Saving Open Spaces: Determinants of 1998 and 1999 “Antisprawl” Ballot Measures*

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**Objective.** Although such measures received media attention as indicative of a nationwide rebellion against sprawl, determinants of the appearance and success of 1998 and 1999 open-space preservation ballot measures have not been investigated. We suspect that, contrary to assumptions, these are not triggered by sprawled development and represent a response limited to small, wealthy communities. **Methods.** The influence of population density, total population, percentage of Anglos, and median income on these initiatives is estimated through regression. **Results.** Low population density is not the trigger for the appearance and passage of these measures; however, demographic factors determinant of limits on growth in general do exhibit significant influence. **Conclusions.** The 1998 and 1999 open-space measures are better explained by the broad “growth machine” approach than they are by popular assumptions of what prompted these policies. In short, the existence of sprawl lacks a positive empirical link to its putative solution.

As the sight of bulldozers razing trees and leveling ground for new construction becomes more commonplace, the rapid loss of open space to development has achieved prominent agenda status. Since most activists recognize that development cannot be stopped (given increasing population levels and a relatively strong economy), efforts have focused on means by which it might at least be slowed or shaped. But although there is a broad, established scholarly literature on the determinants of growth (and, by extension, limits on growth), it is not clear how it applies to one subset of the topic: recent attempts to combat sprawled development through local ballot proposals—more precisely, the extent to which the appearance and success of these measures reflect communities’ rational response to sprawled development or are in fact triggered by some other factor(s), is not apparent. This study begins to address this gap.

Before explaining the theoretical background and our research design, it is necessary to grapple a bit with the very concept of sprawl. Although the

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term has become quite familiar to the public, its implied meaning is inconsistent, and even land use professionals and academicians have not settled on a consensual definition. These experts, however, do agree on at least one characteristic: low population density. The Sierra Club (1998) refers to sprawl as “low-density development beyond the edge of service and employment, which separates where people live from where they shop, work, recreate, and educate—thus requiring cars to move between zones.” In a more sophisticated but conceptually similar definition, Lewis (1996) utilizes formulaic estimations of the slope of the density curve. Sprawl is indicated by flattened curves, signaling low percentage declines in density per unit of distance from urban (or suburban) centers. Most recently, Fulton et al. (2001:3) equate the phenomenon with “land . . . consumed at a faster rate than population growth.” Thus, the term properly refers not just to general growth and development, but to particular spatial patterns that contribute to the swift destruction of large swaths of land.1

Two categories of policies potentially function as rational responses to sprawl. The first is composed of attempts to encourage concentrated, high-density development through strategies such as growth boundaries, gentrification of urban residential areas, and New Urbanist–inspired, self-contained suburban or urban villages (Duan, Plater-Zyberk, and Speck, 2000).2 The second approach is simply to protect unspoiled tracts of land from new development, through either public acquisition or regulation. In this investigation we examine the latter category and narrow our focus even further to a two-election cycle of ballot measures designed to achieve the goal of land preservation through acquisition measures.

The years 1998 and 1999 are notable as the period in which the sprawl phenomenon burst onto the national political consciousness in the form of a considerable number of voter initiatives designed to preserve open space.3 These generally involved small increases in property or sales taxes, or the

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1 The Atlanta, Georgia, metropolitan region is an illustrative example of sprawl. Since 1980, density levels have steadily declined as the population grew but dispersed away from the city and into surrounding communities. In 1980, 22 percent of the region’s residents lived in Atlanta itself; by 1999 sprawled development had driven that percentage down to 13.3 (Firestone, 1999). The low-density nature of sprawl means that only some of the policies touted as responsible land use planning will be applicable to this phenomenon. For example, large-lot zoning regulations are irrational responses, as they only exacerbate the gobbling up of land parcels.

2 In addition to fighting sprawl, New Urbanist policies are also touted for other benefits, such as the economic revival of depressed urban areas and a remedy to the social anomie associated with America’s automobile-centered culture.

3 One illustration of how this issue gained prominence in these years is that the term “sprawl” appeared in 275 articles in The New York Times in 1996 and 1997; from January 1, 1998, to January 1, 2000, it appeared in 463 articles, an increase of almost 70 percent. But predictions that the topic would become a major issue in the 2000 presidential election (Chen, 2000; Purdum, 1999) proved incorrect. Al Gore (who, it had been predicted, would be the “antisprawl” candidate) and “sprawl” are mentioned together in Times articles 38 times in 1999 but only 32 times in the 2000 election year.
issuing of bonds, for the public purchase of open space or preservation easements. Both the number of initiatives and the degree to which voters supported them was unprecedented, and these results were trumpeted in the press as the signal of a nationwide backlash against sprawled growth (Mitchell, 1999; Moe, 1998; Myers, 1999; Purdum, 1999).

However, the observation that open-space preservation *can* function as a rational response to sprawl is quite different from a determination that sprawled development was the actual trigger to the appearance and passage of these ballot measures. In this analysis we assert and ultimately support the proposition that these proposals were driven by factors other than spatial patterns of development. Our primary finding is that smaller, wealthier, and whiter areas were the most likely to include open-space preservation measures on 1998 and 1999 ballots, regardless of whether actual sprawled development was apparent. In fact, contrary to media accounts (as well as traditional, rational models of policy adoption), low population density had no significant effect on the likelihood of holding a vote. Secondarily, our findings show only minimal effects for any of these variables on outcomes in those areas that did vote, probably because there was so little variation in the success rates. Once they appeared, passage was highly likely.

**Conceptual Background**

The trigger for our interest in the impetus of 1998/1999 open-space preservation measures is a discrepancy between what scholars have suggested as the likely determinants of limitations on growth in general and the popular (largely media-fueled) interpretation of the spurs to these recent cases. In particular, what we shall refer to loosely as the “growth machine thesis” suggests that such efforts are at least as much a function of a city’s socioeconomic status as they are a function of actual physical conditions (i.e., the “need” for growth limitations).

The growth machine view of urban policy making recognizes that cities typically want to attract additional businesses and residents that will contribute to the local economy (Kantor, 1995; Logan and Molotch, 1987; Peterson, 1981). Thus, communities that need to enhance their tax base (and most fit this category) remain locked in a pro-growth and development-friendly orientation. However, once cities reach the level at which additional growth imposes greater marginal costs than benefits on residents, they may then concentrate on retaining existing residents while excluding newcomers (Tiebout, 1956). As suggested by the public-choice literature, residents will demand (or at least support) limits on growth, since efforts to restrict development can enhance quality of life while at the same time improving property exchange values (Arax, 1999; Fodor, 1999; Land Trust Alliance, 1999). This pattern tends to be associated with higher socioeconomic demographics.
Additionally, it is not just use and exchange values that suggest wealthier communities will champion limits on growth and development. Many scholars and commentators have noted the fine line between slowed growth and exclusion. Communities may potentially use growth limitation measures to prevent unwanted entrants such as the poor and minorities from moving into their neighborhoods (Logan, Whaley, and Crowder, 1999; Plotkin, 1987; White, 1978). But whether the motivation is economic or exclusionary, this literature as a whole (and we only skim the surface here) generally predicts that any limits on growth are more likely to occur in smaller, whiter, wealthier communities (Baldassare and Protash, 1982; Donovan and Neiman, 1995; Dowall, 1980; Press, 1999).

However, most of these studies concern what sorts of policies might be adopted through the traditional government policy venues. The question is therefore complicated by an array of other variables that may limit local response, such as institutional structure/interjurisdictional considerations (Lewis, 1996), strict state control of local discretion (Platt, 1996), and financial concerns (Pincetl, 1999). Thus, although the demographics of a city are potentially important, other factors may restrict their influence.

A more elementary question, and one that is somewhat easier to investigate, is what variables account for the appearance and success of ballot measures, since the constraints on government are largely irrelevant here. Although city councils, planning boards, and so on must deal with conflicting cues in regard to growth versus slow-growth policies, voter-approved measures may provide a means of breaking city policies out of the growth machine pattern at an earlier stage (Logan and Molotch, 1987; Pincetl, 1999). Examinations of this aspect of growth control are often limited to case studies of one or a few areas, but on the whole they support the conclusion that positive citizen response to these sorts of policies is also associated with higher socioeconomic status.

However, as Logan and Molotch (1987:220) emphasize, this is not to say that poorer and less-educated citizens are generally opposed to growth control. As they note, such a presumption is irrational, since “preservation of open spaces . . . enable[s] the less affluent to experience environments that otherwise would be available only to the wealthy.” The crucial factor is that elites are likely more effective in mobilizing to obtain ballot status for these policies and in publicizing and campaigning for them. In conclusion, the

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4 We do not claim that constraints such as limited funds and interjurisdictional disputes will not ultimately hinder the implementation of successful land preservation ballot measures. These sorts of policies, whatever their original source, seem inherently difficult to execute (Logan and Zhou, 1989). We merely observe that the appearance and passage of such measures occurs in a freer atmosphere than the more restrictive environment in which government entities must function.

5 There is also a substantial literature on the dynamic relationship between citizen mobilization and government response (e.g., Donovan and Neiman, 1992; Logan and Zhou, 1990).
literature suggests that ballot measures attempting to limit growth should be more common and more successful in towns and cities characterized by higher levels of socioeconomic status. This is the first expectation for our analysis.

Given this, we could simply stop here and predict that antisprawl efforts would be most likely in the wealthier areas experiencing sprawled, low-density development. But in addition to our expectation that citizen demographics will function as an important determinant of the appearance and success of these measures, we further believe that the actual extent of sprawl will fail to emerge as a determinant. This expectation is, at its core, inspired by the extensive literature challenging a straightforward cause-and-effect mechanism as the guiding force behind policy adoption. We believe this orientation to be relevant here, in light of the transformation of the concept of sprawl from a specific and empirically discernable pattern of low-density development to a largely symbolic, nebulous abstraction that functions as a catch-all term for all growth. One simple illustration of this conversion (and the overall confounding essence of this topic) is found in newspaper coverage. Reports are almost invariably accompanied by photographs of tightly packed houses or office buildings—not a particularly attractive configuration, but one that in fact portrays the opposite of sprawl (for examples of these pictures, see Chen, 2000; Egan, 2001; Jacobs, 2001; Mitchell, 1999; Purdum, 1999, 2000).6

Many low-density areas, while experiencing the rapid loss of land endemic to sprawl, may not yet have reached the point at which daily effects of the phenomenon (e.g., traffic jams, air pollution, and loss of open vistas) register as a cost to the general public. This is a crucial factor to consider, given that these 1998 and 1999 measures came in the form of voter-based initiatives. Conversely, high-density regions are plagued by noticeable dilemmas, such as crowded schools, steep housing prices, and general quality-of-life concerns (Waldie, 2000). To be sure, the hazy, transformed image of sprawl as a symbol for all the negative externalities of growth is likely quite effective in pushing these initiatives onto the ballot. But we expect to find that what has been trumpeted as the trigger for these measures (low-density development) in reality has little effect. The emergence of ballot measures and voter approval of them may well reflect dissatisfaction with growth very loosely defined (or even an effort to forestall anticipated sprawl), but not a reaction to actual sprawled development.

In summary, if the appearance and success of open-space ballot initiatives in 1998 and 1999 simply represents a rational response to sprawled development, then these measures will be more likely to appear and pass in areas

6To be fair, it is extremely difficult to show a picture of sprawl because of its diffuse nature. As one advocacy group in San Francisco has discovered, an effective way to portray the phenomenon is through airplane tours, which have been especially helpful in educating elected officials on the problem (Martin, 1999).
that are sprawled, that is, marked by low-density patterns. However, we sus-
pect that this will not be the case. Given the suggested link between all
growth limitation measures and particular community attributes, we expect
that wealth, ethnicity, and smaller population size will emerge as significant
determinants of outcomes, but that low-density development will not.

Research Design

In order to assess the predictors of open-space ballot measures, our re-
search design investigates outcomes in three steps. First, we identified all
areas in the nation that included a ballot initiative regarding open-space
preservation in 1998 or 1999.7 We then compared these “open-space” cit-
ies/towns/counties \(N = 132\) to a key control group: those areas that have
been identified as experiencing sprawled development but did not offer bal-
lot initiatives.

These “sprawled” cities were identified by the Sierra Club (1998), based
on its definition of low-density development beyond the edge of service and
employment. Of the 28 “most sprawled cities” this group lists, only three
held open-space votes in 1998 or 1999. (Those three were thus included in
the “open-space” cities and not in the “sprawled city” control group.) We
believe that the 25-case control group we identify is key. If we attempted to
compare cities voting on growth limitations (which we believe are not likely
to be characterized by low-density development) to all other cities, or even
to a random sample of cities, the findings would be questionable in regard
to the density issue in particular. The average density of U.S. communities
is quite low, at 70.3 residents per square mile. Although the “sprawled city”
control group is also characterized by relatively low density (573.86 resi-
dents per square mile), it provides a more rigorous comparison. In other
words, we have sought out a control group that gives the hypothesis we dis-
pute (that open-space preservation is triggered by low-density development)
the best chance of succeeding. Additionally, this control group is useful be-
cause it allows us to compare cities that voted on open-space questions to
those that have been identified as experiencing a troublesome loss of open
space, thus allowing us to draw more meaningful conclusions on the extent
to which the “problem” itself influences community response.

Taking our cues from the literature and assumptions sketched out above,
we utilized logistic regression to estimate the effects of several potential de-
terminants on this dichotomous outcome (“open space” [initiative on bal-

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7 A list of cities that voted in 1998 and 1999, and the outcomes of those votes, was pro-
vided by the Land Trust Alliance (1999, 2000). Although there were also a few statewide
votes on preservation in these years, they are not included here. A small number of commu-
nities held elections in both years; in those cases we included only the first vote. For the few
communities that offered two open-space questions on the same ballot, we averaged the
percentage of votes in favor and treated the case as a single vote. We eliminated 47 cases (see
note 8) and were left with a final data set of 132 open-space preservation votes.
lot] vs. “sprawled” [no initiative on ballot]). These independent variables are number of residents, percentage of non-Hispanic whites, median household income, and population per square mile.\(^8\)

Secondly, again utilizing logistic regression, but now focusing solely on those areas that did proffer a ballot initiative (the 132 “open space” localities), we examine whether these same independent variables influence whether the initiative passed. However, given that 84 percent of these measures did pass, there is not a great deal of variation to explain. Finally, looking only at those areas with successful initiatives (\(N = 111\)), the influence of the independent variables on the margin of victory (percentage of votes in favor) is assessed through an ordinary least squares regression equation. There is variation to explain here, for although the overwhelming percentage of these initiatives passed, they did not all win by a landslide. The percentage of votes in support ranged from just over 50 percent to more than 80 percent.

**Findings**

Table 1 reports the results of the logistic regression equation that compares the 25 “sprawled” cities (those experiencing sprawl but not voting on open-space measures) to those 132 that did have an open-space vote in 1998 or 1999.\(^9\) Perhaps the most notable finding here is the impact of

\(^8\)Our data source was the 1990 U.S. Census. Forty-seven small communities that held open-space votes in 1998 or 1999 were omitted, as there were no population density figures available for these communities.

\(^9\)The equation utilized for the analysis is

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P(Y_{1, 2, 3} = 1 \mid X) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4,
\]
population density on the likelihood of offering a ballot measure. As suspected, there appears to be no significant link between low density and the open-space protection policies that are the putative antidote to sprawl. In fact, these two variables are positively related—as density increases, a vote is more likely to occur (although the relationship falls short of statistical significance). In other words, the cities, towns, and counties already distinguished by the spatial patterns championed by antisprawl activists are more likely to offer these measures than are areas experiencing the actual phenomenon of sprawl. Apparently, something else determines whether a vote is held.

The other variables demonstrate what this may be, and they generally support the thesis that development limits will be considered only in areas that can afford to limit new growth. Smaller population, higher percentage of whites, and larger median household income all increase the likelihood of the appearance of a ballot measure (although the income variable hovers below statistical significance). This suggests that the predictions of the growth machine literature, usually applied to slow-growth policies broadly defined, also hold up in regard to this narrow subset of open-space preservation ballot measures.

Table 2 moves to an examination of whether, within the group of 132 localities that voted on open-space measures, these same independent variables work to determine passage or failure. Here, none of the variables have a significant effect on whether or not the initiative is approved. The high

where Y represents outcome (Y1 = appearance on ballot [0 = no appearance; 1 = appearance]; Y2 = passage [0 = failure; 1 = passage]; and Y3 = percentage of winning margin); X1 represents total number of residents (Population); X2 represents percentage of non-Hispanic whites (Anglo); X3 represents median household income in dollars (Income); and X4 represents number of residents per square mile (Density).
likelihood of passage suggests that simply getting on the ballot in the first place is the most important hurdle to clear.

Finally, we question whether, in the areas where the measures were approved (111 of the 132 cases), the independent variables influenced the size of the winning margin. As Table 3 shows, population density again plays an interesting role, with the percentage of votes in support positively and significantly influenced by high density levels. Once more, therefore, the conventional assumption that these measures are rational responses to sprawled development is weakened. In fact, the less sprawl there is, the more supportive citizens are of open-space preservation.

**Conclusion**

Through analysis of this unique data set of nationwide open-space preservation measures, we have supported two predictions. First, contrary to claims from open-space protection advocates that supporters “cross all demographic lines” (Fodor, 1999:139), and in support of the general growth machine thesis, it appears that these measures are most likely to appear and gain support in smaller, less racially diverse, and more affluent communities. Second, we have debunked conventional assumptions that open-space preservation, at least in the form of ballot measures in 1998 and 1999, functions as a response to sprawled development, for it is no more likely to occur in communities characterized by low population density than in those that already demonstrate relatively more concentrated development patterns.

Of course, there are limitations to this very streamlined study that suggest potential venues for future analyses. Most notably, we do not address the dynamic between local conditions and the appearance of these ballot measures beyond showing that low-density development is not the trigger. Thus, we make no claims that these measures cannot be a rational and necessary

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**TABLE 3**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardized OLS Coefficient</th>
<th>Standard Error</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
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<td>0.000002</td>
<td>0.1019</td>
</tr>
<tr>
<td>Anglo</td>
<td>0.0778</td>
<td>0.0764</td>
<td>0.3109</td>
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<tr>
<td>Income</td>
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<td>0.00005</td>
<td>0.6719</td>
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<td>Density</td>
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<td>0.0005</td>
<td>0.0182</td>
</tr>
<tr>
<td>Constant</td>
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<td>7.0612</td>
<td>0.0000</td>
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<tr>
<td>Model significance</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.0706</td>
<td></td>
<td></td>
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</tbody>
</table>

Note: $N = 111$. 
response to some problem (real or perceived, present or future). We simply show that they are not a function of the types of development land use experts associate with sprawl.\textsuperscript{10} It may be that the daily frustrations of life in a dense community trigger citizen responsiveness to land preservation measures, even though such measures may increase density levels even further. Relatedly, whether these measures are genuine attempts to preserve open space for its own sake or some sort of masked effort that uses preservation as a more palatable means to exclusion is beyond the scope of our findings. And there is no indication that these findings on acquisition measures will hold true for the more costly and unpopular development regulation option.

Additionally, the nature of the coalitions that place these initiatives on the ballot and help push them to success has not been explored. Given the impact of demographic factors such as population, wealth, and ethnicity, there may be little overall variation to account for in this process. Still, the details of how elites worked to support passage of these measures would be interesting, and better addressed in a case study of a small number of cities. This could also help to explain failure of these efforts in the few cases where they were not successful.

Finally, although this study provides a broad indication of future implications, the situation as described is not necessarily static. Although for the most part it appears that the areas that need it the least are the ones most likely to achieve open-space preservation (at least through ballot initiatives), there are indications that this will not always be the case. For example, Phoenix, Arizona, Austin, Texas, and Columbus, Ohio, all passed preservation measures in these years. These cities illustrate the potential for open-space support in larger, more racially diverse, less affluent, and sprawled metropolitan areas. The results of the 1998 and 1999 elections could function as a motivator for future citizen advocacy and responsiveness in these seemingly less conducive regions.

Alternatively, the declining economy could render the patterns we uncovered moot. Since development itself tends to slow during fiscal downturns, 1998 and 1999 may have represented the modern high-water mark for the appearance and success of land preservation ballot measures. However, as our findings have suggested a tenuous relationship between preservation efforts and at least one pattern of development, the impact of the economic slowdown remains to be seen.

\textsuperscript{10} Because these votes occurred several years after the 1990 Census, which we relied upon for density measures, it could be that the population had spread out (i.e., density declined) in the intervening years. Until the full 2000 Census results are released in 2002, it is impossible to assess changing local density levels that may have influenced these results. However, the fact that only three of the 28 cities identified as “sprawl-threatened” by the Sierra Club in 1998 held a land preservation vote in 1998 or 1999 suggests that post-1990 sprawl trends had little trigger effect on ballot measures.
REFERENCES


