Rockville City Elections - 1997 - Analysis
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Overview

The following table shows the number of ballots cast and registration in the last several elections:

Year	Ballots	Registration	B/R	Previous Voters	New Registrations
1989	6206	23,546	.26	9394	2258
1991	5451	20,648	.26	7916	1741
1993	1449	23,077	.06	9889	4409
1995	4323	22,787	.19	8133	1317
1997	5211	22,660	.22	6968	3299

The first thing to notice is the continuing decline in the number of registered voters in the city. This is occurring in spite of the increasing population of the city and the relatively automatic registration of new residents under the new "motor-voter" regulations. This declining registration is undoubtedly caused by the increasingly larger fraction of the city's population that are not U.S. citizens. The city now has about 30% minority population about equally divided between Afro-Americans, Latinos, and Asians. An enhanced effort must be made to bring the non-participating members of our community into the civic life of the city.

The second element of interest is the declining number of registrants that have voted in one of the previous elections ("Previous Voters"). It is from this population that most of the votes in an election come.

New registrations show a periodicity, being larger in years following a national election. This periodicity will be reduced in the future because of the "motor-voter" legislation.

Finally we come to the number of voters in the current election. It is 17% higher in 1997 than it was in 1995. This is in spite of a declining number of "previous voters", overall registration, and reduced number of candidates (7 Council candidates in 1995 as opposed to 5 candidates in 1997). In the following, an attempt will be made to determine contributing causes. The column "B/R" is the number of ballots cast divided by the number of registered voters.

In the following table the number of absentee ballots is compared. Although their number is small and thus subject to large statistical uncertainties they are indicative.

Year	Absentee ballots	Absentee/Polling Place Ballots
1987	210	.026
1989	175	.028
1991	168	.032
1993	48	.033
1995	180	.042
1997	156	.031

The 1995 ratio of absentee ballots to polling place ballots was exceptionally high. The suggestion is that the number of absentee ballots gives a measure of the interest in the election that is independent of weather conditions on election day. The exceptionally high ratio of absentee ballots to regular polling place ballots in 1995 indicates that participation in the election was reduced because of the rain. The average absentee to polling place ratio for years with good weather on election day is 0.030. This would indicate that if the weather had not been rainy in 1995 the turnout would have been .042/.030=1.4 times higher or about 1.4 * 4323=6052 voters. The B/R ratio for 1995 would then be 6052/22,787=0.26. This is then the same as the B/R for the 1989 and 1991 elections where there were 7 candidates vying for 4 council seats also. Conclusion: A rainy election day can reduce voter turnout by more than 30%. If 1995 election day weather had been as nice as 1997 the comparison of 1997 to 1995 would show a relative decline in voter participation of (6052-5122)/6052=15%, not an increase.

Ballots/Registration for Fair Weather Elections as a function of number of candidates
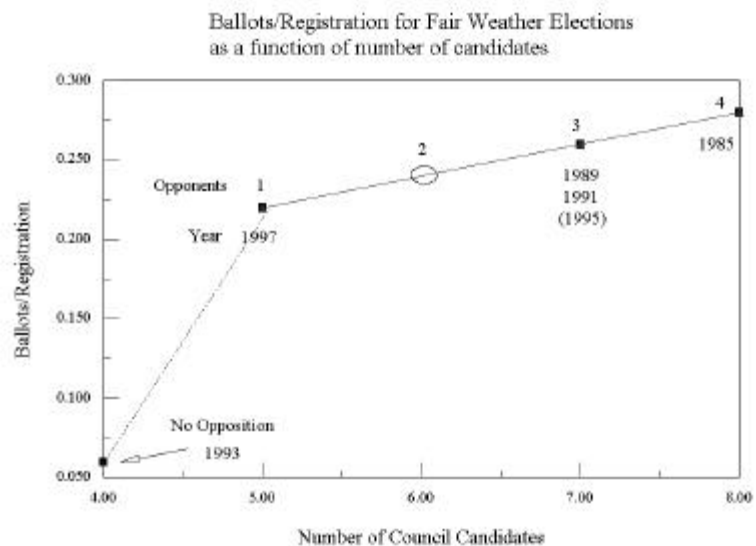
An estimate of the effect of the number of candidates for office has on voter participation can now be made by comparing the Ballots to Registration ratio for different years assuming that the weather was fair on election day and that there was not a strong Mayoral race. Figure 1 shows the results. There is no data for six council candidates.

This figure assumes no special import to Charles Haughey's candidacy. The mere fact that there is one more candidate than available seat insures the competition and development of support by candidates to insure their election. The sharp drop in participation below five candidates shows that the public has little incentive to go to the polls if there is no choice for them to exercise. It is not required that there be issues, all that is required is that there be uncertainty as to who will be elected. The data seems to indicate that the greater the uncertainty, the greater the incentive to vote. While the graph seems to be linear for the available data, increasing the number of candidates beyond eight would probably not result in continuing increases in participation.
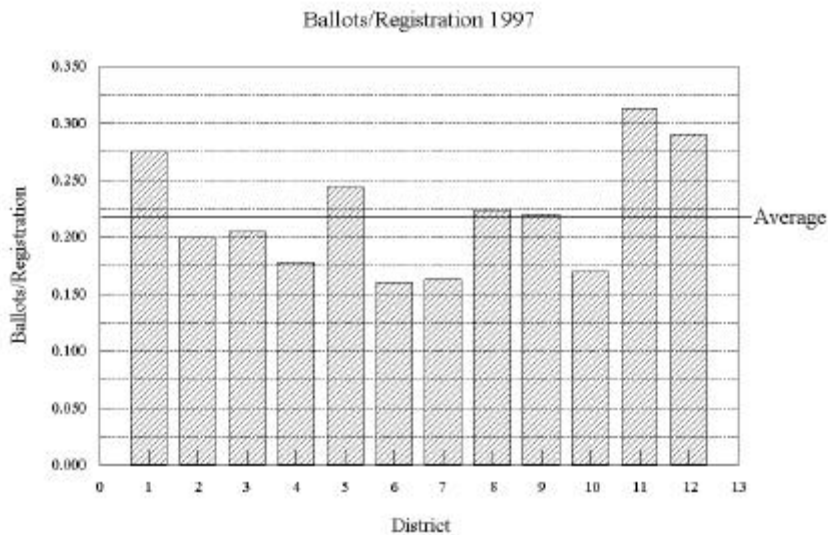
Ballots/Registration 1997

Figure 2. shows the ratio of ballots to registration for 1997 as a function of district. There are a number of reasons for the variation: active civic association, home district for a candidate, strong local issues will increase participation while a large fraction of apartment dwellers and/or minority population will tend to reduce participation.

It has been shown that the major influence in increasing participation in 1997 over 1995 was the good weather. If this is the case the increase in participation should be

roughly the same in all districts. This is true only for the case of the mayoral race where there is little local reason to change. Figure 3 shows the ratio of relative participation (ballots/registration) in 1997 and 1995. The average increase in Participation is 16%. Note that if 1995 had fair weather there would have been an 18% decrease in 1997 participation instead of an increase. The variations from district to district are probably not significant except for district 12 where a 50% increase in participation is shown.

**Ratio of Participation in 1997 and 1995 Elections**
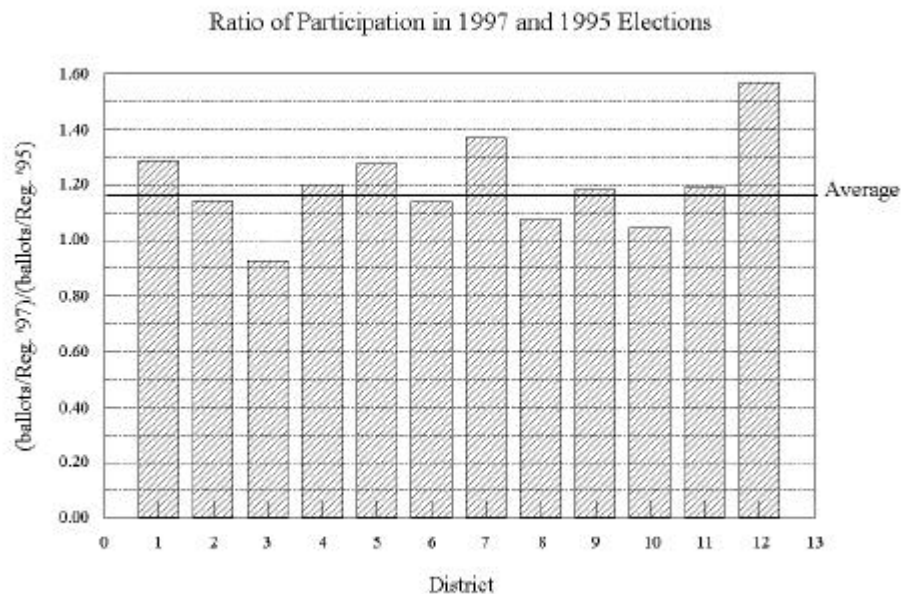
Candidate Races

It is interesting to look at the relative vote for Rose Krasnow in the two elections. Figure 4 shows a relatively constant vote pattern with an average increase of 22% as compared to an 18% increase in participation. Despite (or because of it) the mayor got a 5% higher fraction of the vote in 1997 than she did in 1995.

Ratio of Krasnow Vote in 1997 to 1995
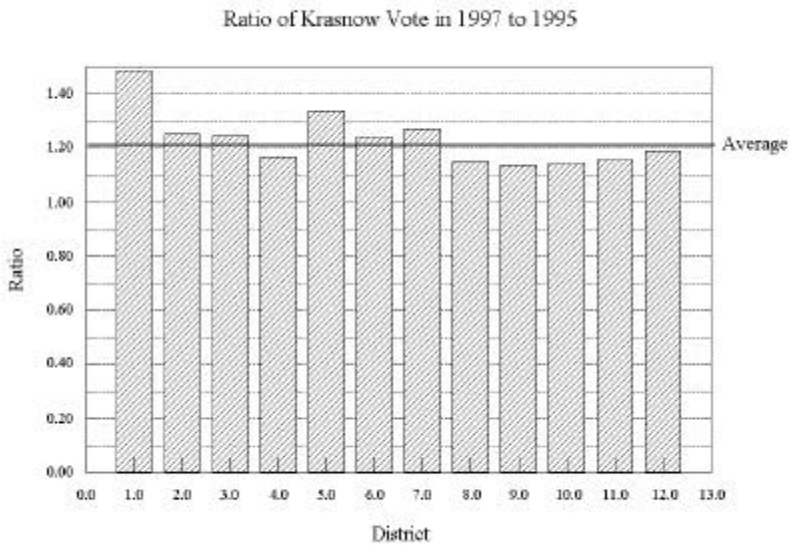
The council races can be usefully broken into a comparison of the incumbents and the challenger, Mr. Haughey. In making a comparison to the 1995 race it should be remembered that Mr. Haughey ran with Dorsey, Marrinan and Wright. Mr. Harrison was the challenger in 1995. Mr. Harrison was elected and Mr. Haughey was not, so the incumbents (as used in this paper are always) are Mr. Dorsey, Mr. Harrison, Mr., Marrinan and Mr. Wright. Another factor that must be taken into account in comparisons is that there were seven candidates to divide the votes among in 1995 and only five in 1997 so a candidate could pick up votes previously captured by another candidate not running in 1997. This point is considered further in the Conclusions section.

Mr. Haughey will be considered first. Figure 5 shows the ratio of votes received in 1997 to votes received in 1995. His average increase was 44% but it was not enough to win. The following table shows the fraction of the votes the council candidates received in the two elections.

Candidate	'95	'97
Dorsey	.60	.73
Harrison	.58	.73
Haughey	.45	.56
Marrinan	.62	.70
Wright	.56	.69
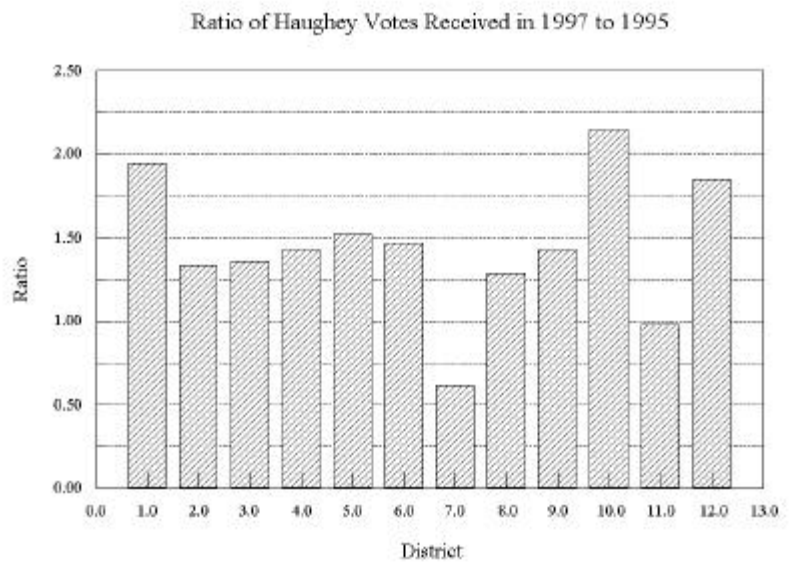
The top four win. Note that getting more than 50% of the ballots cast does not guarantee election unless there are eight candidates for the four council positions.

Ratio of Haughey Votes Received in 1997 to 1995

4

Relative Incumbent Vote 1997/1995
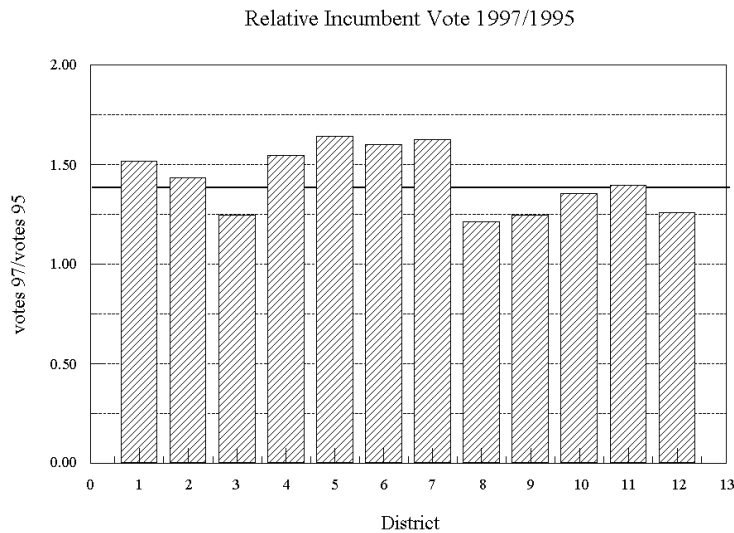
It is interesting to note that Mr. Haughey lost by 472 votes (10.9% of votes cast) in 1995. In 1997, he lost by 688 votes (13.6% of votes cast).

Consider now the relative performance of the Incumbents as a group. In Figure 6 their relative vote total in 1997 is compared to what they received in 1995. Note that the variation is much less. The average is 1.41, about 2% less than Mr. Haughey. Mr. Haughey's gain is concentrated in districts 1, 10, and 12 where local issues were important. If a comparison is made of all districts except 1, 10, and 12 then Mr. Haughey's ratio of 1997/1995 is 1.23 as compared to the incumbent's ratio of 1.43

Missing Ballots

The following table shows the fraction of missing ballots in the last few elections.

Year	Missing Ballot Fraction
1991	0.39
1993	0.36
1995	0.42
1997	0.58

Comparison of Haughey Votes and Bullet Ballots
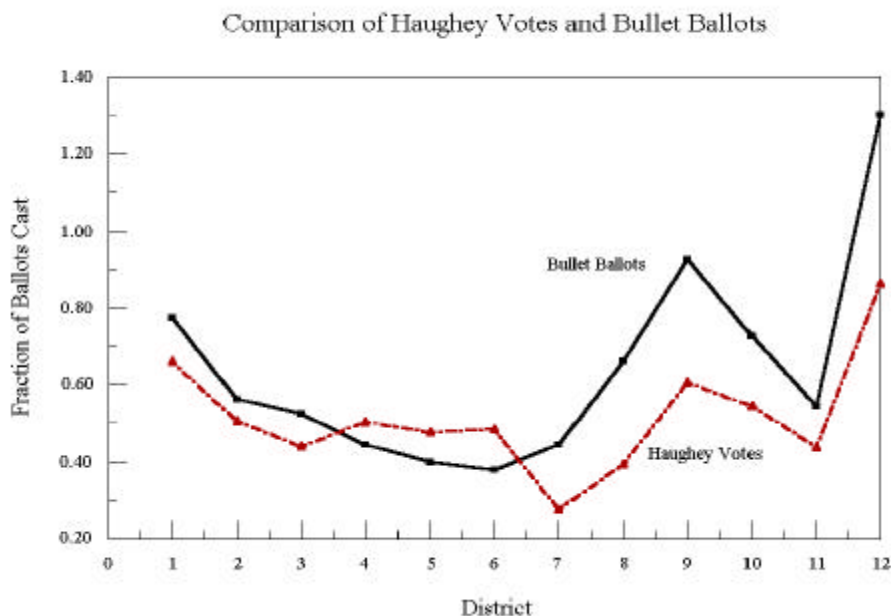
The number of missing votes can be determined by subtracting the total council vote in a district from the total possible council vote (four times the number of ballots cast). The average missing ballot fraction for the three previous elections is 0.39 ±0.024. The missing ballot fraction for 1997 is 8 times the probable error indicating that something different is going on in this election that did not take place previously. Figure 7 shows a comparison of the missing ballot fraction and the Haughey vote fraction (Haughey vote/ballots cast). In Haughey's home district the missing ballot fraction is 1.3. Since there were 668 ballots cast, the number of missing ballots is 1.3 x 668=870. In the district 577 votes were cast for Haughey. The observed number of missing ballots would be obtained if Mr. Haughey got half his supporters in the district to cast bullet ballots, i.e. to vote only for him and not use the other three votes for Council members. The great similarity in shapes of the curves showing the bullet balloting and Haughey voting is strong evidence that the bullet balloting effort was coordinated.

Figure 8 shows the relative performance of all the candidates. Note the close tracking of the incumbent candidates. Mayor Krasnow receives higher support than all Council candidates except in district 12. With some variation the patterns of the incumbent council members roughly follow similar shapes but are greatly different from the pattern of Mr. Haughey. The next section covers a quantitative measure of pattern similarity.

Comparison of Vote Fractions by Candidates

Correlations

Relationships between the vote distributions of candidates are shown by their correlation coefficients in the following table. The values are obtained by a calculation using the vote distribution of candidates in the twelve districts as shown in Figure 8. Correlation coefficients vary between 0 and 1. A value of 1 would say that the two distributions are identical, a value of 0 would say that there is no connection between the two distributions. In the table below the values under "Missing" relate to the distribution of missing ballots.

	Krasnow	Dorsey	Harrison	Marrinan	Wright	Haughey	Missing
Krasnow	**1**.	0.83	0.73	0.80	0.86	0	0
Dorsey	*0.83*	**1**.	0.80	0.65	0.70	0	0
Harrison	*0.73*	*0.80*	**1**.	0.75	0.71	0	0
Marrinan	*0.80*	*0.65*	*0.75*	**1**.	0.89	0	0
Wright	*0.86*	*0.70*	*0.71*	*0.89*	**1**.	0	0
Haughey	*0*	*0*	*0*	*0*	*0*	**1**.	0.84
Missing	*0*	*0*	*0*	*0*	*0*	*0.84*	**1**.

Note that the correlation of something with itself is **1** and that the values below the diagonal (in Italics) repeat the values above the diagonal. The correlation coefficients are much higher in this election than in the 1995 election. This is to be expected because of the smaller number of candidates and thus small amount of ticket splitting. Note the complete lack of correlation of the incumbents with Mr. Haughey and the missing ballots.
The high correlation of Mr. Haughey's vote distribution and the missing ballot distribution is just a numerical confirmation of the shape similarity seen in Figure 7.

Referendum
An advisory referendum was included on the ballot that asked the voter to show their preference on the length of terms for the Mayor and Council. A yes vote endorsed the change to four year terms. A no vote indicated a desire to keep the terms at two years. The yes vote was 2091, the no vote was 2454. A 54% vote against change, a clear signal that the term length should stay at two years. A similar referendum was held in 1991 with similar results. In 1991 there was a 52% vote against change. Mr. Haughey's supporters campaigned against change probably causing the increased no vote in 1997. Figure 9 the referendum results for the districts. Note the very high negative votes in districts 9 and 12 where Mr. Haughey did very well.
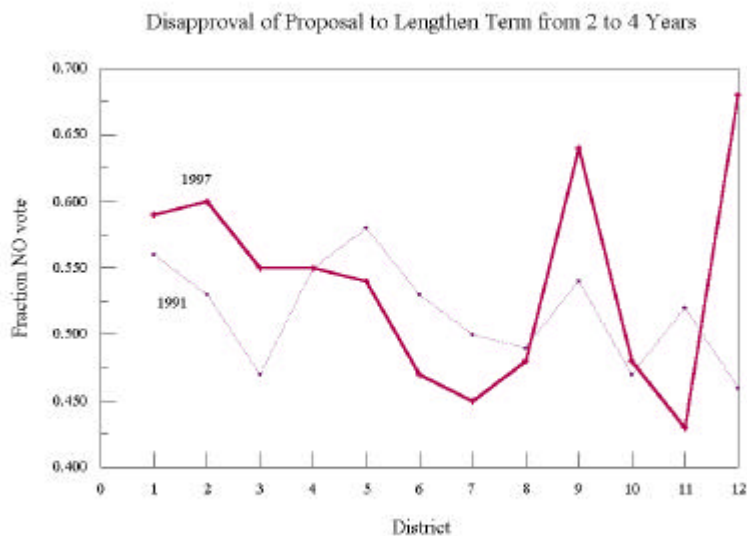
Spreadsheet
The accompanying spreadsheet shows the vote tallies for the 1997 and 1995 elections. Also shown are the numerical values upon which the graphs are based.

Conclusions
The major conclusions of this analysis are:

1. Weather on election day plays a major role in determining the number of people that will make it to the polls. A rainy day may reduce voter turnout by more than 30%.

2. If the weather in 1997 and 1995 had been the same there would have been an 18% drop in participation instead of an increase of 16%.

3. Rose Krasnow did better in 1997 than in 1995 despite or perhaps because she had opposition in 1997.

4. Charles Haughey increased his relative support from 1995 to 1997 by 2% more than the incumbents did but he had much further to come in order to win. He lost in 1995 by 10.9% of the vote, he lost in 1997 by 13.6% of the vote. Historically in Rockville, a person that loses an election will probably not do well on the retry.

5. Mr. Haughey did very well in districts 1, 9, and 12 where he had a local issue and/or was in his home territory. Despite endorsement by the press (which, if it had any effect, should be observed in all districts) he did quite relatively poorly outside the above mentioned districts. While the incumbents increased their vote total by a factor of 1.44 from 1995 to 1997, Mr. Haughey increased his by only 1.27

6. More people came to the polls in '97 than '95 and there were two fewer candidates to share the votes. An interesting way to look at the relative strength of Mr. Haughey and the incumbents is to ask how they shared the extra votes available. The following table shows how the extra votes were shared. The values in parenthesis indicate the share per candidate for the incumbent slate. Note that when all districts are considered the percentages for Incumbent candidates and Mr. Haughey are roughly the same but greatly different when considering all but 1, 9, and 12 or only 1, 9, and 12.

	All Districts	All but 1,9,12	1,9,12 only
Extra votes available	6157	4116	2041
% Going to Incumbents	68 (17)	76 (19)	53 (13)
% Going to Haughey	14	8	25
% Going to missing ballots	18	16	22

7. Bullet Ballots were at a historic high in this election. Previous candidates have suggested bullet balloting to their supporters but never with the success obtained in 1997.

8. The incumbents, as a group, received similar votes in most districts of the city but there was perceptible ticket splitting of the incumbent slate in districts 1, 3, 9, and 12.

9. The advisory referendum on the lengthening of terms from 2 to 4 years was dealt a heavy blow by Haughey supporters in districts 1, 9, and 12. Outside of those districts the referendum would have passed by a narrow majority (1479 yes to 1467 no).

A map of the election districts is included for the convenience of the reader.