Worcestershire SHMA

Economic Activity Rates

Sensitivity Testing

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For the attention of:

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1. Context

SWDP examination

1.1 During examination of the South Worcestershire Development Plan (SWDP), a number of issues were raised in relation to the Worcestershire Strategic Housing Market Assessment (SHMA) 2012 Sensitivity Scenario 2.

1.2 The locally-derived total housing provision target as set-out in SWDP 3 is based on this SHMA Sensitivity Scenario 2. The SHMA Sensitivity Scenario 2 was derived from the SHMA Core Scenario 4, an employment-led forecast, which incorporated age-specific economic activity rates.

1.3 Two specific issues, identified by the Inspector, were as follows:

(a) The justification for the selection of the incremental increases to the economic activity rates used in the Sensitivity Scenario 2;
(b) The requirement that the SHMA Sensitivity Scenario 2 was re-run using a range of different economic activity rate profiles.

1.4 In response to the Inspector's request, this report presents the results of the SHMA Sensitivity Scenario 2, re-produced using five different economic activity rate profiles.

Pension age changes

1.5 The estimation of future rates of economic participation is a challenging task that needs to consider a number of factors:

- Changes to the State Pension age for men and women;
- Inadequate personal pension provision which may require individuals to retire later;
- A healthier old-age population, within which individuals will choose to retire later.

1.6 State Pension age and retirement age are separate issues and the former is not necessarily a determinant of the latter, although the two are often confused when considering future rates of economic participation in the labour force.

1.7 The State Pension age for women is gradually increasing from 60 to 65 by 2018, bringing it in line with that for men. Between December 2018 and April 2020, the State Pension age for both men and women will then rise to 66.

Sensitivity analysis

1.8 There is no definitive method for estimating the level of economic participation associated with the older age-groups. Demographic analysis requires that assumptions are made with regard to how economic activity rates may change over time.

1.9 The 'employment-led' scenario used in the Worcestershire SHMA calculated its economic activity rates to take account of increasing labour force participation in the 50-64 and 65+ age-groups.

1.10 To test the impact of a range of different economic assumptions upon population and household growth, Edge Analytics has re-produced the SHMA Sensitivity Scenario 2 with five alternative economic activity rate profiles, the results of which are presented in this report.

2. Methodology

2.1 The SHMA 'Sensitivity Scenario 2' was tested using POPGROUP (and Derived Forecast) technology. Edge Analytics has re-produced this scenario with five different economic activity rate profiles (see Figure 1). All other data inputs and assumptions remained as they were when the original SHMA was completed. The five scenarios are defined as follows.

SENS A

2.2 In this scenario, economic activity rates replicate those used in the SHMA Sensitivity Scenario 2. For the scenario period 2011-2030, economic activity rates for those aged 50–64 were incrementally increased by 10%. For those aged 65+, economic activity rates were incrementally increased by 50%.

SENS B

2.3 Growth in economic activity rates have been set at half the growth rates defined in SENS A.

SENS C

2.4 Growth in economic activity rates have been set at one-quarter the growth rates defined in SENS A.

SENS D

2.5 In this scenario, the economic activity rate profile is the same as that used in a recent analysis produced by Edge Analytics for the South Worcestershire councils. In this analysis, economic activity rates for the 50–65+ age range were increased by a consistent 10% over the 2011–2030 period, dampening the effect of change in the 65+ age-group.

SENS E

2.6 With the choice of economic activity rate profile being a source of increasing scrutiny at inspection, Edge Analytics, in consultation with its partner organisations, has been applying a further variation on the economic activity rates in its most recent analyses.

2.7 The fifth and final sensitivity uses an economic activity rate profile that has a more refined age-structure than SENS A to D (12 age categories rather than 6) and that only applies changes to the 60-69 age-range that are consistent with modifications to the State Pension age.

2.8 Economic activity rates have been incrementally increased in the following way:

- Women aged 60–64: 40% increase to 2020, fixed thereafter
- Women aged 65–69: 20% increase to 2020, fixed thereafter
- Men aged 60–64: 5% increase to 2020, fixed thereafter
- Men aged 65–69: 10% increase to 2020, fixed thereafter

2.9 The impact of each of the economic activity rate assumptions is illustrated (Figure 1). In running the employment-led scenario, a higher level of economic activity in the older age-groups will sustain a larger labour-force and therefore will reduce the need for increased in-migration to accommodate the specific jobs-growth target that has been defined.

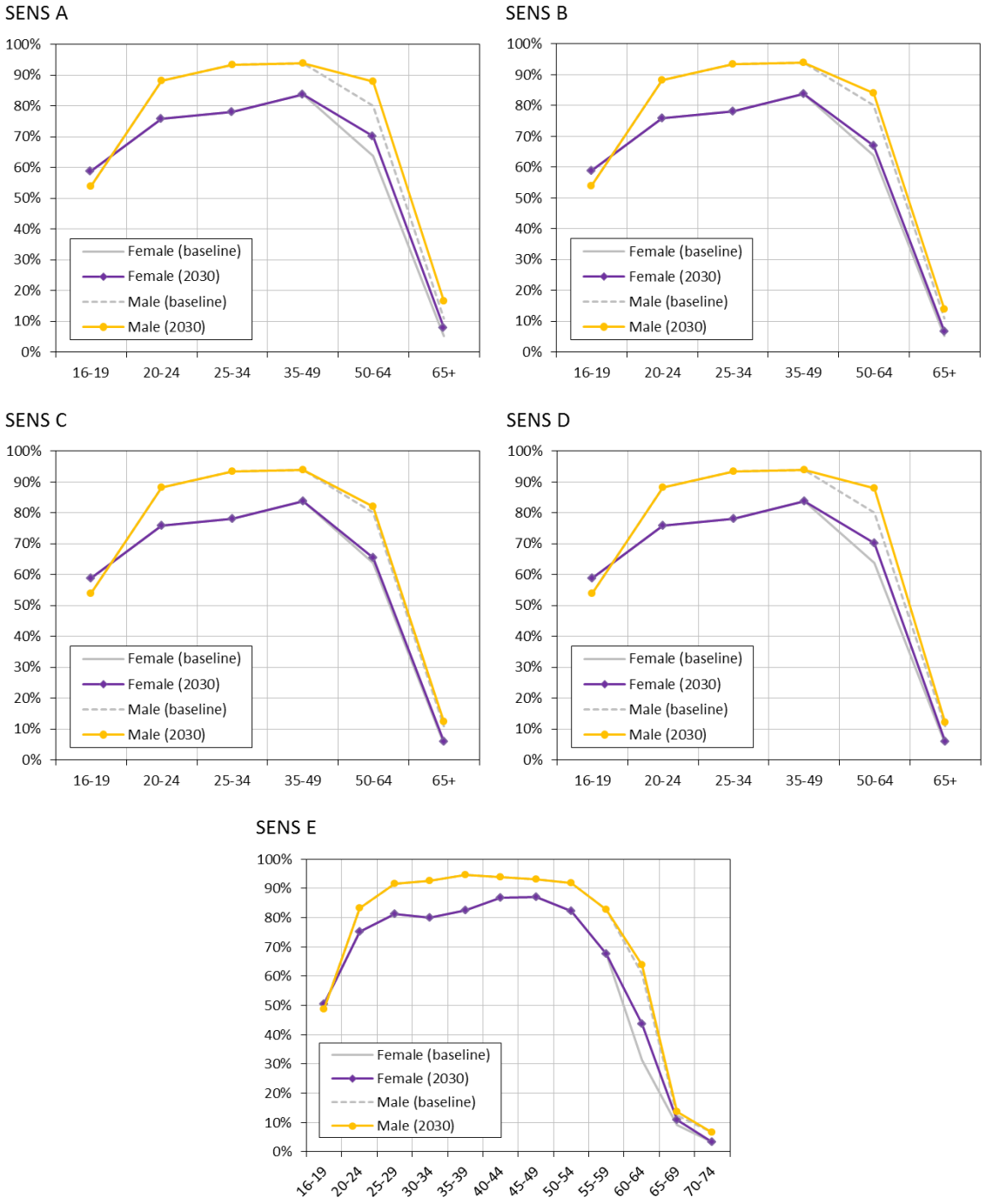

Figure 1: Economic activity rate profiles used in the five sensitivity scenario alternatives.

3. Results

3.1 Five scenario alternatives have been produced, based on the SHMA Sensitivity Scenario 2. The output presented below (Table 1 to Table 5) is in the format of SHMA table 6.22, as required by the Inspector.

3.2 The SENS A scenario alternative replicates the SHMA Sensitivity Scenario 2. Over the forecast period (2006–2030), Worcestershire's private household population increases by over 57,000. On average, 1,971 households would be formed per year under this scenario.

3.3 In each of the other four scenario alternatives (SENS B to E), population and household growth are higher as lower economic activity rates result in a smaller labour force that requires higher in-migration to meet employment targets set by the underlying jobs forecast.

3.4 In the SENS B alternative, in which economic activity rates are increased at half the rate of increase in SENS A, the number of households increases by over 52,000. This equates to an increase in the private household population of 70,080. In the SENS C alternative, population and household growth are higher, a reflection of the in-migration required to maintain the size of the labour force as the population ages and retires.

3.5 Household and population growth in the SENS D alternative are slightly lower than in SENS B and C. Over the forecast period, 51,403 households would be formed, an average of 2,142 per year.

3.6 Population and household growth are highest under scenario alternative SENS E, which has applied the smallest uplift to older-age economic activity rates. Between 2006 and 2030, the private household population increases by 87,648 and the number of households by 59,739.

Table 1: Sensitivity Scenario 2 SENS A: Population and Household Projection Data

Sensitivity 2 - SENS A	Private household population			Household Size			Households			
	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	Annual Change (24 years)
Bromsgrove	89,241	98,953	9,712	2.46	2.26	-0.19	36,319	43,697	7,378	307
Malvern Hills	71,426	81,801	10,376	2.36	2.18	-0.18	30,218	37,523	7,305	304
Redditch	78,800	92,486	13,685	2.34	2.14	-0.19	33,734	43,176	9,442	393
Worcester City	91,705	101,676	9,971	2.25	2.09	-0.16	40,766	48,675	7,909	330
Wychavon	114,327	119,709	5,382	2.42	2.19	-0.22	47,322	54,603	7,281	303
Wyre Forest	96,435	104,323	7,888	2.29	2.08	-0.21	42,060	50,042	7,982	333
Worcestershire	541,934	598,948	57,014	2.35	2.16	-0.20	230,418	277,717	47,298	1,971

Table 2: Sensitivity Scenario 2 SENS B: Population and Household Projection Data

Sensitivity 2 - SENS B	Private household population			Household Size			Households			
	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	Annual Change (24 years)
Bromsgrove	89,241	101,276	12,035	2.46	2.27	-0.18	36,319	44,563	8,244	343
Malvern Hills	71,426	84,021	12,595	2.36	2.19	-0.17	30,218	38,360	8,142	339
Redditch	78,800	94,351	15,551	2.34	2.15	-0.19	33,734	43,972	10,239	427
Worcester City	91,705	103,426	11,721	2.25	2.09	-0.16	40,766	49,445	8,679	362
Wychavon	114,327	122,839	8,512	2.42	2.20	-0.22	47,322	55,862	8,540	356
Wyre Forest	96,435	106,901	10,466	2.29	2.09	-0.20	42,060	51,140	9,081	378
Worcestershire	541,934	612,814	70,880	2.35	2.16	-0.19	230,418	283,342	52,924	2,205

Table 3: Sensitivity Scenario 2 SENS C: Population and Household Projection Data

Sensitivity 2 - SENS C	Private household population			Household Size			Households			
	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	Annual Change (24 years)
Bromsgrove	89,241	102,449	13,208	2.46	2.28	-0.18	36,319	45,000	8,680	362
Malvern Hills	71,426	85,146	13,720	2.36	2.20	-0.17	30,218	38,782	8,564	357
Redditch	78,800	95,294	16,494	2.34	2.15	-0.19	33,734	44,374	10,640	443
Worcester City	91,705	104,305	12,599	2.25	2.09	-0.16	40,766	49,832	9,066	378
Wychavon	114,327	124,429	10,102	2.42	2.20	-0.21	47,322	56,500	9,178	382
Wyre Forest	96,435	108,209	11,774	2.29	2.09	-0.20	42,060	51,697	9,638	402
Worcestershire	541,934	619,831	77,897	2.35	2.17	-0.19	230,418	286,185	55,767	2,324

Table 4: Sensitivity Scenario 2 SENS D: Population and Household Projection Data

Sensitivity 2 - SENS D	Private household population			Household Size			Households			
	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	Annual Change (24 years)
Bromsgrove	89,241	100,660	11,419	2.46	2.27	-0.19	36,319	44,335	8,016	334
Malvern Hills	71,426	83,542	12,116	2.36	2.19	-0.18	30,218	38,181	7,963	332
Redditch	78,800	93,755	14,955	2.34	2.14	-0.19	33,734	43,719	9,986	416
Worcester City	91,705	102,767	11,062	2.25	2.09	-0.16	40,766	49,154	8,388	349
Wychavon	114,327	122,112	7,785	2.42	2.20	-0.22	47,322	55,571	8,249	344
Wyre Forest	96,435	106,243	9,809	2.29	2.09	-0.20	42,060	50,860	8,801	367
Worcestershire	541,934	609,081	67,147	2.35	2.16	-0.19	230,418	281,821	51,403	2,142

Table 5: Sensitivity Scenario 2 SENS E: Population and Household Projection Data

Sensitivity 2 - SENS E	Private household population			Household Size			Households			
	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	Annual Change (24 years)
Bromsgrove	89,241	104,362	15,121	2.46	2.28	-0.17	36,319	45,723	9,404	392
Malvern Hills	71,426	86,807	15,381	2.36	2.20	-0.16	30,218	39,421	9,203	383
Redditch	78,800	96,437	17,637	2.34	2.15	-0.19	33,734	44,881	11,147	464
Worcester City	91,705	105,107	13,402	2.25	2.09	-0.16	40,766	50,184	9,418	392
Wychavon	114,327	127,026	12,699	2.42	2.21	-0.21	47,322	57,551	10,228	426
Wyre Forest	96,435	109,842	13,407	2.29	2.10	-0.20	42,060	52,397	10,338	431
Worcestershire	541,934	629,582	87,648	2.35	2.17	-0.18	230,418	290,157	59,739	2,489

4. Summary

4.1 The SHMA Sensitivity Scenario 2 has been re-run using a range of different economic activity rate profiles. SENS A reproduces the original scenario, tested against a suite of alternative economic activity rate profiles, all of which show a higher rate of household and population growth than the SHMA Sensitivity Scenario 2.

Table 6: Sensitivity scenario summary - Worcestershire

Worcestershire										
Scenario	**Private household population**			**Household Size**			**Households**			
	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	Annual Change (24 years)
SENS A	541,934	598,948	57,014	2.35	2.16	-0.20	230,418	277,717	47,298	1,971
SENS B	541,934	612,814	70,880	2.35	2.16	-0.19	230,418	283,342	52,924	2,205
SENS C	541,934	619,831	77,897	2.35	2.17	-0.19	230,418	286,185	55,767	2,324
SENS D	541,934	609,081	67,147	2.35	2.16	-0.19	230,418	281,821	51,403	2,142
SENS E	541,934	629,582	87,648	2.35	2.17	-0.18	230,418	290,157	59,739	2,489

Table 7: Sensitivity scenario summary - South Worcestershire*

South Worcestershire										
Scenario	**Private household population**			**Household Size**			**Households**			
	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	2006	2030	Change 2006 - 2030	Annual Change (24 years)
SENS A	277,458	303,186	25,728	2.35	2.15	-0.19	118,306	140,802	22,496	937
SENS B	277,458	310,286	32,828	2.35	2.16	-0.19	118,306	143,667	25,361	1,057
SENS C	277,458	313,879	36,421	2.35	2.16	-0.18	118,306	145,114	26,808	1,117
SENS D	277,458	308,422	30,964	2.35	2.16	-0.19	118,306	142,906	24,600	1,025
SENS E	277,458	318,940	41,482	2.35	2.17	-0.18	118,306	147,156	28,850	1,202

*Malvern Hills, Worcester City and Wychavon