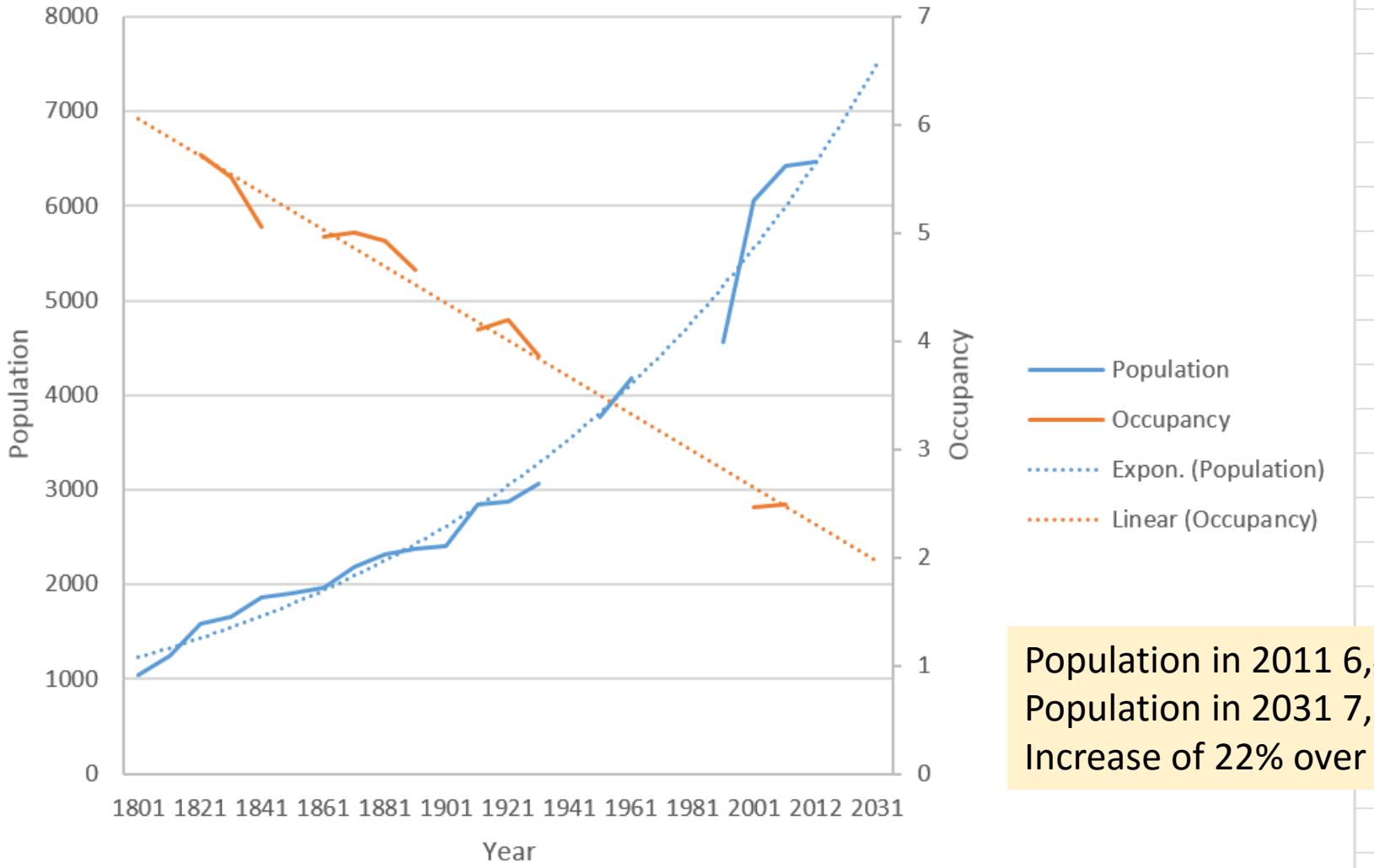
Population Growth



Population in 2011 6,400?
Population in 2031 7,800?
Increase of 22% over 2011

Population increase = 4 times that of 1821

Dwellings increase = 9.3 times that of 1821

St Albans City & District Council

Housing growth forecasts

Demographic analysis & forecasts

October 2013

edge analytics

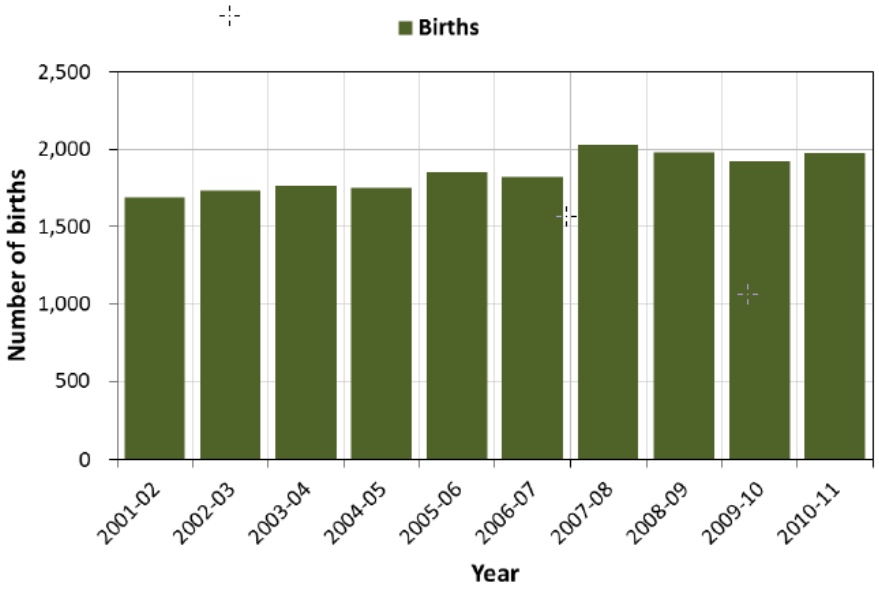
www.edgeanalytics.co.uk

District Projections – POPGROUP Software model

- Used the following datasets
  - 2011 Census (ONS)
  - Revised mid-year population estimates for 2002-10 (ONS)
    - Used to check consistency with components of change (births, deaths, internal migration, external migration)
  - 2011-based household projections for 2011 to 2021 (CLG)
  - Labour Force Survey (NOMIS)
- We are exposed to a diverse mix of:
  - Economic linkages
  - Commuting behaviour
  - Migration dynamics

Key Inputs

- Births and Fertility
  - Historical data taken from ONS (male and female)
  - Uses national age-specific forecast fertility rates with a St Albans specific differential added
  - Takes account of long term trends in age-specific fertility rates

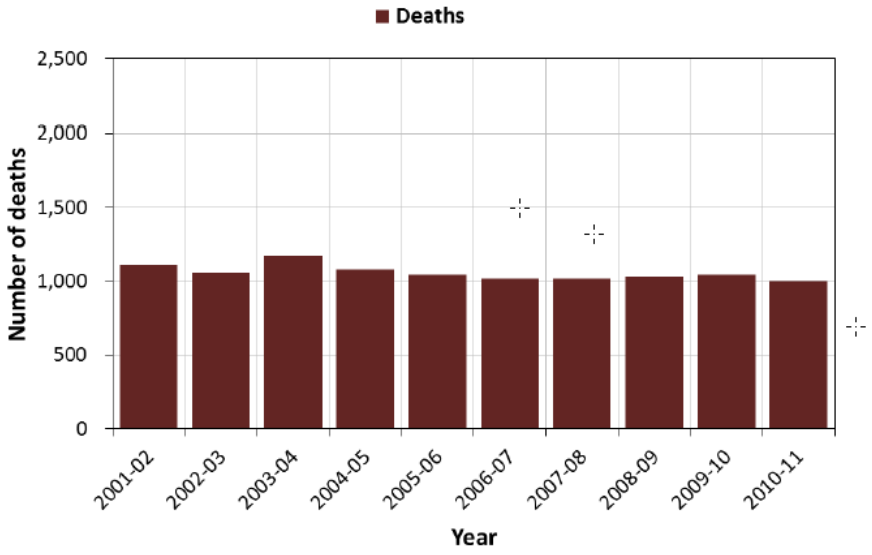


Source: ONS Vital Statistics

Figure 2: St Albans District - births 2001-02 to 2010-11

Key Inputs - Ctd

- Deaths and Mortality
  - Historical mid-year counts of deaths by age and sex
  - The national age-specific forecast mortality rate is included with a district specific differential added
  - Long term assumptions on deaths are included



Source: ONS Vital Statistics

Figure 3: St Albans District - deaths 2001-02 to 2010-11

Key Inputs - Ctd

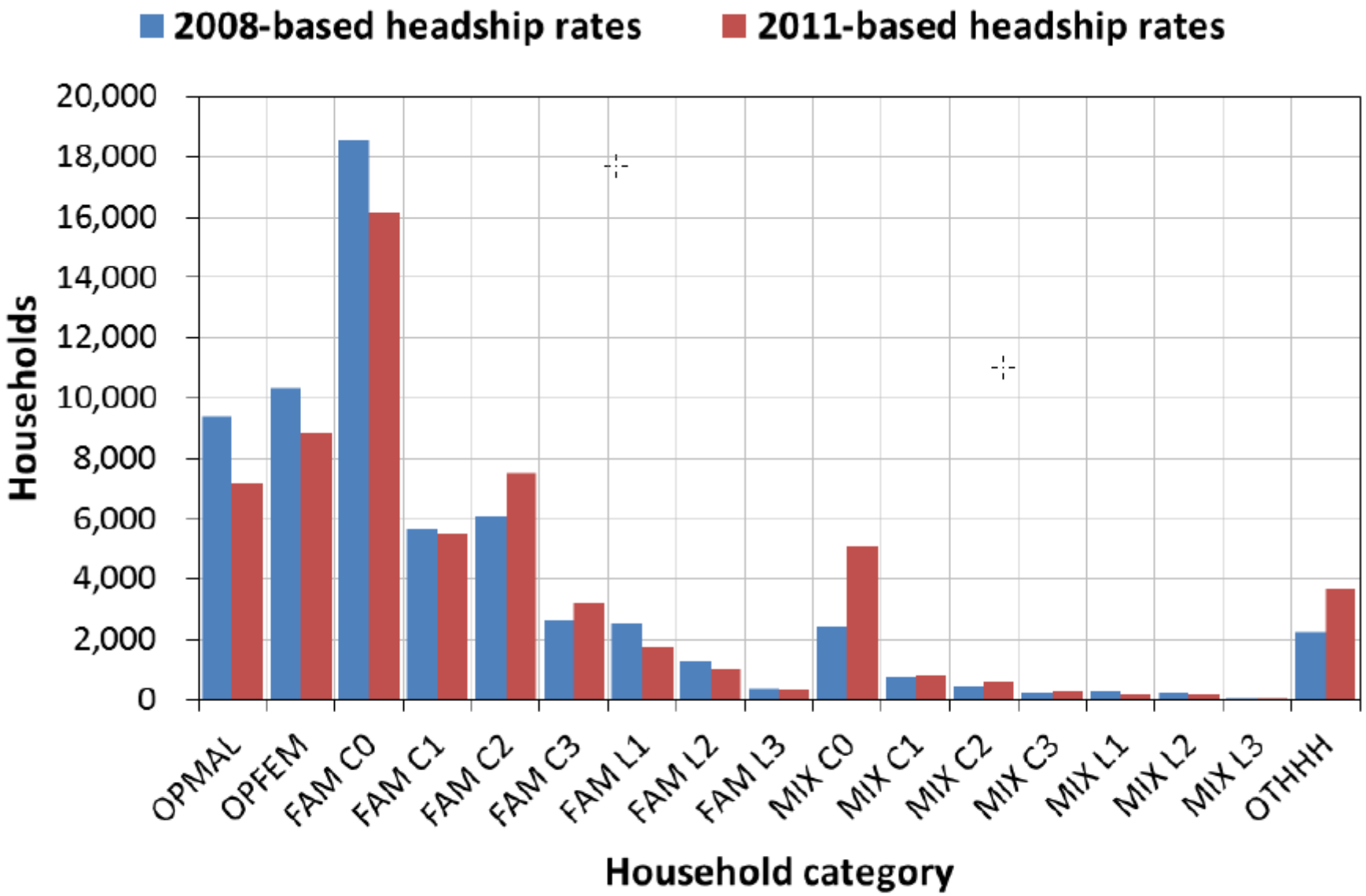
- Internal Migration (UK)
  - Uses GP patient register – captures movement of patients from one GP to another (some under-registration for young males)
  - Age and sex dependencies
  - Adjusted based on historical inward and outward district migration and other issues
- International Migration
  - Uses historical ONS figures - includes asylum
  - Adjusted based on historical inward and outward migration figures
  - Two extreme figures (p.a.) are used in our model: 240 and -85. 143 also used because of uncertainty in the numbers

Key Inputs - Ctd

- Households
  - Project number of households formed
  - **"Headship Rate"** refers to the likelihood of a particular type of household being created.
  - Take into account type of accommodation required and vacancy rate (=dwellings-households)
  - Vacancy rate in St Albans is historically a constant 3%

Table 2: Household type classification

CLG code	DF label	Household type
OPM	OPMAL	One person households: Male
OPF	OPFEM	One person households: Female
OCZZP	FAMC0	One family and no others: Couple: No dependent children
OC1P	FAMC1	One family and no others: Couple: 1 dependent child
OC2P	FAMC2	One family and no others: Couple: 2 dependent children
OC3P	FAMC3	One family and no others: Couple: 3+ dependent children
OL1P	FAML1	One family and no others: Lone parent: 1 dependent child
OL2P	FAML2	One family and no others: Lone parent: 2 dependent children
OL3P	FAML3	One family and no others: Lone parent: 3+ dependent children
MCZDP	MIX C0	A couple and one or more other adults: No dependent children
MC1P	MIX C1	A couple and one or more other adults: 1 dependent child
MC2P	MIX C2	A couple and one or more other adults: 2 dependent children
MC3P	MIX C3	A couple and one or more other adults: 3+ dependent children
ML1P	MIX L1	A lone parent and one or more other adults: 1 dependent child
ML2P	MIX L2	A lone parent and one or more other adults: 2 dependent children
ML3P	MIX L3	A lone parent and one or more other adults: 3+ dependent children
OTAP	OTHHH	Other households
TOT	TOTHH	Total



Source: CLG; Edge Analytics. Using 'SNPP-2010' population projection

Figure 8: Impact of the 2011 headship rates on the scale of household growth (2011-21)

Headship Rates

Table 3: Change in the number of household 2011-21 using 2008-based and 2011-based headship rates

	Households			Change 2011-21	
	2011	2016	2021	Total	%
2008-based headship rates	56,449	59,862	63,421	6,972	12.4%
2011-based headship rates	56,391	59,281	62,395	6,003	10.6%

Source: CLG; Edge Analytics. Using 'SNPP-2010' population projection

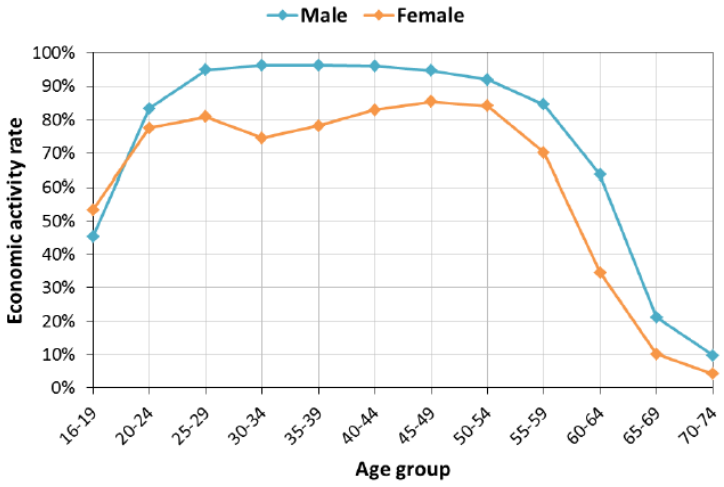
Table 4: Change in average household size 2011-21 using 2008-based and 2011-based headship rates

	Population / households		
	2011	2016	2021
2008-based headship rates	2.47	2.46	2.44
2011-based headship rates	2.48	2.48	2.48

Source: CLG; Edge Analytics. Using 'SNPP-2010' population projection

Key Inputs - Ctd

- Employment and economic activity
  - Economic activity
    - Age/sex related
    - Change due to pension age change
  - Unemployment rate
    - 4% - historically constant
  - Commuting ratio
    - Size of labour force (S)
    - Number of jobs (J)
    - Ratio: S/J=1.19 indicating net outflow of commuters



Source: NOMIS; ONS

Figure 4: Economic activity rates 2011 – St Albans District

Population modelled using POPGROUP

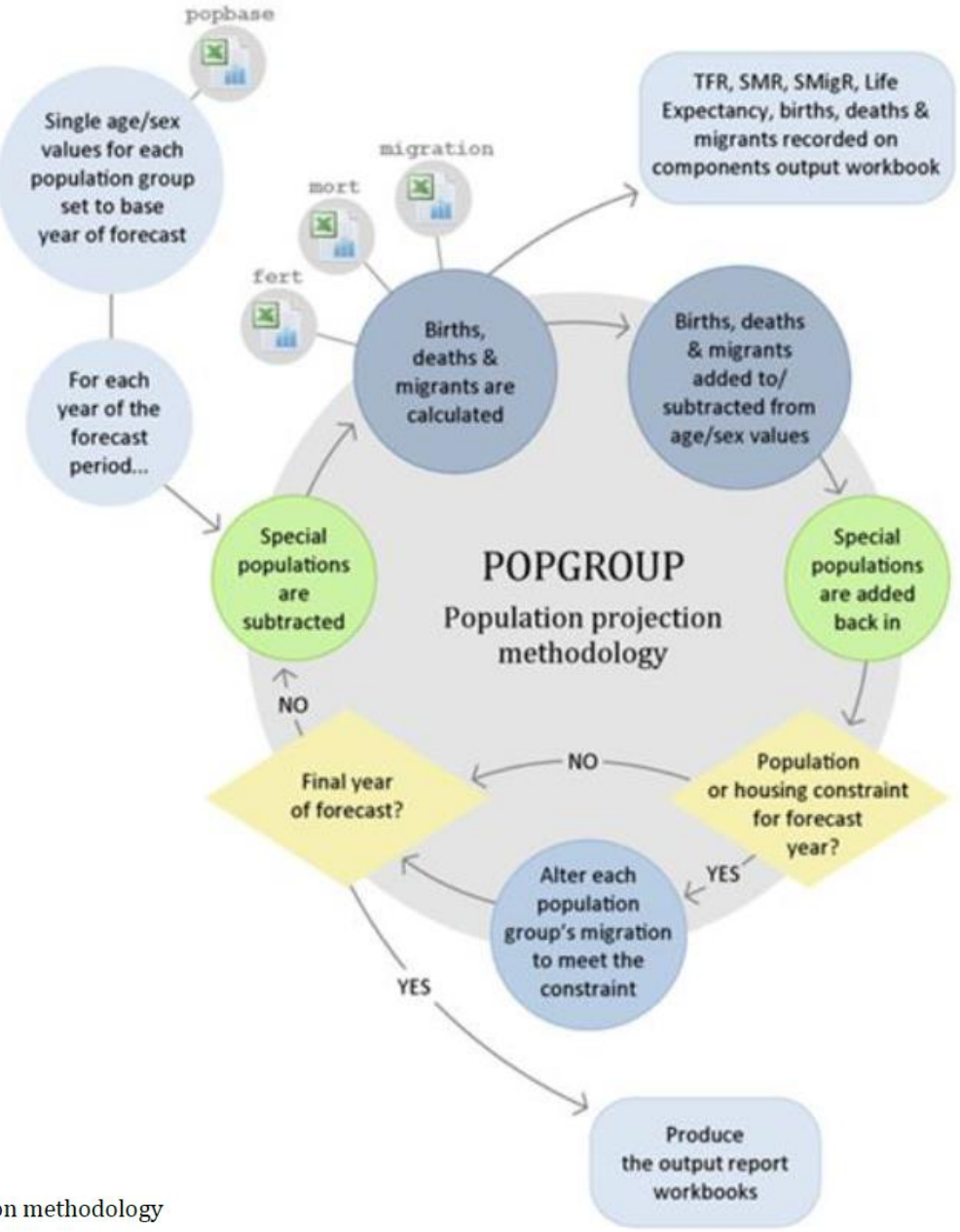


Figure 5: POPGROUP population projection methodology

$$D_{a,s,u,y,d,g} = \frac{P_{a,s,u,y,g} \quad R_{a,s,u,y,d,g}}{100}$$

- D Derived Category Forecast
- P Population 'at risk' Forecast
- R Derived Category Rates
- a Age-group
- s Sex
- u Sub-population
- y Year
- d Derived category
- g Group (usually an area, but can be an ethnic group or social group)

Figure 6: Derived Forecast Model: household and labour force projection methodology

Issues

- The analysis has to be robust – inspection
- No single definitive view of growth – mix of economic, demographic and national policy issues ultimately determining the speed of change
- Development of plan made considerably more challenging by the release of new data
- Transparency and benchmarking
- Forecasts are set using historical 5 year trends. Is this realistic given last 5 years of economic downturn?

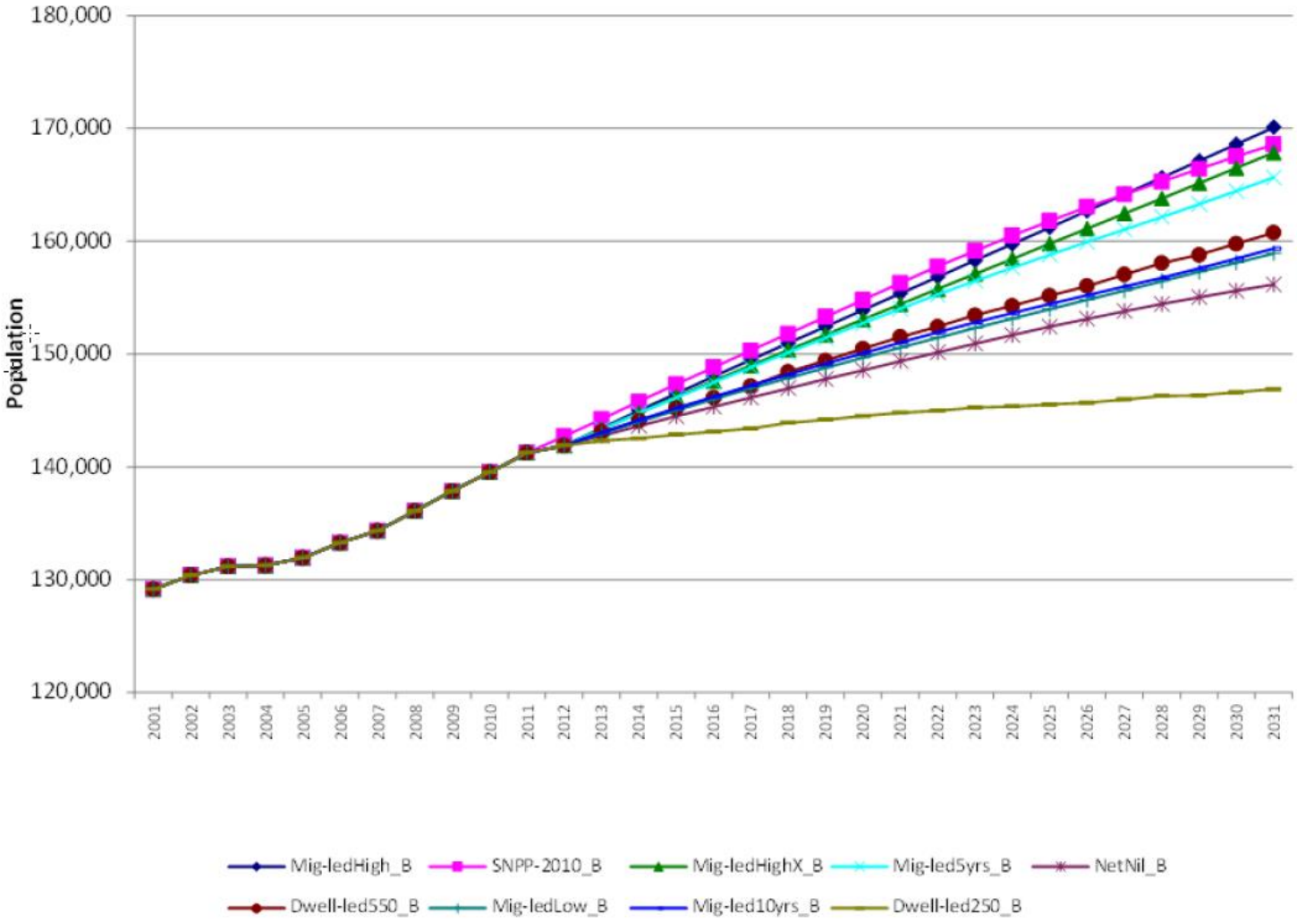
Table 1: Scenario definition

Scenario type	Scenario name	Scenario description
Official	'SNPP-2010'	A trend projection consistent with the ONS 2010-based sub-national population projection.
Trend	'Mig-led5yrs' 'Mig-led10yrs'	Alternative trend projections that use the latest evidence from the revised 2002-10 mid-year population estimates to set migration assumptions.
	'Mig-ledHighX' 'Mig-ledHigh' 'Mig-ledLow'	Further trend projections (defined by St Albans City & District Council) that use a range of assumptions to illustrate the implications of 'high' and 'low' migration assumptions
	'NetNil'	An alternative trend scenario that assumes a zero net migration balance.
Dwelling-led	'Dwell-led250' 'Dwell-led550'	Housing-led scenarios, with dwelling growth trajectories of 250 and 550 dwellings per year determining demographic change.

Table 5: Scenario definition summary

	Household headship rates	
Scenario type	**Option 'A' - CLG 2011**	**Option 'B' - CLG 2008**
Official	SNPP-2010_A	SNPP-2010_B
Trend	Mig-led5yrs_A Mig-led10yrs_A Mig-ledHighX_A Mig-ledHigh_A Mig-ledLow_A NetNil_A	Mig-led5yrs_B Mig-led10yrs_B Mig-ledHighX_B Mig-ledHigh_B Mig-ledLow_B NetNil_B
Dwelling-led	Dwell-led250_A Dwell-led550_A	Dwell-led250_B Dwell-led550_B

Option 'B' - CLG 2008-based headship rates



Scenario	Change 2011 - 2031				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Mig-ledHigh_B	28,838	20.4%	14,494	25.7%	625	747	426
SNPP-2010_B	27,329	19.3%	13,710	24.3%	397	707	412
Mig-ledHighX_B	26,602	18.8%	13,695	24.3%	533	706	378
Mig-led5yrs_B	24,398	17.3%	12,834	22.8%	437	662	325
NetNil_B	14,911	10.6%	10,772	19.1%	0	555	216
Dwell-led550_B	19,503	13.8%	10,526	18.7%	207	550	224
Mig-ledLow_B	17,680	12.5%	10,370	18.4%	165	535	179
Mig-led10yrs_B	18,093	12.8%	9,960	17.7%	142	514	200
Dwell-led250_B	5,646	4.0%	4,999	8.9%	-358	250	-96

('B') CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter

Figure 17: St Albans District, scenario forecasts 2011-31 ('B')

Table 6: Scenario dwelling growth summary

Scenario	Estimated dwellings per year		
	2011-31		
	Option 'A' - CLG 2011	Option 'B' - CLG 2008	Average
Mig-ledHigh	661	747	704
Mig-ledHighX	624	706	665
SNPP-2010	619	707	663
Mig-led5yrs	584	662	623
Dwell-led550	550	550	550
NetNil	469	555	512
Mig-ledLow	468	535	501
Mig-led10yrs	436	514	475
Dwell-led250	250	250	250

(A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021

(B) CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter

Implications for Wheathampstead

- If we say no building at all, does the population increase?
- Can we scale the POPGROUP numbers for Wheathampstead?
  - e.g. we are 6400/141000 = 4.5% of the district
  - If we build 11 dwellings/yr does that mean our population led by dwellings increases by only 4%?
  - If we have “net_nil” migration does that mean our population increases by 10% and we need to build 19% more dwellings (33 per year)
- What are our target Headships?
- What policies can we devise to support the plan?