

# Leaving Rockville

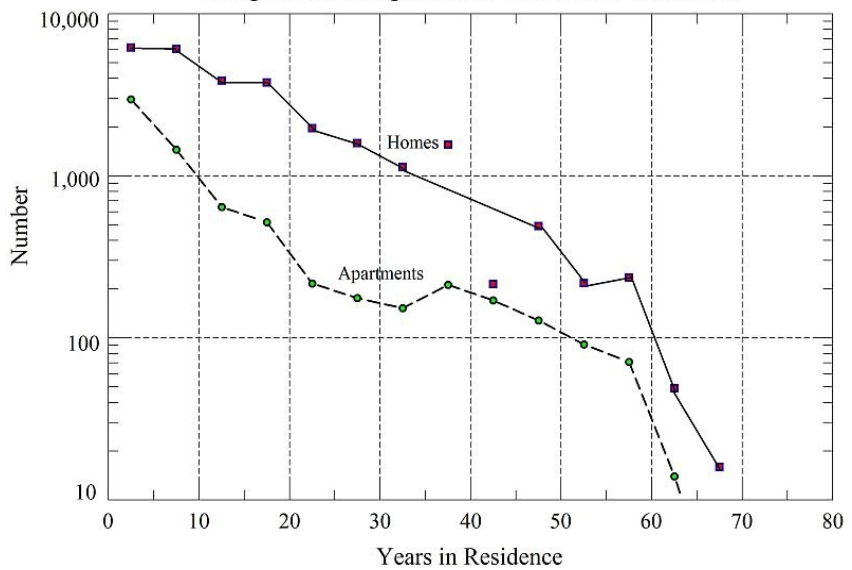
Roald Schrack 17 May 2011

We are all temporary residents of Rockville. Some are lucky enough to be born and die here but most of us came here from somewhere else and will leave to go somewhere else. Those who are registered voters have in the voter lists a record of our years of residence in the city. Note that this is different from age. Even if you were born here, your year of residence only covers your time as a registered voter. The average age at the time of registration is 35 with a standard uncertainty of 15. To get an indication of the age compared to the years in residence one should add 35 to the years in residence value in the graphs shown below

The distribution of number of people with their years in residence is interesting in itself, but we can learn something more interesting if we ask additional questions. When the destination of new voters was examined, it was seen that new voters went preferably to those areas with apartments. The graph below displays the difference between living in apartments and in individual homes on years in residence. Note that the vertical scale is logarithmic to allow a greater range in values and still show detail.

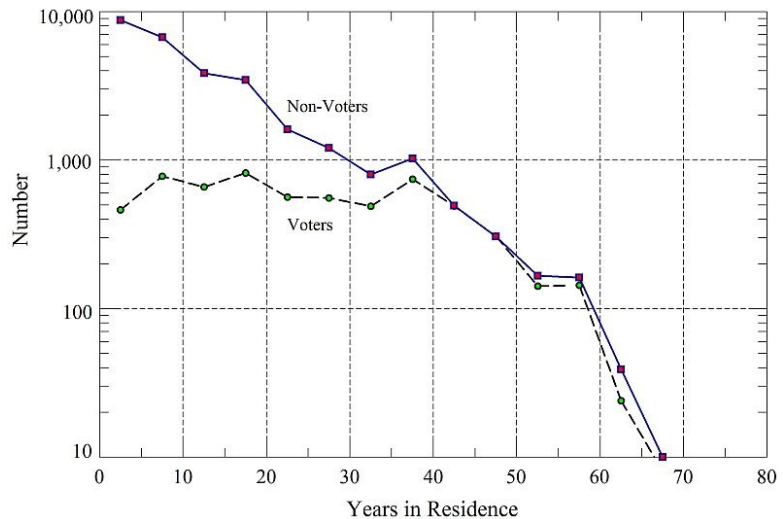
The curves show the number of residents for values of years in residence. Note that the curve for apartments falls faster than the curve for homes. About 6% of people in homes leave each year compared to about 14% per year for apartment dwellers. Apartment dwellers become less mobile after 40 years of residence (age about 75) and then both curves drop steeply at about 60 years of residence because of mortality. It should be noted that only about half the apartment dwellers are registered to vote and only 10% of them voted in 2009 compared to 17% participation by non-apartment voters. The higher mobility of apartment dwellers is not surprising.

Comparison of Apartments and Homes Residence



Comparison of Years in Residence for voters and non-voters in 2009

Voting has a surprisingly strong influence of the pattern of residence longevity. The graph on the right shows the difference between those who voted in the last election and those who did not. The amazing thing is that those who vote are quite stable. There is no sign of leaving Rockville for the first 40 years of their residence. Then leaving sets in as retirement and mortality show a decline in residents. On the other



hand those residents that choose not to vote in city election show a decline rate of about 7.5% per year until mortality sets in.

The graphs are quite instructive but a more numerical way of describing the data can be helpful.

In grading test papers, for example, the quartile system is used that divides a distribution up into four equal parts. The first 25% is called the first quartile (Q1), the second is then Q2, etc. The median of a distribution, half above and half below is the dividing line between Q2 and Q3. The table below shows the data displayed in the graphs in quartile format. With values of the years in residence (YIR) given for the upper limit of the quartile. The last column in the table shows the initial rate of loss of residents per year for the different data sets. This does not include loss from deaths.

	Quartile		upper Limit	YIR		Loss %
Data	1	2	3	4		per Year
All	4	11	22	80		6.8
Apartment	2.5	5	11	80		14
Home	6	12	21	80		6
Vote in '09	12	22	37	80		0
No Vote	2.5	9	19	80		7.5

What this table tells you, for example (row=All, column=Q1) is that 25% of all the registered voters left Rockville before having lived here four years. For another example (Home,Q2), 50% of all homeowners left Rockville before 12 years of residence. Or put another way 50% of all homeowners were still in residence after 12 years. In another example (Vote in '09, Q3) 25% of all voters were still here after 37 years in Rockville.

An example from the final column (Apartment, Loss) shows 14% of apartment residents leave each year. Note this does not include loss from deaths.

This report gives numerical and graphical evidence of the dynamic nature of the Rockville population and how living in either apartments or single family homes and whether you vote influences how long you will stay in Rockville. The results shown in this paper are subject to statistical uncertainties and variations in election participation, thus similar calculations done for voter lists in other years will yield similar but slightly different results. The previous papers on the 2011 voting list showed that the influx of new registered voters exceeds the loss of previously registered voters by 38%. This paper does not imply that the losses are in any way threatening to the city. They are a natural part in the turnover in the population. Rockville has many attractive features and will continue to attract new residents at a greater rate than the losses.

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