)) then apportioned to neighbouring authorities (using SWRS Proposed Changes proportions of growth) of BANES (26% = 13,949 additional dwellings), North Somerset (33% = 17,704 additional dwellings) and South Gloucestershire (41% = 21,996 additional dwellings) on top of the continuation of baseline trends growth identified in Table 22.
- 4.28 Clearly, a consequence of this is that the dwelling growth for those neighbouring authorities will need to increase significantly to accommodate the growth arising from Bristol City.
- 4.29 It is considered that using the SWRS Proposed Changes to identify the appropriate proportions for additional growth is a robust methodology, as the housing requirements identified within the SWRS Proposed Changes reflected sustainability and capacity considerations for the neighbouring authorities.
- 4.30 The key figures from the model output sheets (one for each Local Authority), specifically the growth in population, labour force, household and dwellings between 2006 and 2026, are summarised in Table 24 below. The model output sheets are enclosed as Appendix E.

Table 24: Hybrid Scenario 2006 to 2026

	Population Growth	Labour Force Growth	Household Growth	Dwelling Growth
Bristol City	49,732	21,376	30,034	30,600
Bath and NE Somerset	78,778	41,259	33,905	34,726
North Somerset	115,164	52,783	51,544	53,145
South Gloucestershire	106,733	48,700	49,552	50,460
Total	350,407	164,118	165,035	168,931

Source: Appendix E

- 4.31 As set out above, the total increase in population with the hybrid scenario is 350,407, which is 6,709 more than people when compared with the continuation of baseline trends projection. In terms of the impact upon the number of households and dwellings, the growth is broadly similar.
- 4.32 In terms of the impact upon labour force within the plan period (difference from 2006 to 2026), with hybrid scenario the labour force increases by 164,118. When comparing this figure with the continuation of baseline trends projection for labour force (157,368), there are 6,750 more people contributing towards the economy. This will assist to exceed the LEP targets in relation to economic growth.
- 4.33 Again, it is clear that the population growth is making a significant contribution to the work force. Should the LPA maintain the 11,000 dwelling requirement, the ability to achieve economic objectives as set out within the Core Strategy will be compromised.

5. CONCLUSION

- 5.1 This report has demonstrated that there is a clear and compelling need to review the housing requirement for BANES in light of the evidence presented.
- 5.2 As set out in Chapter 2, the existing and emerging policy context requires that up to date evidence is used to determine current and future needs and demands for housing, taking into consideration migration and demographic change.
- 5.3 The demographic context, in accordance with the policy context, is explained within Chapter 3 and identified that an increase in population of 27,000 between 2006 and 2026 for BANES is projected. Likewise the household projections identify that there will be an additional 16,000 households for BANES in the same period. This is due to an increase in anticipated levels of natural change and migration.
- 5.4 Projections generated by the Chelmer Model, which are underpinned by the data identified in the demographic context, are reviewed in Chapter 4 (with model output sheets attached as appendices). The 2008 Based SNHP run projects that a total of 16,490 dwellings are required between 2006 and 2026 and the continuation of past trends run projects that a total of 20,770 between 2006 and 2026 to provide for both indigenous population and forecast migration levels. When reviewing a dwelling led scenario to test sensitivity of providing for the level of housing growth set out within adopted an emerging Core Strategies, it is clear that there are adverse social and economic consequences of under providing dwellings to meet with arising needs and demands. Finally, it is appropriate to consider the hybrid scenario, which seeks to apportion residual indigenous growth of Bristol in neighbouring authorities, based upon the continuation of past trends, which is the most up to date and therefore and the most credible evidence in relation to projecting housing growth.

Table 9: Chelmer Population and Household Forecast (2006 to 2026): Summary of Scenarios for BANES

2006 - 2026	Population	Total Labour Force	Total Households	Total Dwellings
2008 Based SNHP	27,100	13,278	16,101	16,490
Continuation of Trends	44,922	19,664	20,279	20,770
Dwelling Led (Core Strategy)	20,095	5,050	10,739	10,999
Hybrid Scenario	78,778	41,259	33,905	34,726

Source: Appendix B, C, D, E

- 5.5 All of which leads to the compelling conclusion that based upon independent evidence the dwelling requirement of 11,000 is inadequate. It is considered that a dwelling target in the order of 35,000 should be provided in order to ensure that BANES is in the best position to meet arising needs and demands for the projected population (both indigenous and an additional element of growth arising from Bristol).



APPENDIX A

4 Underlying Data and Baseline Assumptions

Table 4.1 below provides details of the data supplied in the data library, CHELMERDATA_<AreaName>.XLS.

Table 4.1: Underlying Data Supplied with the Chelmer Model

UNDERLYING DATA SUPPLIED WITH THECHELMER MODEL	
	Source
Population estimates	Mid-year population estimates for modelled years.
Population projections	2008-based sub-national population projection for the model years.
Non-household population	2008-mid year population projections and associated CLG household projections.
Households	Total households from sub-national household projections.
Activity rates	Census 2001 and national labour force projections.
Outmigration rates	Rates of out-migration by age, gender and international/domestic migration flow.
Total migration	Total migration flows by age and gender. Constructed as sum of separate projections of scale of individual in- and out-migration flows.
International migration	Estimates constructed from mid-year population estimates and annual estimate of domestic migration. Baseline projection provided assumes future net international migration moves in line with international migration trends for the UK as a whole if the local area exhibits the same pattern of net migration as the UK. Otherwise average levels experienced over last five years are assumed to continue.
Internal migration	Historical data constructed from internal migration estimates from ONS. Projected values assume that average levels for past five years continue.
Fertility rates	Appropriate national (eg England, Scotland, Wales) population projections.
Fertility rate correction factors	Calculated from estimate of births from applying national fertility rate assumptions to local population and local births calculated from ONS mid-year population estimates, for those model periods for which there are data.
Mortality rates	Appropriate national (eg England, Scotland, Wales) population projections.
Mortality rate correction factors	Calculated from estimate of deaths from applying national mortality rate assumptions to local population and local deaths calculated from ONS mid-year population estimates for those model periods for which there are data.
Number of dwellings	Data from Census 2001 and CLG are provided for model years.
Vacancy rate	Proportion of dwellings that are vacant, from Census 2001.
Sharing rate	Proportion of dwelling stock with multiple households, Census 2001.
Sharing factor	Average number of households in shared dwellings.
Household representative rates	CLG 2008-based household projections. Rates are provided for different levels of disaggregation.



APPENDIX B

CHELMER RESULTS FOR BATH AND NE SOMERSET: SUMMARY

Appendix B

File name: C:\Chelmer\Ox\..\Results/Bath and NE Somerset_Pop_Summary.csv

Scenario n: Pop Run

Scenario d: Pop run to test 2008 Based population

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	POP	POP	POP	POP	POP	POP	POP
Migration (immigration and outmigration levels)							

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popu	169100	173100	182000	187600	193200	200200	207200	
Total Hous	164246	168139	177100	182623	188061	194851	201874	
Natural ch	116	1895	3419	3575	3302	2914	2291	
Net migrat	3777	7063	2103	1867	3485	4109	-204140	
Total Hous	168139	177100	182623	188061	194851	201874	30	
Total comn	4961	4900	4977	5139	5349	5326	5326	
Total popu	173100	182000	187600	193200	200200	207200	5356	27100
Labour forc	86675	94380	96979	98462	99953	102307	1705	13278
Total hous	72203	76454	80348	84286	88304	92525	15	16101
Dwellings (	73950	78304	82292	86325	90440	94764	15	16490

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	31020	30260	30720	31300	32940	34200	34940	547
16-24	20780	26640	30180	29700	28560	29700	31460	2211
25-34	21800	19500	22800	26100	27200	26300	25700	316
35-44	24000	24100	22100	20600	22500	25300	26400	181
45-54	23000	21900	23700	24500	22600	21400	23100	85
55-64	18400	20400	20500	20100	22000	22900	21300	94
65-70	9180	9060	10100	11440	10820	11280	12620	21
71-84	17020	16840	16800	17960	20180	21720	22580	514
85+	3900	4400	5100	5900	6400	7400	9100	1387
Total	169100	173100	182000	187600	193200	200200	207200	5356

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	15860	15520	15720	16180	16960	17680	18000	287
16-24	10740	13880	15680	15520	14940	15520	16400	1061
25-34	10700	10000	12600	14700	15300	14700	14400	146
35-44	11900	11900	10800	10300	11700	13300	13900	109
45-54	11300	10800	11700	12000	11100	10700	12000	80
55-64	9000	10000	10100	10000	10900	11400	10600	35
65-70	4360	4220	4840	5480	5260	5500	6180	9
71-84	7240	7380	7360	8120	9240	10100	10620	223
85+	1100	1400	1900	2300	2600	3000	3900	392
Total	82200	85100	90700	94600	98000	101900	106000	2342

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	15160	14740	15000	15120	15980	16520	16940	260
16-24	10040	12760	14500	14180	13620	14180	15060	1150
25-34	11100	9500	10200	11400	11900	11600	11300	170
35-44	12100	12200	11300	10300	10800	12000	12500	72
45-54	11700	11100	12000	12500	11500	10700	11100	5
55-64	9400	10400	10400	10100	11100	11500	10700	59
65-70	4820	4840	5260	5960	5560	5780	6440	11
71-84	9780	9460	9440	9840	10940	11620	11960	292
85+	2800	3000	3200	3600	3800	4400	5200	995
Total	86900	88000	91300	93000	95200	98300	101200	3014

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	7200	6880	7520	7600	8000	8240	8240	28
4-10.	13360	12820	12820	13680	14180	14780	15160	54
11-15.	10460	10560	10380	10020	10760	11180	11540	465
16-17	4440	5120	5240	5000	4880	5400	5480	768
0-17	35460	35380	35960	36300	37820	39600	40420	1315

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	10	10	9	9	9	9	187
4-10.	0	18	17	17	17	17	16	360
11-15.	0	15	14	12	13	13	12	3100
16-17	0	7	7	6	6	6	6	5120
0-17	0	49	47	45	45	45	44	8767

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1178	937	897	877	968	982	137
16-24	14509	17025	16864	16176	16612	17746	999
25-34	16293	19808	22707	23654	22861	22346	274
35-44	20583	19183	17916	19632	22104	23085	160
45-54	19236	21443	22196	20502	19412	20946	79
55-64	12635	12939	12929	14249	14549	13361	45
65-70	1731	2403	2712	2532	2671	2998	2
71-84	510	642	758	840	776	843	9
85+	0	0	0	0	0	0	0
Total	86675	94380	96979	98462	99953	102307	1705

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	13484	16091	18562	20985	23342	25762	3
Couple	39207	40628	41938	43214	44479	45967	8
Previously	19512	19735	19848	20088	20482	20796	4
Total	72203	76454	80348	84286	88304	92525	15

Comments on Scenario run

Notes:

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 0-4. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 5-9. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 10-14. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 15-19. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 20-24. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 25-29. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 30-34. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 35-39. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 40-44. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 45-49. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 50-54. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 55-59. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 60-64. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 65-69. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 70-74. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 75-79. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 80-84. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Males, age band: 85+. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 5-9. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 10-14. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 15-19. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 20-24. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 25-29. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 30-34. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 35-39. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 40-44. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 45-49. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 50-54. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 60-64. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 70-74. Net immigration assumption revised during solution because it implied negative population change.

Bath and NE Somerset period: 2036-2041, gender: Females, age band: 75–79. Net immigration assumption revised during solution because it implied negative po
Bath and NE Somerset period: 2036-2041, gender: Females, age band: 80–84. Net immigration assumption revised during solution because it implied negative po
Bath and NE Somerset period: 2036-2041, gender: Females, age band: 85+. Net immigration assumption revised during solution because it implied negative popu
Bath and NE Somerset period: 2036-2041, gender: Females, age band: 0–4. Net immigration assumption revised during solution because it implied negative popu

CHELMER RESULTS FOR BRISTOL CITY: SUMMARY

Appendix B

File name: C:\Chelmer\Ox\..\Results\Bristol City_Pop_Summary.csv

Scenario n: Pop

Scenario d: Scenario to test 2008 based population projections.

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	POP	POP	POP	POP	POP	POP	POP
Migration (immigration and outmigration levels)							

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popu	390100	413400	450400	487000	518600	548100	575600	
Total Hous	379833	403294	440365	476702	508379	537489	564719	
Natural ch	6961	16328	24520	27487	27688	26695	25817	
Net migrat	16503	20743	11819	4190	1420	538	-590498	
Total Hous	403294	440365	476702	508379	537489	564719	36	
Total comn	10106	10035	10298	10221	10611	10881	10881	
Total popu	413400	450400	487000	518600	548100	575600	10917	134700
Labour forc	226085	254219	277491	293709	307421	320922	4325	81336
Total hous	176677	195149	214718	232733	248671	263826	18	71994
Dwellings (	180010	198830	218768	237123	253362	268803	18	73352

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	73800	70740	74860	82080	90680	97160	100800	1015
16-24	56300	69860	75440	74620	72520	76040	82500	4576
25-34	65200	74300	93700	110100	114800	111700	109800	954
35-44	56600	59400	61000	66600	77800	89100	92100	427
45-54	45500	45900	51200	54400	55100	58100	66600	284
55-64	34900	38100	38900	40300	45200	48100	48000	172
65-70	17140	16560	17480	19680	19360	21120	24100	272
71-84	33360	30640	29020	29820	32940	35180	38000	1273
85+	7300	7900	8800	9400	10200	11600	13700	1944
Total	390100	413400	450400	487000	518600	548100	575600	10917

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	37820	36000	37920	41600	46200	49400	51280	488
16-24	28080	34400	37680	36800	35700	37500	40720	2199
25-34	33200	38900	50000	59100	61500	59600	58500	506
35-44	28300	30100	31700	35300	41700	47900	49400	303
45-54	22900	22700	25400	27400	28100	30100	34800	206
55-64	17500	19100	19500	20000	22400	24200	24400	87
65-70	8100	8020	8580	9700	9580	10320	11880	137
71-84	13700	12980	12920	13800	15520	16680	17920	470
85+	2000	2400	2800	3400	3900	4700	5700	528
Total	191600	204600	226500	247100	264600	280400	294600	4924

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	35980	34740	36940	40480	44480	47760	49520	527
16-24	28220	35460	37760	37820	36820	38540	41780	2377
25-34	32000	35400	43700	51000	53300	52100	51300	448
35-44	28300	29300	29300	31300	36100	41200	42700	124
45-54	22600	23200	25800	27000	27000	28000	31800	78
55-64	17400	19000	19400	20300	22800	23900	23600	85
65-70	9040	8540	8900	9980	9780	10800	12220	135
71-84	19660	17660	16100	16020	17420	18500	20080	803
85+	5300	5500	6000	6000	6300	6900	8000	1416
Total	198500	208800	223900	239900	254000	267700	281000	5993

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	18720	18880	22720	25040	27280	28320	28480	73
4-10.	31420	29920	31040	35800	39360	42340	43880	127
11-15.	23660	21940	21100	21240	24040	26500	28440	815
16-17	10200	11080	10520	10160	10160	11720	12400	1198
0-17	84000	81820	85380	92240	100840	108880	113200	2213

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	11	12	12	12	11	11	406
4-10.	0	17	16	17	17	17	17	706
11-15.	0	12	11	10	10	11	11	4528
16-17	0	6	5	5	4	5	5	6656
0-17	0	46	44	43	43	44	43	12294

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	2286	2231	2159	2159	2488	2631	257
16-24	42437	43552	43167	41826	43400	47213	2414
25-34	63454	79917	93873	97823	95153	93550	813
35-44	51912	53182	58093	67874	77781	80439	380
45-54	39724	45135	47987	48621	51291	58806	255
55-64	23025	24255	25538	28680	30147	30112	107
65-70	2525	4663	5274	5130	5633	6458	72
71-84	722	1284	1400	1596	1528	1713	27
85+	0	0	0	0	0	0	0
Total	226085	254219	277491	293709	307421	320922	4325

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	48628	60353	72739	83608	92821	101537	5
Couple	82109	88604	95375	101561	107128	112633	8
Previously	45940	46193	46604	47564	48723	49657	5
Total	176677	195149	214718	232733	248671	263826	18

Comments on Scenario run

Notes:

Bristol City period: 2036-2041, gender: Males, age band: 0-4.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 5-9.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 10-14.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 15-19.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 20-24.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 25-29.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 30-34.Net immigration assumption revised during solution because it implied negative population.
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Bristol City period: 2036-2041, gender: Males, age band: 40-44.Net immigration assumption revised during solution because it implied negative population.
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Bristol City period: 2036-2041, gender: Males, age band: 50-54.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 55-59.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 60-64.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 65-69.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 70-74.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 75-79.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 80-84.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Males, age band: 85+.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Females, age band: 0-4.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Females, age band: 5-9.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Females, age band: 10-14.Net immigration assumption revised during solution because it implied negative population.
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Bristol City period: 2036-2041, gender: Females, age band: 20-24.Net immigration assumption revised during solution because it implied negative population.
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Bristol City period: 2036-2041, gender: Females, age band: 45-49.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Females, age band: 50-54.Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Females, age band: 55-59.Net immigration assumption revised during solution because it implied negative population.

Bristol City period: 2036-2041, gender: Females, age band: 60–64. Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Females, age band: 65–69. Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Females, age band: 70–74. Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Females, age band: 75–79. Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Females, age band: 80–84. Net immigration assumption revised during solution because it implied negative population.
Bristol City period: 2036-2041, gender: Females, age band: 85+. Net immigration assumption revised during solution because it implied negative population.

CHELMER RESULTS FOR NORTH SOMERSET: SUMMARY

Appendix B

File name: C:\Chelmer\Ox\...\Results\North Somerset_Pop_Summary.csv

Scenario n: Pop

Scenario d: Scenario to test the 2008 based population projections.

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	POP	POP	POP	POP	POP	POP	POP
Migration c	immigration and outmigration levels						

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popul	188900	200600	216900	233500	251300	268400	284100	
Total Hous	185009	196831	212444	229011	246162	262676	277443	
Natural ch	7	1685	2954	3081	2639	1674	83	
Net migrati	11814	13931	13611	14066	13876	13095	.NaN	
Total Hous	196831	212444	229011	246162	262676	277443	.NaN	
Total comn	3769	4456	4489	5138	5724	6657	6657	
Total popu	200600	216900	233500	251300	268400	284100	.NaN	67800
Labour forc	101911	110269	116791	122653	128087	133684	.NaN	26176
Total house	86344	94388	103550	112900	121961	130496	.NaN	35617
Dwellings (	89027	97321	106768	116408	125751	134551	.NaN	36724

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	35760	36660	38920	41560	45020	47580	49280	.NaN
16-24	16540	18740	20080	19840	19880	21520	23220	269
25-34	21900	20800	23900	28000	29400	28600	28200	223
35-44	27300	30300	29400	28600	32300	37000	38500	148
45-54	27500	26900	30900	34100	32900	32000	35700	243
55-64	23400	28200	28800	28600	32700	35700	34500	.NaN
65-70	11020	12180	15320	17880	16980	18040	21200	.NaN
71-84	20380	21120	22680	26920	32420	35860	37700	.NaN
85+	5100	5700	6900	8000	9700	12100	15800	3694
Total	188900	200600	216900	233500	251300	268400	284100	.NaN

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	18440	18820	19900	21120	22840	24020	24960	.NaN
16-24	8560	9980	10600	10480	10460	11280	12140	138
25-34	10800	10300	12400	14700	15400	14900	14700	139
35-44	13500	15100	14500	14300	16600	19100	19800	78
45-54	13600	13300	15200	16900	16300	16000	18300	159
55-64	11600	13800	14100	13900	15800	17400	16800	.NaN
65-70	5200	5840	7460	8540	8220	8620	10220	.NaN
71-84	8700	9360	10240	12560	15180	16880	17680	.NaN
85+	1400	1700	2400	3000	3900	5100	6800	1077
Total	91800	98200	106800	115500	124700	133300	141400	.NaN

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	17320	17840	19020	20440	22180	23560	24320	65
16-24	7980	8760	9480	9360	9420	10240	11080	131
25-34	11100	10500	11500	13300	14000	13700	13500	84
35-44	13800	15200	14900	14300	15700	17900	18700	70
45-54	13900	13600	15700	17200	16600	16000	17400	84
55-64	11800	14400	14700	14700	16900	18300	17700	79
65-70	5820	6340	7860	9340	8760	9420	10980	99
71-84	11680	11760	12440	14360	17240	18980	20020	1043
85+	3700	4000	4500	5000	5800	7000	9000	2617
Total	97100	102400	110100	118000	126600	135100	142700	4272

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	8320	8720	9920	10320	11120	11520	11600	4
4-10.	15680	16060	16920	18880	19960	21280	21920	.NaN
11-15.	11760	11880	12080	12360	13940	14780	15760	.NaN
16-17	4320	4720	4640	4720	4840	5560	5760	64
0-17	40080	41380	43560	46280	49860	53140	55040	.NaN

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	10	11	10	10	9	9	.NaN
4-10.	0	19	18	18	18	17	17	.NaN
11-15.	0	14	13	12	12	12	12	.NaN
16-17	0	5	5	5	4	5	4	.NaN
0-17	0	48	46	45	44	44	42	.NaN

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1176	1337	1360	1395	1602	1660	.NaN
16-24	12253	14619	14370	14339	15339	16687	195
25-34	18823	21019	24630	25832	25126	24780	197
35-44	26679	25781	25086	28359	32502	33838	130
45-54	23605	26959	29728	28664	27913	31200	215
55-64	16513	16112	16386	18940	20288	19327	.NaN
65-70	2263	3589	4138	3865	4155	4926	.NaN
71-84	599	853	1093	1259	1162	1266	.NaN
85+	0	0	0	0	0	0	0
Total	101911	110269	116791	122653	128087	133684	.NaN

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	10743	13256	16410	19788	23034	26213	.NaN
Couple	50832	54374	58400	62438	66340	70093	.NaN
Previously	24768	26758	28741	30674	32588	34190	.NaN
Total	86344	94388	103550	112900	121961	130496	.NaN

Comments on Scenario run

Notes:

North Somerset period: 2036-2041, gender: Males, age band: 0-4.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 5-9.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 10-14.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 15-19.Net immigration assumption revised during solution because it implied negative population.
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 North Somerset period: 2036-2041, gender: Males, age band: 30-34.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 35-39.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 40-44.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 45-49.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 50-54.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 55-59.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 60-64.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 65-69.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 70-74.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 75-79.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 80-84.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Males, age band: 85+.Net immigration assumption revised during solution because it implied negative population.
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 North Somerset period: 2036-2041, gender: Females, age band: 40-44.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Females, age band: 45-49.Net immigration assumption revised during solution because it implied negative population.
 North Somerset period: 2036-2041, gender: Females, age band: 55-59.Net immigration assumption revised during solution because it implied negative population.

North Somerset period: 2036-2041, gender: Females, age band: 60–64. Net immigration assumption revised during solution because it implied negative population.

North Somerset period: 2036-2041, gender: Females, age band: 65–69. Net immigration assumption revised during solution because it implied negative population.

North Somerset period: 2036-2041, gender: Females, age band: 70–74. Net immigration assumption revised during solution because it implied negative population.

North Somerset period: 2036-2041, gender: Females, age band: 75–79. Net immigration assumption revised during solution because it implied negative population.

North Somerset period: 2036-2041, gender: Females, age band: 80–84. Net immigration assumption revised during solution because it implied negative population.

North Somerset period: 2036-2041, gender: Females, age band: 85+. Net immigration assumption revised during solution because it implied negative population.

CHELMER RESULTS FOR SOUTH GLOUCESTERSHIRE: SUMMARY

Appendix B

File name: C:\Chelmer\Ox\..\Results\South Gloucestershire_Pop_Summary.csv

Scenario n: Pop

Scenario d: Scenario to test the 2008 based population projections.

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	POP	POP	POP	POP	POP	POP	POP
Migration (immigration and outmigration levels)							

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popu	245800	257400	269100	282900	298400	313800	328300	
Total Hous	242759	253991	265209	279228	293999	309101	323422	
Natural ch	4981	6683	7891	8291	7986	7219	6146	
Net migrat	6249	4534	6129	6481	7115	7101	.NaN	
Total Hous	253991	265209	279228	293999	309101	323422	.NaN	
Total comn	3409	3891	3672	4401	4699	4878	4878	
Total popu	257400	269100	282900	298400	313800	328300	.NaN	56400
Labour forc	144390	148946	155597	160576	165718	171267	.NaN	21328
Total hous	104896	111337	119980	128597	136599	144263	.NaN	31703
Dwellings (	106819	113377	122179	130954	139103	146908	.NaN	32284

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	50940	49780	49200	50700	54500	57720	59800	325
16-24	23760	30320	33800	33100	31600	32680	35300	699
25-34	35400	31600	33900	40800	43500	42400	41100	188
35-44	39700	42100	37900	35400	39300	45700	48100	242
45-54	33000	33400	38600	40800	37500	35900	39800	237
55-64	27600	30900	30600	31000	35800	37900	35300	197
65-70	12600	13380	15840	17440	16520	18000	21120	.NaN
71-84	18900	21420	23560	26960	31180	33200	34780	.NaN
85+	3900	4500	5700	6700	8500	10300	13000	2091
Total	245800	257400	269100	282900	298400	313800	328300	.NaN

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	26320	25640	25440	26060	28000	29660	30760	202
16-24	12280	16160	17860	17540	16700	17240	18640	528
25-34	17300	15700	17900	21900	23200	22500	21800	105
35-44	20000	20800	18700	17900	20600	24200	25300	180
45-54	16400	16800	19500	20300	18800	18400	21000	148
55-64	13800	15400	15100	15500	17900	18700	17600	126
65-70	6060	6520	7720	8420	8040	8940	10320	82
71-84	8240	9580	10780	12480	14560	15460	16280	251
85+	1100	1400	1900	2400	3300	4100	5300	512
Total	121500	128000	134900	142500	151100	159200	167000	2134

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	24620	24140	23760	24640	26500	28060	29040	123
16-24	11480	14160	15940	15560	14900	15440	16660	171
25-34	18100	15900	16000	18900	20300	19900	19300	83
35-44	19700	21300	19200	17500	18700	21500	22800	62
45-54	16600	16600	19100	20500	18700	17500	18800	89
55-64	13800	15500	15500	15500	17900	19200	17700	71
65-70	6540	6860	8120	9020	8480	9060	10800	.NaN
71-84	10660	11840	12780	14480	16620	17740	18500	.NaN
85+	2800	3100	3800	4300	5200	6200	7700	1579
Total	124300	129400	134200	140400	147300	154600	161300	.NaN

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	12240	11520	12480	13120	14240	14720	14720	32
4-10.	22820	21680	20920	22460	23960	25660	26440	67
11-15.	15880	16580	15800	15120	16300	17340	18640	226
16-17	5680	6760	6800	6400	6200	6840	7200	240
0-17	56620	56540	56000	57100	60700	64560	67000	565

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	11	11	11	11	11	10	.NaN
4-10.	0	21	19	19	19	19	18	.NaN
11-15.	0	16	14	13	13	13	13	.NaN
16-17	0	6	6	5	5	5	5	.NaN
0-17	0	54	50	48	47	47	46	.NaN

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1593	1755	1650	1599	1765	1857	58
16-24	21334	23053	22701	21625	22129	24001	407
25-34	29556	30775	37115	39515	38485	37309	172
35-44	38051	35298	32968	36612	42599	44862	230
45-54	30481	35721	37649	34578	33177	36891	227
55-64	19820	19152	19967	23209	23900	22077	149
65-70	2805	2570	2808	2619	2907	3420	.NaN
71-84	750	622	739	819	756	850	.NaN
85+	0	0	0	0	0	0	0
Total	144390	148946	155597	160576	165718	171267	.NaN

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	13232	15851	19446	22989	26163	29172	.NaN
Couple	65952	68395	72143	75973	79424	82780	.NaN
Previously	25712	27091	28390	29635	31012	32311	.NaN
Total	104896	111337	119980	128597	136599	144263	.NaN

Comments on Scenario run

Notes:

South Gloucestershire period: 2036-2041, gender: Males, age band: 5-9.Net immigration assumption revised during solution because it implied negative populat
South Gloucestershire period: 2036-2041, gender: Males, age band: 10-14.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 15-19.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 20-24.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 25-29.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 30-34.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 35-39.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 40-44.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 45-49.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 50-54.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 55-59.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 60-64.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 65-69.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 70-74.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 75-79.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 80-84.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Males, age band: 85+.Net immigration assumption revised during solution because it implied negative populat
South Gloucestershire period: 2036-2041, gender: Females, age band: 0-4.Net immigration assumption revised during solution because it implied negative popu
South Gloucestershire period: 2036-2041, gender: Females, age band: 10-14.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 15-19.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 20-24.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 25-29.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 30-34.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 35-39.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 40-44.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 45-49.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 55-59.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 60-64.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 65-69.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 70-74.Net immigration assumption revised during solution because it implied negative po

South Gloucestershire period: 2036-2041, gender: Females, age band: 75–79.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 80–84.Net immigration assumption revised during solution because it implied negative po
South Gloucestershire period: 2036-2041, gender: Females, age band: 85+.Net immigration assumption revised during solution because it implied negative popu



APPENDIX C

CHELMER RESULTS FOR BATH AND NE SOMERSET: SUMMARY

Appendix C

File name: C:\Chelmer\Ox\...\Results/Bath and NE Somerset_BaselineV1_Summary.csv

Scenario n: Baseline

Scenario d: Baseline scenario using default options provided.

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	MIG	MIG	MIG	MIG	MIG	MIG	MIG
Migration c: immigration and outmigration levels							

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popul	169100	173100	182908	194904	206259	218022	230213	
Total Hous	164246	168139	178008	189927	201120	212673	224887	
Natural ch	116	1895	2484	2673	3032	3698	3458	
Net migrati	3777	7971	9434	8519	8519	8519	8519	
Total Hous	168139	178008	189927	201120	212673	224887	236864	
Total comn	4961	4900	4977	5139	5349	5326	5326	
Total popu	173100	182908	194904	206259	218022	230213	242190	44922
Labour forc	86675	91810	96223	101557	106339	111633	118099	19664
Total hous	72203	75882	80607	86079	92482	99137	104977	20279
Dwellings (	73950	77718	82557	88162	94720	101536	107517	20770

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	31020	30260	32928	34753	36984	38842	40635	42978
16-24	20780	26640	24907	33881	33436	34159	35885	36907
25-34	21800	19500	25384	22707	23617	31903	31270	32217
35-44	24000	24100	22075	21400	27300	24423	25415	33693
45-54	23000	21900	23638	24433	22437	21929	27593	24835
55-64	18400	20400	20856	20612	22522	23323	21474	20919
65-70	9180	9060	10310	11825	11503	11833	13280	12965
71-84	17020	16840	16873	18002	20454	22403	23438	24606
85+	3900	4400	5937	7291	8006	9207	11223	13070
Total	169100	173100	182908	194904	206259	218022	230213	242190

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	15860	15520	16804	17804	18936	19878	20740	21941
16-24	10740	13880	12770	17236	17073	17432	18315	18786
25-34	10700	10000	13529	12417	12653	16663	16438	16899
35-44	11900	11900	10729	10855	14440	13140	13469	17540
45-54	11300	10800	11519	11684	10616	10821	14351	13137
55-64	9000	10000	10184	9927	10720	11005	9942	10159
65-70	4360	4220	4956	5750	5579	5654	6321	6055
71-84	7240	7380	7404	8242	9574	10676	11177	11622
85+	1100	1400	2134	2657	3048	3512	4572	5488
Total	82200	85100	90029	96572	102639	108781	115325	121627

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	15160	14740	16124	16949	18049	18964	19895	21037
16-24	10040	12760	12137	16645	16362	16727	17570	18121
25-34	11100	9500	11855	10290	10964	15240	14832	15318
35-44	12100	12200	11346	10545	12860	11283	11946	16153
45-54	11700	11100	12119	12749	11821	11108	13242	11698
55-64	9400	10400	10672	10685	11802	12318	11532	10760
65-70	4820	4840	5354	6074	5924	6180	6959	6909
71-84	9780	9460	9469	9761	10880	11726	12261	12985
85+	2800	3000	3803	4634	4958	5695	6651	7582
Total	86900	88000	92879	98332	103620	109241	114888	120563

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	7200	6880	7741	8392	8574	9001	9831	10425
4-10.	13360	12820	13005	14265	15398	15930	16643	17928
11-15.	10460	10560	12183	12095	13013	13912	14160	14626
16-17	4440	5120	8384	8347	8317	8768	9098	9208
0-17	35460	35380	41313	43099	45302	47611	49732	52187

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	10	10	10	10	10	10	10
4-10.	0	18	17	18	18	17	17	17
11-15.	0	15	16	15	15	15	14	14
16-17	0	7	11	10	10	9	9	9
0-17	0	49	54	53	53	51	50	50

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1178	1495	1494	1487	1569	1626	1646
16-24	14509	11474	17545	17262	17467	18419	19035
25-34	16293	22025	19663	20536	27605	27081	27899
35-44	20583	19148	18635	23830	21484	22142	29425
45-54	19236	21378	22122	20333	19900	24963	22708
55-64	12635	13185	13179	14537	14693	13378	13363
65-70	1731	2455	2813	2698	2791	3150	3025
71-84	510	650	772	874	830	874	998
85+	0	0	0	0	0	0	0
Total	86675	91810	96223	101557	106339	111633	118099

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	13484	14969	17872	21020	24334	27892	29345
Couple	39207	40483	41775	43612	46009	48435	51404
Previously	19512	20429	20960	21447	22139	22810	24227
Total	72203	75882	80607	86079	92482	99137	104977

Comments on Scenario run

Notes:

CHELMER RESULTS FOR BRISTOL CITY: SUMMARY

Appendix C

File name: C:\Chelmer\Ox\..\Results\Bristol City_BaselineV1_Summary.csv

Scenario n: Baseline

Scenario d: Baseline scenario using default options provided.

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	MIG	MIG	MIG	MIG	MIG	MIG	MIG
Migration (immigration and outmigration levels)							

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popu	390100	413400	451362	497359	542156	588563	636429	
Total Hous	379833	403294	441327	487061	531935	577952	625548	
Natural ch	6961	16328	21926	23973	25116	26703	27280	
Net migrat	16503	21705	23809	20899	20899	20899	20899	
Total Hous	403294	441327	487061	531935	577952	625548	673728	
Total comn	10106	10035	10298	10221	10611	10881	10881	
Total popu	413400	451362	497359	542156	588563	636429	684609	175163
Labour forc	226085	250270	274314	298496	323370	349860	377546	97285
Total hous	176677	192657	213438	235613	259367	285019	310608	82690
Dwellings (	180010	196291	217464	240057	264259	290395	316467	84249

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	73800	70740	79190	90393	102371	111411	117363	123647
16-24	56300	69860	69564	83594	83043	87473	96793	103185
25-34	65200	74300	93007	95994	98512	110917	110409	115860
35-44	56600	59400	61800	69925	88732	91266	93818	106089
45-54	45500	45900	51857	55507	58028	65865	84588	86898
55-64	34900	38100	38916	40685	46440	50182	52485	60209
65-70	17140	16560	18257	20612	20150	22617	26252	27414
71-84	33360	30640	29003	29622	33261	36021	39519	43673
85+	7300	7900	9768	11027	11619	12811	15202	17634
Total	390100	413400	451362	497359	542156	588563	636429	684609

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	37820	36000	39731	45282	51616	56178	59252	62473
16-24	28080	34400	35036	40883	40059	42341	47183	50470
25-34	33200	38900	48936	51439	53198	58054	57184	59971
35-44	28300	30100	32113	37944	48045	50165	52008	56839
45-54	22900	22700	25503	27532	29637	35356	45314	47324
55-64	17500	19100	19308	19951	22540	24679	26656	32194
65-70	8100	8020	8965	10022	9754	10818	12516	13329
71-84	13700	12980	13085	14143	16108	17394	18815	20656
85+	2000	2400	3036	3813	4307	5132	6367	7487
Total	191600	204600	225713	251009	275264	300117	325295	350743

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	35980	34740	39459	45111	50755	55233	58111	61174
16-24	28220	35460	34528	42711	42984	45132	49610	52715
25-34	32000	35400	44071	44555	45314	52863	53225	55889
35-44	28300	29300	29687	31981	40687	41101	41810	49250
45-54	22600	23200	26354	27975	28391	30509	39274	39574
55-64	17400	19000	19608	20734	23900	25503	25829	28015
65-70	9040	8540	9293	10590	10396	11799	13736	14084
71-84	19660	17660	15917	15479	17153	18627	20704	23018
85+	5300	5500	6732	7214	7312	7679	8835	10147
Total	198500	208800	225649	246350	266892	288446	311134	333866

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	18720	18880	23209	27289	28625	29531	31300	33399
4-10.	31420	29920	31511	38030	44486	47381	49282	52244
11-15.	23660	21940	24470	25073	29260	34499	36781	38005
16-17	10200	11080	16223	16385	16447	18588	20596	21255
0-17	84000	81820	95413	106777	118818	129999	137959	144903

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	11	12	13	12	11	11	11
4-10.	0	17	16	18	19	18	17	17
11-15.	0	12	13	12	12	13	13	12
16-17	0	6	8	8	7	7	7	7
0-17	0	46	50	50	50	50	48	47

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	2286	3451	3499	3514	3963	4387	4526
16-24	42437	37485	46334	45927	47811	52893	56684
25-34	63454	79317	81642	84084	94413	93947	98627
35-44	51912	53886	61096	77398	80022	81951	92669
45-54	39724	45707	48937	51199	58199	74763	76861
55-64	23025	24229	25825	29403	31374	33118	38779
65-70	2525	4879	5485	5283	5990	6938	7239
71-84	722	1316	1496	1688	1598	1863	2161
85+	0	0	0	0	0	0	0
Total	226085	250270	274314	298496	323370	349860	377546

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	48628	57551	70264	82458	94780	107882	116538
Couple	82109	87946	95074	103544	112889	123084	134124
Previously	45940	47161	48100	49611	51698	54053	59946
Total	176677	192657	213438	235613	259367	285019	310608

Comments on Scenario run

Notes:

CHELMER RESULTS FOR NORTH SOMERSET: SUMMARY

Appendix C

File name: C:\Chelmer\Ox\...\Results\North Somerset_BaselineV1_Summary.csv

Scenario n: BaselineV1

Scenario d: Baseline scenario using default options provided.

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution c	POP	MIG	MIG	MIG	MIG	MIG	MIG

Migration c: immigration and outmigration levels

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popul	188900	200600	216719	235066	254328	273610	292557	
Total Hous	185009	196831	212263	230577	249190	267886	285900	
Natural ch	7	1685	3042	3822	3908	3231	2046	
Net migrati	11814	13748	15272	14791	14791	14791	14791	
Total Hous	196831	212263	230577	249190	267886	285900	302737	
Total com	3769	4456	4489	5138	5724	6657	6657	
Total popu	200600	216719	235066	254328	273610	292557	309394	73010
Labour forc	101911	110063	117114	123183	129166	136801	145524	27255
Total house	86344	93984	102917	112010	120716	129289	136929	34372
Dwellings (	89027	96904	106115	115491	124467	133306	141184	35440

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	35760	36660	38276	42085	47037	51567	54453	56610
16-24	16540	18740	22422	21482	21553	23152	26395	29335
25-34	21900	20800	22640	29415	33414	32230	32436	34230
35-44	27300	30300	28858	27554	29561	36247	40140	38990
45-54	27500	26900	30262	32973	31519	30191	32095	38814
55-64	23400	28200	28827	28202	31571	34169	32896	31779
65-70	11020	12180	14659	17064	16224	16702	19457	20022
71-84	20380	21120	23262	27477	32372	35503	36932	38744
85+	5100	5700	7513	8814	11077	13849	17753	20870
Total	188900	200600	216719	235066	254328	273610	292557	309394

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	18440	18820	19522	21329	23832	26119	27646	28751
16-24	8560	9980	11494	11044	11024	11670	13269	14819
25-34	10800	10300	11701	15231	16932	16283	16317	17076
35-44	13500	15100	14174	13464	14982	18374	19966	19407
45-54	13600	13300	14809	16253	15319	14529	16003	19442
55-64	11600	13800	14184	13772	15320	16725	15857	15234
65-70	5200	5840	7111	8104	7904	7938	9436	9633
71-84	8700	9360	10278	12453	14797	16372	16954	17929
85+	1400	1700	2538	3093	4031	5291	6941	8271
Total	91800	98200	105811	114743	124141	133301	142389	150562

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	17320	17840	18754	20757	23205	25448	26807	27859
16-24	7980	8760	10928	10437	10529	11482	13126	14516
25-34	11100	10500	10939	14184	16482	15947	16119	17154
35-44	13800	15200	14684	14090	14579	17873	20174	19583
45-54	13900	13600	15453	16720	16200	15662	16092	19372
55-64	11800	14400	14643	14430	16251	17444	17039	16545
65-70	5820	6340	7548	8960	8320	8765	10021	10389
71-84	11680	11760	12984	15024	17575	19130	19978	20815
85+	3700	4000	4975	5721	7046	8558	10812	12599
Total	97100	102400	110908	120323	130187	140309	150168	158832

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	8320	8720	10062	11583	12613	13351	13598	14116
4-10.	15680	16060	16514	18667	21151	23043	24237	24881
11-15.	11760	11880	11700	11836	13273	15173	16618	17612
16-17	4320	4720	4070	4187	4193	4918	5666	6185
0-17	40080	41380	42346	46273	51230	56485	60119	62794

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	10	11	11	11	11	11	10
4-10.	0	19	18	18	19	19	19	18
11-15.	0	14	12	12	12	13	13	13
16-17	0	5	4	4	4	4	4	5
0-17	0	48	45	45	46	47	46	46

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1176	1172	1206	1208	1417	1633	1782
16-24	12253	16893	16025	16085	17041	19388	21617
25-34	18823	19892	25922	29322	28298	28473	30061
35-44	26679	25295	24132	25944	31756	35206	34184
45-54	23605	26397	28738	27439	26287	28002	33916
55-64	16513	16142	16107	18288	19424	18414	18001
65-70	2263	3418	3946	3700	3831	4527	4590
71-84	599	854	1038	1197	1112	1158	1373
85+	0	0	0	0	0	0	0
Total	101911	110063	117114	123183	129166	136801	145524

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	10743	13330	16719	20296	23656	27053	28490
Couple	50832	53573	57088	60697	64216	67769	71506
Previously	24768	27081	29111	31017	32844	34467	36934
Total	86344	93984	102917	112010	120716	129289	136929

Comments on Scenario run

Notes:

CHELMER RESULTS FOR SOUTH GLOUCESTERSHIRE: SUMMARY

Appendix C

File name: C:\Chelmer\Ox\...\Results/South Gloucestershire_BaselineV1_Summary.csv

Scenario n: BaselineV1

Scenario d: Baseline scenario using default options provided.

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	MIG	MIG	MIG	MIG	MIG	MIG	MIG
Migration c inmigration and outmigration levels							

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popul	245800	257400	268907	282108	295383	308003	320057	
Total Hous	242759	253991	265016	278436	290982	303304	315179	
Natural ch	4981	6683	6656	6384	6157	5711	4385	
Net migrati	6249	4342	6762	6165	6165	6165	6165	
Total Hous	253991	265016	278436	290982	303304	315179	325732	
Total comn	3409	3891	3672	4401	4699	4878	4878	
Total popu	257400	268907	282108	295383	308003	320057	330610	50603
Labour forc	144390	146268	151168	154598	157554	160802	166236	13164
Total house	104896	110574	117634	125295	132847	140057	146258	27951
Dwellings (	106819	112600	119791	127592	135283	142624	148939	28464

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	50940	49780	50297	51797	54645	56711	58135	59430
16-24	23760	30320	33224	36883	35104	35394	37884	38943
25-34	35400	31600	32732	36607	41483	44723	42468	43254
35-44	39700	42100	37359	32297	33791	37512	42437	45484
45-54	33000	33400	38361	40584	35889	31085	32561	36246
55-64	27600	30900	30347	30557	35417	37643	33252	28457
65-70	12600	13380	16059	17376	16258	17710	21091	20907
71-84	18900	21420	23951	27652	31829	33737	34977	37865
85+	3900	4500	6577	8355	10967	13488	17252	20024
Total	245800	257400	268907	282108	295383	308003	320057	330610

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	26320	25640	25925	26516	27960	29024	29765	30427
16-24	12280	16160	17905	19978	19004	19095	20347	20897
25-34	17300	15700	17217	19992	22787	24554	23393	23696
35-44	20000	20800	18185	16026	17773	20412	23183	24893
45-54	16400	16800	19507	20106	17492	15439	17136	19742
55-64	13800	15400	14971	15414	18052	18660	16268	14270
65-70	6060	6520	7785	8340	7807	8917	10445	10054
71-84	8240	9580	10808	12374	14221	15006	15813	17423
85+	1100	1400	2215	3024	4229	5169	6725	7871
Total	121500	128000	134518	141770	149325	156276	163075	169273

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	24620	24140	24373	25281	26685	27687	28371	29003
16-24	11480	14160	15318	16905	16100	16299	17536	18046
25-34	18100	15900	15515	16615	18696	20169	19075	19558
35-44	19700	21300	19174	16271	16018	17100	19254	20591
45-54	16600	16600	18854	20478	18397	15646	15425	16504
55-64	13800	15500	15376	15143	17365	18983	16984	14187
65-70	6540	6860	8274	9035	8451	8792	10646	10853
71-84	10660	11840	13143	15279	17608	18732	19164	20442
85+	2800	3100	4362	5331	6738	8319	10527	12153
Total	124300	129400	134389	140338	146058	151727	156982	161337

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	12240	11520	13013	13634	13930	14359	14682	14926
4-10.	22820	21680	20803	22653	23924	24555	25183	25744
11-15.	15880	16580	16482	15510	16792	17797	18270	18760
16-17	5680	6760	8021	7729	7300	7991	8339	8483
0-17	56620	56540	58319	59526	61946	64702	66474	67913

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	11	12	12	11	11	10	10
4-10.	0	21	19	19	19	18	18	18
11-15.	0	16	15	13	13	13	13	13
16-17	0	6	7	7	6	6	6	6
0-17	0	54	53	51	49	49	47	46

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1593	2065	1989	1880	2059	2148	2185
16-24	21334	21932	24998	23838	23687	25451	26209
25-34	29556	29710	33355	37856	40761	38721	39441
35-44	38051	34788	30077	31492	35020	39587	42494
45-54	30481	35525	37469	33040	28654	30170	33657
55-64	19820	19021	19741	23111	23771	20468	17926
65-70	2805	2607	2793	2574	2867	3424	3325
71-84	750	620	746	807	735	833	999
85+	0	0	0	0	0	0	0
Total	144390	146268	151168	154598	157554	160802	166236

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	13232	15356	18475	21833	24954	27836	28729
Couple	65952	67520	69922	72918	75964	78885	82216
Previously	25712	27698	29237	30544	31929	33336	35312
Total	104896	110574	117634	125295	132847	140057	146258

Comments on Scenario run

Notes:



APPENDIX D

CHELMER RESULTS FOR BATH AND NE SOMERSET: SUMMARY

Appendix D

File name: C:\Chelmer\Ox\..\Results\Bath and NE Somerset_Dwelling Led_11,000_Summary.csv

Scenario n: Dwelling Led

Scenario d: Net completions deducted between 06/ 11 residual annual average based on Core Strategy 11,000 for remainder of PP

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	DW	DW	DW	DW	DW	DW	DW
Migration (immigration and outmigration levels)							

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popu	169100	173100	174384	183780	189719	193195	203451	
Total Hous	164246	168139	169484	178803	184580	187846	198125	
Natural cha	116	1895	1390	1323	1440	1764	1885	
Net migrat	3777	-555	7936	4449	1827	8519	8519	
Total Hous	168139	169484	178803	184580	187846	198125	208534	
Total comn	4961	4900	4977	5139	5349	5326	5326	
Total popu	173100	174384	183780	189719	193195	203451	213860	20095
Labour forc	86675	86438	89098	91574	91725	95996	101750	5050
Total house	72203	73068	76359	79651	82942	88321	93228	10739
Dwellings (	73950	74836	78207	81578	84949	90458	95484	10999

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	31020	30260	32005	32880	33462	33322	34363	36490
16-24	20780	26640	21347	31941	31189	30270	33366	34042
25-34	21800	19500	23391	18478	18196	26468	25855	28071
35-44	24000	24100	21159	19968	24650	18879	19010	28294
45-54	23000	21900	23175	23711	21193	19832	24468	19357
55-64	18400	20400	20531	20194	21859	22202	19984	18882
65-70	9180	9060	10168	11629	11219	11399	12738	12273
71-84	17020	16840	16671	17688	20062	21718	22649	23713
85+	3900	4400	5937	7291	7889	9105	11018	12738
Total	169100	173100	174384	183780	189719	193195	203451	213860

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	15860	15520	16337	16844	17135	17057	17528	18621
16-24	10740	13880	11107	16311	16001	15580	17060	17318
25-34	10700	10000	12504	10391	10068	14013	13856	14925
35-44	11900	11900	10219	10079	13051	10390	10356	14914
45-54	11300	10800	11263	11276	9924	9674	12697	10429
55-64	9000	10000	10022	9709	10365	10395	9122	9049
65-70	4360	4220	4886	5654	5440	5433	6037	5678
71-84	7240	7380	7335	8122	9409	10386	10819	11179
85+	1100	1400	2134	2657	3010	3482	4497	5365
Total	82200	85100	85807	91043	94403	96410	101972	107478

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	15160	14740	15668	16036	16327	16265	16834	17869
16-24	10040	12760	10240	15630	15188	14690	16307	16724
25-34	11100	9500	10887	8087	8128	12455	11999	13146
35-44	12100	12200	10940	9889	11599	8489	8654	13380
45-54	11700	11100	11912	12435	11269	10158	11771	8928
55-64	9400	10400	10509	10485	11494	11807	10862	9833
65-70	4820	4840	5283	5975	5779	5966	6701	6595
71-84	9780	9460	9335	9566	10653	11332	11830	12534
85+	2800	3000	3803	4634	4879	5623	6521	7373
Total	86900	88000	88577	92737	95316	96785	101479	106382

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	7200	6880	7488	7411	7281	7379	8076	8891
4-10.	13360	12820	12719	13628	13673	13472	13826	14946
11-15.	10460	10560	11797	11843	12508	12472	12460	12653
16-17	4440	5120	7915	8190	8006	8227	8513	8505
0-17	35460	35380	39919	41072	41468	41550	42875	44995

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	10	10	10	9	9	9	10
4-10.	0	18	17	18	17	16	16	16
11-15.	0	15	16	16	16	15	14	14
16-17	0	7	11	11	10	10	10	9
0-17	0	49	55	54	52	50	49	48

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1178	1412	1466	1431	1473	1521	1520
16-24	14509	9385	16342	15950	15200	17092	17547
25-34	16293	20297	16010	15877	22920	22418	24339
35-44	20583	18343	17381	21523	16687	16583	24744
45-54	19236	20957	21465	19207	17999	22139	17783
55-64	12635	12976	12909	14099	13952	12383	12004
65-70	1731	2419	2765	2629	2688	3019	2857
71-84	510	649	760	858	806	841	956
85+	0	0	0	0	0	0	0
Total	86675	86438	89098	91574	91725	95996	101750

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	13484	13897	16258	18605	20734	24025	25462
Couple	39207	39094	39662	40414	41288	42961	45346
Previously	19512	20076	20439	20632	20920	21335	22420
Total	72203	73068	76359	79651	82942	88321	93228

Comments on Scenario run

Notes:

CHELMER RESULTS FOR BRISTOL CITY: SUMMARY

Appendix D

File name: C:\Chelmer\Ox\..\Results/Bristol City_Dwelling Led30,600_Summary.csv

Scenario n: Dwelling Led

Scenario d: Dwelling Led based on comps 06-11 and residual average based on Core Strategy figure of 30,600 dwellings

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	DW	DW	DW	DW	DW	DW	DW
Migration (immigration and outmigration levels)							

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popu	390100	413400	436994	447485	456263	463132	498671	
Total Hous	379833	403294	426959	437187	446042	452521	487790	
Natural ch	6961	16328	19778	17084	14761	14372	18063	
Net migrat	16503	7337	-9548	-8236	-8276	20899	20899	
Total Hous	403294	426959	437187	446042	452521	487790	526751	
Total comn	10106	10035	10298	10221	10611	10881	10881	
Total popu	413400	436994	447485	456263	463132	498671	537632	49732
Labour forc	226085	240902	242097	244535	247461	270078	294417	21376
Total hous	176677	187177	193689	200200	206711	225837	247528	30034
Dwellings (	180010	190708	197342	203976	210610	230097	252196	30600

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	73800	70740	77615	83393	86364	83479	80979	84991
16-24	56300	69860	64439	70123	68337	71592	87844	90610
25-34	65200	74300	88597	78978	68559	74195	81290	99059
35-44	56600	59400	60089	63263	74656	65481	58654	69641
45-54	45500	45900	51109	52663	52255	55550	68470	61476
55-64	34900	38100	38518	39260	43751	45613	45882	50221
65-70	17140	16560	18107	20064	19151	21059	24183	24561
71-84	33360	30640	28752	28714	31680	33726	36799	40392
85+	7300	7900	9768	11027	11510	12437	14570	16681
Total	390100	413400	436994	447485	456263	463132	498671	537632

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	37820	36000	38929	41694	43397	41850	40591	42671
16-24	28080	34400	32692	34697	33265	34909	42715	43990
25-34	33200	38900	46684	43000	38783	40569	43596	52101
35-44	28300	30100	31104	34112	40318	36761	34728	39530
45-54	22900	22700	25058	25835	26196	29347	36370	34155
55-64	17500	19100	19087	19152	21007	22026	22771	26407
65-70	8100	8020	8884	9724	9211	9962	11351	11678
71-84	13700	12980	12987	13771	15410	16309	17428	18877
85+	2000	2400	3036	3813	4275	5011	6136	7110
Total	191600	204600	218461	225798	231862	236744	255686	276519

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	35980	34740	38686	41698	42968	41628	40388	42320
16-24	28220	35460	31747	35427	35071	36684	45129	46620
25-34	32000	35400	41913	35978	29776	33626	37694	46958
35-44	28300	29300	28985	29151	34338	28720	23926	30111
45-54	22600	23200	26051	26828	26059	26203	32100	27321
55-64	17400	19000	19431	20108	22744	23587	23111	23814
65-70	9040	8540	9223	10340	9940	11097	12832	12883
71-84	19660	17660	15765	14943	16270	17417	19371	21515
85+	5300	5500	6732	7214	7235	7426	8434	9571
Total	198500	208800	218533	221687	224401	226388	242985	261113

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	18720	18880	22671	24232	21688	19538	20488	24761
4-10.	31420	29920	30978	35594	37823	34496	32221	34080
11-15.	23660	21940	23965	23568	26854	29444	28270	26149
16-17	10200	11080	15672	14983	14915	16637	18557	17512
0-17	84000	81820	93286	98377	101280	100115	99536	102502

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	11	12	13	11	9	9	10
4-10.	0	17	17	18	19	17	14	14
11-15.	0	12	13	12	13	14	13	11
16-17	0	6	8	8	7	8	8	7
0-17	0	46	50	51	51	48	44	41

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	2286	3333	3198	3187	3548	3957	3736
16-24	42437	34467	38381	37249	38562	48078	50277
25-34	63454	75554	67140	58630	63276	69307	84456
35-44	51912	52385	55266	65122	57612	51438	61019
45-54	39724	45044	46415	46080	49058	60502	54418
55-64	23025	23974	24906	27646	28366	28726	32127
65-70	2525	4838	5330	5002	5550	6348	6414
71-84	722	1307	1461	1619	1489	1722	1970
85+	0	0	0	0	0	0	0
Total	226085	240902	242097	244535	247461	270078	294417

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	48628	55078	61104	66009	70575	82038	91294
Couple	82109	85588	86728	88673	90793	97672	106203
Previously	45940	46512	45857	45517	45343	46127	50031
Total	176677	187177	193689	200200	206711	225837	247528

Comments on Scenario run

Notes:

CHELMER RESULTS FOR NORTH SOMERSET: SUMMARY

Appendix D

File name: C:\Chelmer\Ox\...\Results\North Somerset_Dwelling Led_14,000_Summary.csv

Scenario n: Dwelling Led

Scenario d: Net dwelling completions for 06/11 and residual annual average at CS level for remaining period

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	DW	DW	DW	DW	DW	DW	DW
Migration c	immigration and outmigration levels						

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popul	188900	200600	209371	212570	216785	221912	237031	
Total Hous	185009	196831	204915	208081	211647	216188	230374	
Natural ch	7	1685	2162	1360	420	-607	-674	
Net migrati	11814	6402	1003	2199	4127	14791	14791	
Total Hous	196831	204915	208081	211647	216188	230374	244494	
Total comn	3769	4456	4489	5138	5724	6657	6657	
Total popu	200600	209371	212570	216785	221912	237031	251151	21312
Labour forc	101911	105275	102881	100583	99492	106675	114469	-2419
Total house	86344	91145	94071	96997	99923	106800	113337	13579
Dwellings (	89027	93977	96994	100011	103028	110118	116859	14001

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	35760	36660	37190	38214	39336	39602	40276	42229
16-24	16540	18740	20761	17480	16804	17946	22054	23442
25-34	21900	20800	20941	23878	24407	21726	24190	28603
35-44	27300	30300	27694	23915	23163	26663	29158	28558
45-54	27500	26900	29605	30875	27631	24216	24545	29359
55-64	23400	28200	28335	26718	29072	30515	28357	25984
65-70	11020	12180	14471	16445	15127	15129	17612	17830
71-84	20380	21120	22861	26231	30354	32813	33980	35521
85+	5100	5700	7513	8814	10891	13302	16859	19625
Total	188900	200600	209371	212570	216785	221912	237031	251151

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	18440	18820	18956	19316	19843	19940	20351	21371
16-24	8560	9980	10745	9204	8793	9165	11042	11763
25-34	10800	10300	10867	12572	12704	11369	12482	14359
35-44	13500	15100	13508	11416	11518	13456	14662	14539
45-54	13600	13300	14448	15081	13119	11169	11888	14606
55-64	11600	13800	13925	12999	14008	14756	13334	11993
65-70	5200	5840	7018	7788	7342	7133	8473	8453
71-84	8700	9360	10135	11992	13992	15213	15566	16316
85+	1400	1700	2538	3093	3977	5119	6641	7817
Total	91800	98200	102140	103461	105296	107320	114439	121217

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	17320	17840	18234	18898	19493	19661	19925	20858
16-24	7980	8760	10016	8276	8011	8782	11012	11679
25-34	11100	10500	10074	11306	11703	10357	11708	14244
35-44	13800	15200	14186	12499	11645	13207	14496	14019
45-54	13900	13600	15157	15794	14512	13047	12657	14753
55-64	11800	14400	14410	13719	15064	15759	15023	13991
65-70	5820	6340	7453	8657	7785	7996	9139	9377
71-84	11680	11760	12726	14239	16362	17600	18414	19205
85+	3700	4000	4975	5721	6914	8183	10218	11808
Total	97100	102400	107231	109109	111489	114592	122592	129934

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	8320	8720	9684	10064	9715	9491	9752	10953
4-10.	15680	16060	16100	17151	17790	17528	17652	18322
11-15.	11760	11880	11407	11000	11831	12582	12871	12954
16-17	4320	4720	3848	3663	3524	4041	4590	4582
0-17	40080	41380	41039	41878	42860	43642	44865	46811

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	10	11	11	10	9	9	10
4-10.	0	19	18	18	18	18	17	16
11-15.	0	14	13	12	12	13	12	11
16-17	0	5	4	4	4	4	4	4
0-17	0	48	45	45	44	44	42	41

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1176	1108	1055	1015	1164	1323	1320
16-24	12253	15605	12911	12411	13091	16275	17468
25-34	18823	18398	21053	21421	19105	21267	25145
35-44	26679	24268	20919	20313	23355	25605	25069
45-54	23605	25820	26896	24023	21041	21381	25647
55-64	16513	15858	15242	16825	17257	15684	14511
65-70	2263	3374	3799	3440	3459	4092	4067
71-84	599	844	1006	1135	1020	1048	1242
85+	0	0	0	0	0	0	0
Total	101911	105275	102881	100583	99492	106675	114469

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	10743	12677	14501	16374	18165	21282	22900
Couple	50832	51918	52065	52322	52716	55343	58401
Previously	24768	26550	27505	28302	29042	30175	32036
Total	86344	91145	94071	96997	99923	106800	113337

Comments on Scenario run

Notes:

CHELMER RESULTS FOR SOUTH GLOUCESTERSHIRE: SUMMARY

Appendix D

File name: C:\Chelmer\Ox\...\Results\South Gloucestershire_Dwelling Led_Summary.csv

Scenario n: Dwelling Led

Scenario d: Net completions for 06/11, residual annual average of Core Strategy 21,500 thereafter

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	DW	DW	DW	DW	DW	DW	DW
Migration c	immigration and outmigration levels						

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popul	245800	257400	264423	274136	282204	289953	300498	
Total Hous	242759	253991	260532	270464	277803	285254	295620	
Natural ch	4981	6683	6038	5396	4787	4197	3229	
Net migrati	6249	-146	3897	1946	2668	6165	6165	
Total Hous	253991	260532	270464	277803	285254	295620	305011	
Total comn	3409	3891	3672	4401	4699	4878	4878	
Total popu	257400	264423	274136	282204	289953	300498	309889	32553
Labour forc	144390	143215	145940	146309	146574	149315	154233	2184
Total house	104896	109021	114684	120347	126010	132508	138212	21114
Dwellings (	106819	111019	116786	122553	128320	134937	140746	21501

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	50940	49780	49650	50272	51706	52276	53006	54230
16-24	23760	30320	31837	35453	33219	33282	36176	36710
25-34	35400	31600	31592	34166	37839	40721	39144	40978
35-44	39700	42100	36759	31101	31570	33847	38178	41509
45-54	33000	33400	38051	39955	34729	29255	30028	32624
55-64	27600	30900	30161	30213	34794	36672	31946	26678
65-70	12600	13380	15980	17231	16015	17352	20632	20305
71-84	18900	21420	23816	27390	31431	33167	34326	37101
85+	3900	4500	6577	8355	10901	13381	17062	19754
Total	245800	257400	264423	274136	282204	289953	300498	309889

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	26320	25640	25595	25734	26452	26748	27132	27762
16-24	12280	16160	17273	19312	18121	18090	19486	19749
25-34	17300	15700	16652	18840	21073	22667	21841	22611
35-44	20000	20800	17841	15365	16605	18584	21139	23023
45-54	16400	16800	19333	19743	16826	14413	15789	17942
55-64	13800	15400	14869	15223	17705	18109	15524	13278
65-70	6060	6520	7746	8266	7678	8725	10191	9714
71-84	8240	9580	10760	12276	14060	14756	15497	17019
85+	1100	1400	2215	3024	4209	5136	6660	7771
Total	121500	128000	132284	137783	142729	147228	153259	158869

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	24620	24140	24055	24538	25253	25528	25874	26468
16-24	11480	14160	14564	16141	15099	15192	16690	16961
25-34	18100	15900	14940	15326	16766	18054	17303	18367
35-44	19700	21300	18918	15736	14965	15263	17039	18486
45-54	16600	16600	18718	20212	17903	14842	14239	14682
55-64	13800	15500	15292	14990	17089	18563	16422	13400
65-70	6540	6860	8235	8965	8336	8626	10441	10592
71-84	10660	11840	13055	15114	17372	18412	18829	20081
85+	2800	3100	4362	5331	6692	8245	10402	11983
Total	124300	129400	132139	136353	139475	142725	147239	151020

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	12240	11520	12785	12959	12859	12966	13299	13770
4-10.	22820	21680	20579	22066	22582	22545	22808	23379
11-15.	15880	16580	16287	15247	16264	16765	16898	17080
16-17	5680	6760	7840	7562	7041	7652	7908	7905
0-17	56620	56540	57491	57834	58746	59928	60913	62134

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	11	12	11	11	10	10	10
4-10.	0	21	19	19	19	18	17	17
11-15.	0	16	15	13	14	13	13	12
16-17	0	6	7	7	6	6	6	6
0-17	0	54	53	50	49	48	46	45

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1593	2018	1945	1813	1971	2037	2036
16-24	21334	20944	23970	22501	22214	24340	24763
25-34	29556	28680	31159	34589	37173	35746	37405
35-44	38051	34227	28962	29423	31619	35628	38799
45-54	30481	35235	36883	31957	26950	27815	30302
55-64	19820	18899	19512	22694	23118	19585	16726
65-70	2805	2594	2769	2534	2807	3349	3225
71-84	750	618	740	798	722	815	977
85+	0	0	0	0	0	0	0
Total	144390	143215	145940	146309	146574	149315	154233

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	13232	14963	17687	20478	23088	25875	26829
Couple	65952	66575	68169	70022	71991	74493	77480
Previously	25712	27483	28828	29847	30931	32139	33903
Total	104896	109021	114684	120347	126010	132508	138212

Comments on Scenario run

Notes:



APPENDIX E

CHELMER RESULTS FOR BATH AND NE SOMERSET: SUMMARY

Appendix E

File name: C:\Chelmer\Ox\..\Results\Bath and NE Somerset_Dwelling+26%_Summary.csv

Scenario n: Dwelling Led +26%

Scenario d: Completions for 06/11 and indigenous growth plus 26% of Bristol's growth

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	DW	DW	DW	DW	DW	DW	DW
Migration (immigration and outmigration levels)							

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popu	169100	173100	174384	206869	231020	251878	268032	
Total Hous	164246	168139	169484	201892	225881	246529	262706	
Natural ch	116	1895	1390	4162	6337	7662	6371	
Net migrat	3777	-555	31020	19828	14308	8519	8519	
Total Hous	168139	169484	201892	225881	246529	262706	277594	
Total comn	4961	4900	4977	5139	5349	5326	5326	
Total popu	173100	174384	206869	231020	251878	268032	282920	78778
Labour forc	86675	86438	103691	118031	127934	133647	140422	41259
Total hous	72203	73068	84081	95095	106108	114850	121427	33905
Dwellings (	73950	74836	86116	97396	108676	117629	124366	34726

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	31020	30260	32005	35386	39618	44893	50739	54736
16-24	20780	26640	21347	41434	41124	38729	37092	38595
25-34	21800	19500	23391	24002	32225	46448	41913	37013
35-44	24000	24100	21159	22482	29854	28055	34852	48145
45-54	23000	21900	23175	24995	23810	24176	30553	28421
55-64	18400	20400	20531	21048	23402	24563	23055	23103
65-70	9180	9060	10168	12000	11922	12403	13906	13717
71-84	17020	16840	16671	18231	21176	23180	24435	25742
85+	3900	4400	5937	7291	7889	9431	11487	13448
Total	169100	173100	174384	206869	231020	251878	268032	282920

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	15860	15520	16337	18103	20276	22967	25912	27960
16-24	10740	13880	11107	20766	20690	19608	18910	19648
25-34	10700	10000	12504	13237	16905	23571	21460	19186
35-44	11900	11900	10219	11492	15906	15235	18164	24389
45-54	11300	10800	11263	11994	11399	12113	16043	15201
55-64	9000	10000	10022	10137	11173	11669	10832	11408
65-70	4360	4220	4886	5832	5783	5926	6648	6454
71-84	7240	7380	7335	8303	9813	10974	11623	12170
85+	1100	1400	2134	2657	3010	3588	4640	5609
Total	82200	85100	85807	102521	114955	125651	134232	142025

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	15160	14740	15668	17283	19342	21926	24827	26776
16-24	10040	12760	10240	20668	20434	19121	18182	18947
25-34	11100	9500	10887	10765	15320	22877	20453	17827
35-44	12100	12200	10940	10990	13948	12820	16688	23756
45-54	11700	11100	11912	13001	12411	12063	14510	13220
55-64	9400	10400	10509	10911	12229	12894	12223	11695
65-70	4820	4840	5283	6167	6138	6477	7257	7263
71-84	9780	9460	9335	9929	11364	12206	12813	13572
85+	2800	3000	3803	4634	4879	5843	6847	7839
Total	86900	88000	88577	104348	116065	126227	133800	140895

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	7200	6880	7488	8095	10158	11961	13270	13099
4-10.	13360	12820	12719	14405	15751	18776	21623	23633
11-15.	10460	10560	11797	12885	13708	14155	15845	18005
16-17	4440	5120	7915	9461	9059	9250	9099	10050
0-17	35460	35380	39919	44846	48676	54142	59837	64787

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	10	10	10	11	11	12	11
4-10.	0	18	17	17	17	18	19	19
11-15.	0	15	16	15	14	13	14	15
16-17	0	7	11	11	10	9	8	8
0-17	0	49	55	53	51	51	52	53

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1178	1412	1691	1618	1655	1626	1797
16-24	14509	9385	21902	21950	20229	19229	19641
25-34	16293	20297	20798	28005	40120	36212	32006
35-44	20583	18343	19589	26083	24689	30281	41921
45-54	19236	20957	22630	21583	21939	27655	25968
55-64	12635	12976	13457	15100	15510	14427	14838
65-70	1731	2419	2859	2800	2928	3299	3205
71-84	510	649	765	892	864	918	1046
85+	0	0	0	0	0	0	0
Total	86675	86438	103691	118031	127934	133647	140422

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	13484	13897	19377	24878	29957	34006	34919
Couple	39207	39094	43367	47847	52530	56165	59951
Previously	19512	20076	21337	22371	23622	24679	26557
Total	72203	73068	84081	95095	106108	114850	121427

Comments on Scenario run

Notes:

CHELMER RESULTS FOR BRISTOL CITY: SUMMARY

Appendix E

File name: C:\Chelmer\Ox\..\Results/Bristol City_Dwelling Led30,600_Summary.csv

Scenario n: Dwelling Led

Scenario d: Dwelling Led based on comps 06-11 and residual average based on Core Strategy figure of 30,600 dwellings

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	DW	DW	DW	DW	DW	DW	DW
Migration (immigration and outmigration levels)							

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popu	390100	413400	436994	447485	456263	463132	498671	
Total Hous	379833	403294	426959	437187	446042	452521	487790	
Natural ch	6961	16328	19778	17084	14761	14372	18063	
Net migrat	16503	7337	-9548	-8236	-8276	20899	20899	
Total Hous	403294	426959	437187	446042	452521	487790	526751	
Total comn	10106	10035	10298	10221	10611	10881	10881	
Total popu	413400	436994	447485	456263	463132	498671	537632	49732
Labour forc	226085	240902	242097	244535	247461	270078	294417	21376
Total hous	176677	187177	193689	200200	206711	225837	247528	30034
Dwellings (	180010	190708	197342	203976	210610	230097	252196	30600

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	73800	70740	77615	83393	86364	83479	80979	84991
16-24	56300	69860	64439	70123	68337	71592	87844	90610
25-34	65200	74300	88597	78978	68559	74195	81290	99059
35-44	56600	59400	60089	63263	74656	65481	58654	69641
45-54	45500	45900	51109	52663	52255	55550	68470	61476
55-64	34900	38100	38518	39260	43751	45613	45882	50221
65-70	17140	16560	18107	20064	19151	21059	24183	24561
71-84	33360	30640	28752	28714	31680	33726	36799	40392
85+	7300	7900	9768	11027	11510	12437	14570	16681
Total	390100	413400	436994	447485	456263	463132	498671	537632

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	37820	36000	38929	41694	43397	41850	40591	42671
16-24	28080	34400	32692	34697	33265	34909	42715	43990
25-34	33200	38900	46684	43000	38783	40569	43596	52101
35-44	28300	30100	31104	34112	40318	36761	34728	39530
45-54	22900	22700	25058	25835	26196	29347	36370	34155
55-64	17500	19100	19087	19152	21007	22026	22771	26407
65-70	8100	8020	8884	9724	9211	9962	11351	11678
71-84	13700	12980	12987	13771	15410	16309	17428	18877
85+	2000	2400	3036	3813	4275	5011	6136	7110
Total	191600	204600	218461	225798	231862	236744	255686	276519

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	35980	34740	38686	41698	42968	41628	40388	42320
16-24	28220	35460	31747	35427	35071	36684	45129	46620
25-34	32000	35400	41913	35978	29776	33626	37694	46958
35-44	28300	29300	28985	29151	34338	28720	23926	30111
45-54	22600	23200	26051	26828	26059	26203	32100	27321
55-64	17400	19000	19431	20108	22744	23587	23111	23814
65-70	9040	8540	9223	10340	9940	11097	12832	12883
71-84	19660	17660	15765	14943	16270	17417	19371	21515
85+	5300	5500	6732	7214	7235	7426	8434	9571
Total	198500	208800	218533	221687	224401	226388	242985	261113

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	18720	18880	22671	24232	21688	19538	20488	24761
4-10.	31420	29920	30978	35594	37823	34496	32221	34080
11-15.	23660	21940	23965	23568	26854	29444	28270	26149
16-17	10200	11080	15672	14983	14915	16637	18557	17512
0-17	84000	81820	93286	98377	101280	100115	99536	102502

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	11	12	13	11	9	9	10
4-10.	0	17	17	18	19	17	14	14
11-15.	0	12	13	12	13	14	13	11
16-17	0	6	8	8	7	8	8	7
0-17	0	46	50	51	51	48	44	41

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	2286	3333	3198	3187	3548	3957	3736
16-24	42437	34467	38381	37249	38562	48078	50277
25-34	63454	75554	67140	58630	63276	69307	84456
35-44	51912	52385	55266	65122	57612	51438	61019
45-54	39724	45044	46415	46080	49058	60502	54418
55-64	23025	23974	24906	27646	28366	28726	32127
65-70	2525	4838	5330	5002	5550	6348	6414
71-84	722	1307	1461	1619	1489	1722	1970
85+	0	0	0	0	0	0	0
Total	226085	240902	242097	244535	247461	270078	294417

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	48628	55078	61104	66009	70575	82038	91294
Couple	82109	85588	86728	88673	90793	97672	106203
Previously	45940	46512	45857	45517	45343	46127	50031
Total	176677	187177	193689	200200	206711	225837	247528

Comments on Scenario run

Notes:

CHELMER RESULTS FOR NORTH SOMERSET: SUMMARY

Appendix E

File name: C:\Chelmer\Ox\...\Results\North Somerset_Dwelling Led+33%_Summary.csv

Scenario n: Dwelling Led +33%

Scenario d: Scenario to test 53,144 dwellings

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	DW	DW	DW	DW	DW	DW	DW
Migration c	immigration and outmigration levels						

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Total Popul	188900	200600	209371	245186	280059	315764	338767
Total Hous	185009	196831	204915	240697	274921	310040	332110
Natural ch	7	1685	2162	5168	6961	7279	4966
Net migrati	11814	6402	33617	29054	28157	14791	14791
Total Hous	196831	204915	240697	274921	310040	332110	351867
Total comn	3769	4456	4489	5138	5724	6657	6657
Total popu	200600	209371	245186	280059	315764	338767	358524
Labour forc	101911	105275	124265	139934	154694	162158	171310
Total house	86344	91145	106726	122307	137888	148201	156692
Dwellings (	89027	93977	110042	126107	142172	152806	161561

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	35760	36660	37190	42965	51003	60100	66552	70070
16-24	16540	18740	20761	24933	26174	28065	28914	32714
25-34	21900	20800	20941	31598	40515	43290	41297	39455
35-44	27300	30300	27694	29054	33643	43253	49749	49975
45-54	27500	26900	29605	33688	33733	34484	37676	45724
55-64	23400	28200	28335	28893	33209	36788	36008	35944
65-70	11020	12180	14471	17264	16951	17929	20869	21537
71-84	20380	21120	22861	27977	33940	37701	39284	41237
85+	5100	5700	7513	8814	10891	14154	18418	21868
Total	188900	200600	209371	245186	280059	315764	338767	358524

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	18440	18820	18956	21792	25901	30547	33882	35662
16-24	8560	9980	10745	12588	13143	13972	14548	16596
25-34	10800	10300	10867	16421	20328	21425	20375	19528
35-44	13500	15100	13508	14376	17376	22260	24728	24502
45-54	13600	13300	14448	16627	16561	17009	19249	23263
55-64	11600	13800	13925	14120	16152	18082	17556	17629
65-70	5200	5840	7018	8193	8281	8547	10160	10405
71-84	8700	9360	10135	12620	15344	17250	18007	19154
85+	1400	1700	2538	3093	3977	5378	7143	8597
Total	91800	98200	102140	119830	137063	154470	165648	175336

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	17320	17840	18234	21173	25101	29553	32670	34408
16-24	7980	8760	10016	12345	13032	14093	14366	16118
25-34	11100	10500	10074	15177	20187	21865	20922	19927
35-44	13800	15200	14186	14678	16267	20993	25021	25473
45-54	13900	13600	15157	17061	17172	17475	18427	22461
55-64	11800	14400	14410	14773	17057	18706	18452	18315
65-70	5820	6340	7453	9070	8670	9382	10708	11132
71-84	11680	11760	12726	15358	18596	20451	21278	22083
85+	3700	4000	4975	5721	6914	8776	11275	13271
Total	97100	102400	107231	125356	142996	161294	173119	183188

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	8320	8720	9684	11708	14510	16750	17418	17212
4-10.	15680	16060	16100	18953	22433	26971	30011	31277
11-15.	11760	11880	11407	12302	14060	16379	19124	21579
16-17	4320	4720	3848	4645	4739	5576	6105	7328
0-17	40080	41380	41039	47608	55742	65676	72658	77396

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	10	11	11	12	12	12	11
4-10.	0	19	18	18	18	20	20	20
11-15.	0	14	13	12	11	12	13	14
16-17	0	5	4	4	4	4	4	5
0-17	0	48	45	45	46	48	49	49

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1176	1108	1338	1365	1607	1759	2111
16-24	12253	15605	18704	19710	20858	21294	23875
25-34	18823	18398	27852	35578	37984	36209	34614
35-44	26679	24268	25463	29561	37932	43600	43772
45-54	23605	25820	29364	29383	30065	32911	39983
55-64	16513	15858	16501	19231	20946	20282	20540
65-70	2263	3374	3992	3876	4118	4860	4944
71-84	599	844	1051	1230	1184	1243	1471
85+	0	0	0	0	0	0	0
Total	101911	105275	124265	139934	154694	162158	171310

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	10743	12677	17767	23202	28517	32184	33311
Couple	50832	51918	59240	66402	73616	78172	82528
Previously	24768	26550	29718	32703	35755	37845	40852
Total	86344	91145	106726	122307	137888	148201	156692

Comments on Scenario run

Notes:

CHELMER RESULTS FOR SOUTH GLOUCESTERSHIRE: SUMMARY

Appendix E

File name: C:\Chelmer\Ox\...\Results\South Gloucestershire_Dwelling Led+41%_Summary.csv

Scenario n: Dwelling Led

Scenario d: Net completions for 06/11, residual annual average of providing for indigenous and 41% of Bristol

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Solution co POP	DW	DW	DW	DW	DW	DW	DW
Migration c	immigration and outmigration levels						

Note: See bottom of file for further comments on the scenario.

OVERVIEW OF DEMOGRAPHIC CHANGE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036	Total 06-26
Total Popul	245800	257400	264423	301173	332919	364133	382128	
Total Hous	242759	253991	260532	297501	328518	359434	377250	
Natural ch	4981	6683	6038	8987	10945	11654	8851	
Net migrati	6249	-146	30932	22031	19973	6165	6165	
Total Hous	253991	260532	297501	328518	359434	377250	392262	
Total comn	3409	3891	3672	4401	4699	4878	4878	
Total popu	257400	264423	301173	332919	364133	382128	397140	106733
Labour forc	144390	143215	164419	179779	193090	197305	204134	48700
Total house	104896	109021	124163	139306	154448	164297	171855	49552
Dwellings (	106819	111019	126439	141859	157279	167309	175005	50460

CHANGE IN POPULATION: Total population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	50940	49780	49650	54125	61100	69100	75236	78121
16-24	23760	30320	31837	43711	42697	42518	41590	44022
25-34	35400	31600	31592	41194	53249	61534	55673	50817
35-44	39700	42100	36759	34727	39208	46816	56653	62188
45-54	33000	33400	38051	41815	38723	35968	39242	45433
55-64	27600	30900	30161	31335	36989	40213	36703	33206
65-70	12600	13380	15980	17703	16930	18748	22325	22500
71-84	18900	21420	23816	28208	33122	35446	36912	40008
85+	3900	4500	6577	8355	10901	13790	17794	20845
Total	245800	257400	264423	301173	332919	364133	382128	397140

CHANGE IN POPULATION: Male population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	26320	25640	25595	27706	31279	35392	38544	40011
16-24	12280	16160	17273	23102	22520	22448	22196	23523
25-34	17300	15700	16652	22338	28396	32417	29511	27257
35-44	20000	20800	17841	17448	20831	25369	30111	32688
45-54	16400	16800	19333	20803	19138	18276	20926	24622
55-64	13800	15400	14869	15845	18930	20101	18251	17016
65-70	6060	6520	7746	8499	8154	9472	11123	10942
71-84	8240	9580	10760	12555	14681	15698	16723	18539
85+	1100	1400	2215	3024	4209	5258	6886	8147
Total	121500	128000	132284	151320	168138	184431	194271	202745

CHANGE IN POPULATION: Female population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	24620	24140	24055	26419	29821	33708	36692	38110
16-24	11480	14160	14564	20609	20177	20070	19394	20499
25-34	18100	15900	14940	18856	24853	29117	26162	23560
35-44	19700	21300	18918	17279	18377	21447	26542	29500
45-54	16600	16600	18718	21012	19585	17692	18316	20811
55-64	13800	15500	15292	15490	18059	20112	18452	16190
65-70	6540	6860	8235	9204	8776	9276	11202	11558
71-84	10660	11840	13055	15653	18441	19748	20189	21469
85+	2800	3100	4362	5331	6692	8532	10908	12698
Total	124300	129400	132139	149853	164781	179702	187857	194395

CHILD POPULATION: Child population at end of period (number)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	12240	11520	12785	14302	16938	19161	19935	19160
4-10.	22820	21680	20579	23399	26192	30292	33333	34565
11-15.	15880	16580	16287	16423	17970	19649	21967	24396
16-17	5680	6760	7840	8649	8166	8920	9032	10158
0-17	56620	56540	57491	62773	69266	78022	84267	88279

CHILD POPULATION YIELD: Child population per 100 households at end of period (per 100)

	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-3	0	11	12	12	12	12	12	11
4-10.	0	21	19	19	19	20	20	20
11-15.	0	16	15	13	13	13	13	14
16-17	0	6	7	7	6	6	5	6
0-17	0	54	53	51	50	51	51	51

CHANGE IN THE LABOUR FORCE: Total labour force at end of period (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
0-15	1593	2018	2229	2105	2300	2327	2617
16-24	21334	20944	29852	29316	28769	27987	29306
25-34	29556	28680	37516	48462	55824	50517	46192
35-44	38051	34227	32348	36545	43677	52756	58014
45-54	30481	35235	38616	35682	33213	36402	42205
55-64	19820	18899	20256	24154	25496	22807	21155
65-70	2805	2594	2847	2683	3036	3626	3587
71-84	750	618	755	832	775	883	1058
85+	0	0	0	0	0	0	0
Total	144390	143215	164419	179779	193090	197305	204134

HOUSEHOLDS AT END OF PERIOD BY HOUSEHOLD TYPE (number)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2031-2036
Single	13232	14963	20333	25961	31280	34522	34956
Couple	65952	66575	73776	81042	88379	92877	97258
Previously	25712	27483	30054	32302	34789	36898	39640
Total	104896	109021	124163	139306	154448	164297	171855

Comments on Scenario run

Notes: