The Public Practice
Making sense of the Census

Community Projector 2010   User Manual

> The Community Projector is an interactive planning calculator that uses the latest available data to create consistent projections for the population and dwellings of a Local Government Area, and calculate the contribution to growth of new dwellings of different types and sizes.

Starting the Community Projector

The Community Projector is provided as an Excel workbook called *Projector2010n.xls*, where n is the version number. It prints out as a 27-page report, with explanatory text and tables that progressively calculate population, dwelling numbers and occupancies for an area.

The Community Projector workbook has three sheets –

❑ The *Projector* sheet is about 1000 rows long and has the main report,

❑ The *Data* sheet contains the local area data, and

❑ The *Tables* sheet has some Census tables from 2001 and 2006.

To start the Projector, open Excel, check that macros are enabled (so the program can run), then open the Projector2010 spreadsheet. The Projector opens as a normal Excel spreadsheet.

❑ A License Note will appear, and you must click agreement to the conditions in order to proceed.

Select your printer and Preview the Projector report to check it fits neatly. The Print Area is set for the whole report (but you can change this to print parts). If the report does not fit neatly onto pages (eg a row flows over onto its own page, or a column does not fit), adjust the margins so it fits for your printer.

Note that the Projector sheet is "protected" every time it updates, to restrict data entry only to the allowed areas (yellow/orange cells). If you need to adjust other parts of the spreadsheet (eg to improve layout), you must unprotect the spreadsheet first. There is no password.

Using the Community Projector

The Community Projector calculates future dwelling numbers and occupancies from the baseline of the 2006 Census count. These calculations are based on assumptions which the user adjusts until a realistic scenario is calculated. Assumptions must be made for trends in dwelling construction and usage – the default assumptions are that 2001 to 2006 trends are followed.

The essential task of the user is to modify these assumptions to achieve a development scenario that is reasonable and probable.

You can alter assumptions in the Projector either directly into the spreadsheet or by using the Control Panel. Clicking the Shield icon on the spreadsheet (just to the right of the report area) makes the Control Panel appear.

Once assumptions have been set, clicking the Update button on the Control Panel runs the Projector model for each selected year, and summarises the results into the Executive Summary and the main Projections Table. The graph updates. The scenario is ready to print.

You can alter the assumptions and run as many scenarios as you want, until you have a projection which is reasonable with defensible assumptions.

Whenever you update a scenario, the spreadsheet is locked, allowing data to be entered only in the yellow or orange cells containing the assumptions. You can unlock the spreadsheet if you wish.

The initial data

Your Community Projector comes loaded with data for your area, region and state/city.

Some data is from the 2001 and 2006 Censuses, since these provide the most accurate count of dwellings and occupancies. Population and dwelling data is loaded for every Census Collectors District (CCD) or in your Local Government Area. These CCDs are added into the localities you want, such as suburbs, wards, townships or districts. Projections are made for every locality.

Selected Census tables giving dwelling, bedroom and vacancy data for the LGA are loaded. This data is not available at the CCD level.

From other ABS sources, recent building approvals data and population estimates are loaded. Any other population projections for your LGA can be entered for comparison with the Projector modelling.

The Community Projector Control Panel

The Control Panel allows you to see and amend many assumptions underlying the projections, update the projections, look at various parts of the Projector report, and print any scenario you want.

Buttons

Blue buttons let you quickly see any part of the Projector report

Reset buttons reset trends to a pre-set formula based on Census trends (see below)

Alter buttons let you alter assumptions by factoring the settings up or down.

Update runs the Projector model for each year set in the Main Table, updating this and the Executive Summary.

Print opens the Excel Print Preview window, from where you can select the printer, adjust the margins (if needed to make the report fit neatly), and print all or part of the report.

Email opens your email program to make it easy to ask questions if they arise.

Save saves the Projector, as is. SaveAs saves the Projector under a different name, to save a scenario.

Close Menu closes the Control Panel so you return to the Projector in Excel.

Looking around

You can move the spreadsheet under the Control Panel using the **look** arrow buttons, which move the view of the Projector up/down or left/right

The **zoom** arrow buttons will zoom in or out, showing more or less of the Projector.

Blue buttons let you quickly see specific sections of the Projector report

Tuning

There are a number of buttons on the Control Panel that let you alter or reset some of the underlying assumptions. More detail on these is given later.

Reset buttons

The [Reset] buttons set the assumption back to a default formula based on Census trends.

- ❑ **Dwellings**: sets the dwelling changes in Table 3 to the rates over 2001 to 2006.
- ❑ **Institutions**: sets the annual change rate in non-private (institutional) dwellings (Table 9) in each locality as the average rate over 2001 to 2006 for the locality, the LGA, region and state.
- ❑ **Occupancy**: sets the annual occupancy change rate in Table 7 to the rates over 2001 to 2006.
- ❑ **Composition**: sets the projected composition of dwellings (ie % of houses, semis and flats with 0-1, 2, 3 and 4+ bedrooms) in Table B7 to the 2006 rates.
- ❑ **Vehicles**: sets the projected change rate in vehicles per dwelling to the rates over 2001 to 2006.
- ❑ **Vacancy**: sets the anticipated long-term vacancy rates in 2031 (in Table 2) to the 2006 rates.
- ❑ **Occupancy limits**: sets the maximum and minimum occupancy rates for each type of dwelling to the highest and lowest across the localities in 2006.
- ❑ **Locality count**: adjusts visible rows and heights in locality tables
- ❑ **Dwg Limits**: the [Clear] button deletes any dwelling limits set in Table 3.

Some settings in the Control Panel

Projection Years and Planning Period

In the summary Table 1, there is a column for each year projected. You can enter any years you want in these columns. The start and end year of any planning period should be included. When you Update the Projector, it calculates each of these years.

The Planning Period is the period reported in the Projector Executive Summary. You enter the start and end years you want into the Control Panel. These must be two of the column years

Focus

The Focus Year is the year reported in the bulk of the Projector, illustrating the projection calculations. You enter any year you want into the Control Panel. It does not have to be one of the Projection Years.

Naming

You enter the name of the LGA, as it is to be reported in the Projector.

If you want to change locality names, do so in the Data Sheet by changing the names in the first column of the Data Table.

To add new localities, do so in the main Data Table

- ❑ Enter the locality name and the data (eg by adding together CCDs into a new area) in a blank row in the Data Table.
- ❑ If there are no spare rows, do NOT add rows. You will have to replace an area.
- ❑ Leave a blank row between localities included in the LGA total, and others of interest.
- ❑ Then alter the Locality number in the Control Panel, and [Reset] the row heights in tables.

Locality

You enter the name of the generic name of the localities, e.g. 'suburb' or 'district', for use in the Projector text. If you change the Count of localities reported in the Projector, record this here.

- ❑ You enter the number of localities in the locality tables, which together add up to the LGA.
- ❑ You enter the number of other localities, as shown in the locality tables, for which you want projections, but which are not included in the LGA total (even if in the LGA).
- ❑ The [Reset] Button adjusts the tables to hide unwanted rows, using these counts.

Setting Assumptions

You can alter assumptions in any of the yellow / orange cells directly into the spreadsheet, or you can use the Control Panel to alter or reset key assumptions.

Assumptions are marked in the Projector by showing them in yellow cells:

Long-term vacancy rates	(enter future vacancy rates for dwelling types here:)	5.7%	6.3%	8.1%

If alternative assumptions are types into any yellow cells, they turn orange to show they have been altered from the default formula:

Long-term vacancy rates	(enter future vacancy rates for dwelling types here:)	5.7%	7.0%	8.1%

Dwelling Limits

Dwelling limits can be set in Table 3 for houses, semis and flats in each locality, to reflect available opportunities. When the number of dwellings reaches this limit, it will no longer increase, regardless of the rate set. This will constrain population growth.

❑ In Tables 3 and 4, showing the projected number of dwellings, the cells are shaded pink if the number has reached the limit.

❑ Dwelling limits can be set based on a study of development opportunities in each locality, or in order to constrain cumulative growth to a desired target.

In the spreadsheet: You can enter numbers into the yellow cells under 'Dwelling Limits' in Table 3. A blank cell means no limit is set. Totals are not calculated as they are not relevant.

In the Control Panel: You can Show or Clear the Dwelling Limits, but can only enter new limits directly onto the spreadsheet by closing the Control Panel.

Dwelling limits		
houses	semi/town-houses	flats / other
120	800	800
2,400	700	4,000
300	900	900
650	250	800
2,600	1,500	3,100
320	2,100	1,400
1,200	700	1,700
1,700	400	2,600
500	600	600
1,300	900	1,700
200	260	420
1,200	270	450
15	60	800
90	60	700

Vacancy rates

Vacancy rates determine the proportion of dwelling stock that is occupied. Increasing vacancy rates over time will mean that a stock of dwellings will hold fewer people, all other things being equal, so population will rise slower, or fall faster, than otherwise.

❑ You can either assume that vacancy rates will not change over the planning period, and use the default settings, or can set alternative vacancy trends.

❑ Using the default vacancy settings (the 2006 Census rates for houses, semis and flats, rounded to 0.1%) is a sensible starting position, given that the 'vacancy rate' used in the Projector is a Census measure, and can only be re-measured in subsequent Censuses.

❑ Once a reasonable scenario is set using other variables, the vacancy rates can be changed to test the sensitivity of outcomes.

The 2006 vacancy rates are shown in Table 2 from Census data. Future vacancy rates are set at the bottom of Table 2 by entering the estimated vacancy rates for the year 2031. The Projector calculates the vacancy rates for other years by assuming a linear trend from 2006 to 2031.

In the spreadsheet: Vacancy rates are set in Table 2. Rates can be entered for each type of dwelling, as either a fraction '.057' or as a percentage '5.7%'.

Vacancy rates 2006		5.7%	6.3%	8.1%
Vacancy rates in 2031		5.7%	6.3%	8.1%
Long-term vacancy rates	(enter future vacancy rates for dwelling types here:)	5.7%	6.3%	8.1%

In the Control Panel: Alternative rates can be entered into text boxes for each type of dwelling, as either a fraction '.057' or as a percentage '5.7%'. You can also Reset the vacancy rates to the default 2006 rates.

Dwelling trends

You enter the anticipated number of additional houses, semis, and flats per annum for each locality in Table 3 (net, after demolitions). Future stock is calculated from the 2006 Census baseline at the annual rates you set here.

3. Dwelling trends from 2006	Annual net change in priv. dwellings			
	houses	semi/town-houses	flats / other	total dwellings
Camperdown	(2)		9	7
Dulwich Hill	44	(12)	20	52
Enmore		15	(28)	(13)
Lewisham	18	(11)	(20)	(13)
Marrickville	32		17	49
Newtown	16		2	18
Petersham	39	(14)		25
St Peters	(3)	(14)	15	(2)
Stanmore	7		27	34
Sydenham	23		6	29
Tempe	3	(4)	(1)	(2)
South Marrickville	15	(4)	(5)	6
1420313	(1)	1	4	4
1420708	6	(7)	1	
Marrickville	**192**	**(44)**	**42**	**190**

☐ The LGA total is calculated by adding the localities, and is not entered.

☐ Negative numbers mean net demolitions.

☐ The default rates for dwelling changes in each locality are the rates for the locality over 2001 to 2006, shown in yellow cells.

☐ When alternative rates are entered, the cells turn orange.

In the spreadsheet: Rates of extra dwellings are set in Table 3. Numbers (extra dwellings per year) can be entered for each type of dwelling in each locality. Cells turn orange to show that new data is entered.

In the Control Panel: Clicking the Dwelling Alter button on the Control Panel opens the Dwelling Adjustment Form. This shows the current number of extra dwellings pa set in the Projector.

☐ Enter alternative Targets for the annual extra (or loss) of houses, semis and flats, then click Adjust. The difference between the Current and Target figures will be distributed among the localities. The Current figures will be revised.

☐ The Reset Button sets changes to the 2001-2006 trend.

☐ The Smooth Button will iron out minor opposite variations in the annual number of semis and flats, as these could be caused by different classification between Censuses,

Composition

The composition of dwellings is the proportion of different size, measured by bedrooms. If the composition of dwellings changes over time, say to a higher proportion of 1-bedroom units, this will affect the number of bedrooms, and hence potential occupancy. More smaller dwellings would mean fewer residents.

☐ A baseline composition for the LGA can be calculated from 2006 Census data, for each type of dwelling.

☐ Councils often set requirements for new developments to have certain minimum proportions of dwellings of each size. Setting the long-term rate allows the composition of extra stock to be calculated, to check assumptions are consistent with planning policies.

You set the projected composition of dwellings (ie % of houses, semis and flats with 0-1, 2, 3 and 4+ bedrooms) by determining a long-term composition (in 2031), from which the Projector calculates a linear change rate, using 2006 as the baseline.

In the spreadsheet: You can enter numbers into the yellow cells under 'long-term % of dwelling each size' in Table B7.

B7. Dwelling composition trends	long-term % of dwellings each size (2031)				long-term BR/dwg	trend change, % of dwellings pa				change, BR/dwg/pa
	0-1 BR	2 BR	3 BR	4+BR		0-1 BR	2 BR	3 BR	4+BR	
houses	2%	24%	52%	22%	3.0	0.00%	nil	nil	nil	0.000
semi/town-houses	8%	45%	39%	8%	2.5	0.07%	(0.15%)	0.08%	nil	0.000
flats / other	31%	56%	10%	3%	1.9	(0.12%)	(0.05%)	0.12%	0.05%	0.004

☐ Do not enter the % in 0-1 BR dwellings, or the average long-term BR/dwg, as these are calculated.

☐ Total for all dwellings are not calculated as they are not relevant.

In the Control Panel: You can Show or Reset the Long-term Composition, but can only enter new data directly onto the spreadsheet by closing the Control Panel.

Occupancy changes

In the Projector, one of the most important assumptions influencing future population is the trend in occupancy rates. Increasing occupancy rates will make the population grow even if dwellings are static.

Table 7 shows the occupancy trends. If the cells are yellow, they are the default trends (over 2001-2001). If they are orange, other rates have been entered.

In the spreadsheet: You can enter occupancy rates for each type of dwelling in each suburb directly into Table 7.

❑ The rates are in percentage change per annum, so –0.2% means the occupancy rate falls at the rate of 0.2% p.a. (linearly). After 5 years, it will have fallen 1%.

❑ The LGA average are calculated from the suburb rates on the weighted by number of dwellings. You cannot enter these.

In the Control Panel:

❑ Click Show to see current settings for occupancy growth,

❑ Click Reset to set the change rate to the default formula,

❑ Click Alter current settings proportionally. This opens the Occupancy Change menu, where you enter alternative rates for occupancy changes in house, semis and flats across the LGA, and select how to distribute these across the localities.

7. Occupancy rates projected for 2031	Projected occupancy change		
	houses	semi/town-houses	flats / other
Camperdown	-0.2%	0.9%	-0.3%
Dulwich Hill	-1.1%	0.7%	-1.8%
Enmore	0.1%	0.7%	-1.2%
Lewisham	-0.8%	-0.7%	-0.9%
Marrickville	-1.4%	0.5%	-1.9%
Newtown	-1.9%	0.4%	-0.6%
Petersham	-1.3%	-0.1%	-0.4%
St Peters	-0.8%	-1.9%	-1.9%
Stanmore	-0.6%	0.2%	0.7%
Sydenham	-0.5%	0.2%	-0.6%
Tempe	-1.3%	0.4%	0.4%
South Marrickville	-0.4%	-2.3%	-2.2%
1420313	2.5%	-6.0%	-0.5%
1420708	-4.2%	-2.5%	1.0%
Marrickville	**-1.0%**	**0.3%**	**-1.3%**
Inner Sydney SSD	-0.5%	0.3%	-0.2%
Sydney	-0.3%	0.3%	0.1%
std. dev'n	0.6%	1.0%	0.9%

Occupancy limits

You can sets the maximum and minimum occupancy rates for each type of dwelling through the Control Panel. If the occupancy trend is such that the occupancy of a type of dwelling in a locality reaches the limit in some future year, it cannot change further.

❑ The default limits are set as the highest and lowest found for each type of dwelling across the localities in 2006.

❑ You type alternative occupancy limits in the Control Panel.

❑ The rates are stored outside of the report in the Settings Box. They are reported in the text above Table 7.

❑ Click Reset to set the rates to the 2006 limits.

Occupancy limits	houses	semi's	flats
min	2.4	1.2	1.7
max	3.5	2.7	2.6

Institutions

The projected population in non-private dwellings (eg institutions) is calculated separately from the population in private dwellings; the two are added to give the total population. This occurs in Table 9.

❑ The baseline institutional population is the count of residents in non-private dwellings in the 2006 Census.

❑ The change p.a. rate is the annual change in the number of people counted in institutions between 2001 and 2006, as a percentage of 2001.

❑ The future change rates are assumptions that can be altered.

❑ The default assumption is that each locality will change at the average rate of the locality, LGA, region and city/state over 2001-2006, expressed in extra/fewer residents per year.
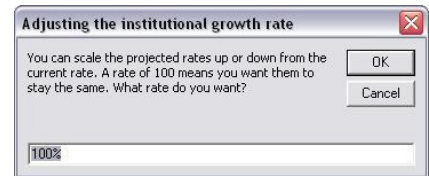
In the spreadsheet: You can enter numbers into the yellow cells under 'future instit'l change, residents' in Table 9.

- The number of residents in institutions will change by that number each year.
- If the change is negative, the number will decline, eventually to zero.
- Do not enter the total; the Projector can add.

In the Control Panel:

- Click `Show` to see the institutional change settings.
- Click `Reset` to set the growth rate to the default formula,
- Click `Alter` to change the current settings proportionally. **This** will open the query box shown right. Enter the percentage factor by which the current numbers are to be scaled, e.g. 50 will halve, 200 will double. Click [OK] to apply the factor.

Adjusting the institutional growth rate

You can scale the projected rates up or down from the current rate. A rate of 100 means you want them to stay the same. What rate do you want?

`100%`   [OK] [Cancel]

Vehicles

One page of the Projector calculates the number of vehicles likely to be garaged in the localities in any future year, by projecting from the 2006 Census count at a linear change rate, in vehicles per dwelling per year. The data and assumptions are in Table 10.

- The default change rate is the smoother locality rate over 2001 to 2006,
- You can enter alternative change rates for vehicles per dwelling p.a. in the yellow cells in Table 10.
- In the Control Panel, you can `Show` or `Reset` the dwelling change rate, but you can only enter data by closing the Control Panel.

10. Vehicle Ownership	annual change 2001-2006	smoothed annual change	future change rate	average in 2006	Proj'n in 2037
Camperdown	0.001	0.001	0.001	1.04	1.05
Dulwich Hill	-0.007	-0.005	-0.005	1.11	0.99
Enmore	0.013	0.013	0.013	0.98	1.30
Lewisham	0.016	0.016	0.016	1.10	1.49
Marrickville	0.003	0.003	0.003	1.11	1.18
Newtown	0.003	0.003	0.003	0.87	0.94
Petersham	0.006	0.006	0.006	1.07	1.22
St Peters	-0.003	-0.003	-0.003	1.05	0.98
Stanmore	0.022	0.016	0.016	1.10	1.49
Sydenham	0.019	0.016	0.016	1.11	1.50
Tempe	0.019	0.016	0.016	1.22	1.60
South Marrickville	0.022	0.016	0.016	1.31	1.70
1420313	-0.022	-0.005	-0.005	1.18	1.06
1420708	-0.008	-0.005	-0.005	0.95	0.83
Marrickville	**0.005**	**0.005**	**0.004**	**1.08**	**1.186**
Inner Sydney SSD	0.004	0.004	0.004	0.98	1.08
Sydney	0.009	0.009	0.009	1.49	1.71
std. dev'n	0.01	0.01	0.01	0.11	0.26

vehicles per occupied dwelling

More help?

Call The Public Practice on 02 9716 8530 or email colin@publicpractice.com.au

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