

Who Supports Local Growth and Regional Planning to Deal with Its Consequences?*

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ABSTRACT

Using 1989 and 2002 California survey data, this paper offers a multivariate statistical analysis of factors that determine individual support for further growth in one's county as well as support for regional coordination of local land use decisions. Women and residents of higher per-capita income counties were more likely to believe that their county had reached its growth limit. In 2002 we also found that aging change one's opinion on this issue. Additionally, people who believed "sprawl" to be a very important issue in their region in 2002 were more likely to favor a state mandate requiring the regional coordination of local land uses.

INTRODUCTION

Growth is a major policy concern for the American public, especially in California and other states or sub-state areas experiencing sharp increases in population. Growth control measures have appeared on a variety of local ballots across the country in recent years (Gainsborough, 2002); while not always successful, such measures underscore the salience of this issue. National public opinion polls have shown that many Americans are concerned about growth and its impact on quality of life issues (Penn, 2000). Recognizing the potential for attracting voters concerned over the consequences of growth, some political candidates have embraced a "Smart Growth" platform (see for example Flint, 2001)

Between 1975 and 2000 the United States population grew from 216 to 285 million, or by nearly one-third. Over the next

25 years, the U.S. Census Bureau predicts that the nation's population will rise by another one-fifth to around 340 million. California, the most populous state in 2000 at 34 million, is also anticipated to be the fastest growing with a projected 43% increase in its population over the next quarter century (see Campbell, 1997). And significantly, a survey of Californians conducted in late 2002 indicated that about two-thirds of the respondents felt that population growth and development in their region was a problem (Public Policy Institute of California, 2002, 14).

Evidence of this concern within the mass public has prompted previous scholarly attention to the determinants of opinions about growth, growth control, and regional and statewide coordination of local land planning. Yet there are a number of reasons to reexamine this topic. With the exceptions of a recent Florida study by Chapin and Connerly (2004) and the long-running Orange County (CA) surveys conducted by Baldassare (2005), we have not found any published research that addresses the extent to which attitudes on this issue have changed over time. Additionally some prior research has considered the attitudes of only a relatively small number of people (e.g., Bollens, 1990, examined the attitudes about local growth control measures in the Cape Cod area of Massachusetts while Gottdiener and Neiman, 1981, only studied voters in Riverside, California).

As well, some of this literature is now quite dated and does not use multivariate statistical techniques (Gainsborough, 2002 is an exception). Furthermore, the extant studies reach different conclusions about the importance of certain factors. For example, some studies (e.g., Bollens, 1990) downplay the importance of social status cleavages while other studies (e.g., Gainsborough, 2002) emphasize such cleavages. The Chapin and Connerly study is especially interesting in this regard because it indicates that social status has become more important over time in determining Floridians' attitudes toward their statewide growth management plan, suggesting a need to be cautious about the relevance of earlier studies not emphasizing social status (see also Connerly and Frank, 1986, regarding the earlier attitudes of Floridians). As well, inconsistencies can sometimes be found within previous individual studies. Thus Gainsborough found that income and education had a positive and statistically significant association with support for slow growth in the Los Angeles area, but not in the New York area. While Protash and Baldassare (1983) find that growth controls are more likely to be enacted in communities with a greater proportion of white-collar residents; Albrecht, Bultena, and Hoiberg (1986) find quite the opposite: antigrowth attitudes are more likely among survey respondents holding blue-collar occupations. Given the limited geographical area covered by some

studies, lack of consensus about findings, and suspicions about how views may have changed in recent years, the research offered here is warranted.

We reexamine the question of support for growth and regional land use planning to deal with its consequences, drawing on two statewide polls of California adults in 1989 and 2002 conducted by the Field Institute. These data sources offer a number of advantages. First, the Field Institute has been surveying the California public since the 1940s and is a widely respected state polling organization. Academics have used Field Polls to examine a number of different questions such as support for direct democracy (Allswang, 2000), factors that influence approval of governors (Hansen, 1999), and political partisanship (Korey and Lascher, 2005). Second, the Field data include the respondents' county of residence. Such identification allows us to determine the extent to which different county characteristics may be associated with individual differences in opinions. California's counties are far from homogenous, varying enormously in terms of size, population density, ethnic make-up, and a number of other factors (for example, while some counties have only a few thousand residents, Los Angeles County with a population of 8.9 million is larger than all but seven states other than California itself). Third, the availability of data from 13 years apart allows for some consideration of how

the formation of growth opinions may have changed over time. Fourth, as a consequence of being selected as the Field Institute Faculty Fellows in 2002, we were able to draft language for a battery of questions pertaining to growth and sprawl in that year. This allowed us to address topics that have not been carefully examined in the literature, such as support for particular means of coordinating local land use decisions in a region.

More specifically, the data sets allow us to analyze differences in opinion about the desirability of local growth in 1989 and 2002, and two methods of policy intervention to try and mitigate the negative consequences of growth in 2002. Causal factors, most of them used in previous studies of this type, are considered including demographic variables (age, education, ethnicity, sex, etc.), circumstances in respondent's county of residence (previous growth, population density, and economic activity per resident), life circumstances (e.g., marital status), and political ideology.

We acknowledge that one disadvantage of the Field data sets is that disaggregating beyond the county level is not possible. Nevertheless, California counties are extraordinarily diverse with respect to population, population density, demographics, economic characteristics, etc. (California State Association of Counties/California Institute for County Government, 2003). The

availability of county identifiers allows us to probe for the influence of some potentially important county and regional specific factors.

The next section of this paper summarizes the factors that likely influence people's perceptions of the benefits and costs that can arise from greater growth in an area, and form the basis for our regression model. The third section offers a description of the survey data used and the logit regression model that yields the statistical findings. While section four provides the regression results and the fifth section summarizes and interprets the results for policy implications.

Benefits and Costs of Growth

We presume that local growth produces both costs and benefits for residents in the area experiencing it, and individual attitudes toward growth are influenced by perceptions of such costs and benefits. As Knapp (1987) emphasized in his study on "Self-Interest and Voter Support for Oregon's Land Use Controls," these perceptions in part reflect self-interested judgments about effects on an individual's own life and family (e.g., growth may create opportunities for the individual to obtain a more desirable job; it may also lead to greater traffic congestion that reduces leisure opportunities and increases stress). Yet, as Connerly and Frank (1986) indicated in "Predicting Support for Local Growth Controls," such perceptions

may also reflect broader judgments about what is good for the community (e.g., a non-poor individual may believe that an expanding number of businesses will have the desirable effect of reducing poverty; alternatively, someone may worry about harms to people in the entire region from increased pollution).

Accordingly, in a public opinion survey a respondent should support local population growth if she believes that the growth will result in receiving greater personal benefits than costs and/or if the growth on balance will be "good" or "bad" for the area in which she lives. Furthermore, the extent to which individual self-interest enters into the calculation will depend on life circumstances; for some individuals, the personal benefits/costs of sprawl may be larger and more tangible than for others. The existing literature suggests some of the ways that growth affects the quality of life, and presumably in turn affects perceptions of growth's costs and benefits.

BENEFITS

The review of *The Benefits of Growth* by Wassmer and Boarnet (2001) is the basis of our account of the place-based benefits that can arise from growth. If growth includes the birth of new firms and communities in a region, then it can generate new employment, shopping, and residential choices for existing residents. Along these lines, growth also increases the variety of job choices for both existing and new residents by increasing

the diversity of economic activity in the area. Growth, as it results in an increase in demand for locally produced goods and services, can also produce an increase in the income of current residents, the property values of current homeowners, and the revenue raised by local governments. Furthermore, growth stimulates greater opportunities for the revitalization of depressed places and can eventually lead to the generation of economies of scale through the geographic clustering of a larger amount of production and/or specific types of production. The benefit that existing residents enjoy from these scale effects is lower prices and a greater selection of locally produced goods and services. Another possible benefit of growth to existing residents is the likelihood of increased social diversity and added variation in entertainment and restaurant choices.

COSTS

Population and/or economic growth can also generate sizable costs to existing residents. For instance, if growth fails to bring a subsequent increase in employment and housing opportunities, then the currently unemployed and renters will face even greater difficulty in finding a job or affordable housing. In addition, if the new population results in an increase in local government expenditures greater than the increase in local government revenues that growth can generate,

local government services to existing residents will need to be cut or local taxes/fees increased. Besides these possible direct economic costs, existing residents may fear that growth will forever change the character of the place they call home. Such a negative change in the character of a region has commonly been labeled with the pejorative "sprawl" and is often attributed to unplanned growth.

Economists such as Brueckner (2001), Mills (1999), and Gordon and Richardson (1997) define sprawl in terms of "excessive spatial growth" that is the result of land markets and local political choices not accounting for the social benefits of open space, the social costs of auto pollution and freeway congestion, and the social costs of reproducing infrastructure in new developments. Others, including urban planners, define sprawl in terms of observable land use patterns that yield undesirable social outcomes. As Ewing (1997), Downs (1999), and Squires (2002) indicate, these include low-density, strip, scattered, and leapfrog development that are likely to yield an increase in vehicle miles traveled, energy consumption, air pollution, infrastructure costs, and a loss of usable open space in a community or region. Work that begins with the Real Estate Research Corporation's (1974) study on the *Costs of Sprawl* has supported the premise that the type of growth has a significant effect on the costs that growth imposes upon on a

community. To reduce these potential costs of growth, the solution most often proposed is the adoption of Smart Growth principles that use economic incentives and land-use planning to yield a more desirable social outcome after growth has occurred.¹

The issue of concern to those evaluating the desirability of population growth is whether it will occur in a manner that improves - or at least does not alter - the character of their place of residence. Often the assessment is that the costs of growth are very likely to exceed the benefits generated from it. People who are more likely to be personally affected by the costs of growth exceeding its benefits, or who are more likely to see their communities so affected, would therefore be more likely to be against growth.

REGRESSION MODELS AND SURVEY DATA USED

REGRESSION MODELS

Our model of the characteristics that influence a person's opinion on the desirability of growth is written in general form as:

- (1) Opinion on desirability of growth_{i,t} = f (age_{i,t}, race/ethnicity_{i,t}, gender_{i,t}, marital status_{i,t}, education_{i,t}, renter_{i,t}, employment status_{i,t}, household income_{i,t}, political ideology_{i,t}, relevant county characteristics_{i,t}, regional location in state_i),

where;

i = 1, 2, 3, ...number of people surveyed,
t = 1989 or 2002.

For numerous reasons, including the fact that in different stages of the life cycle a person's situations change in predictable ways and/or different age cohorts are exposed to different ideas or lessons on the expected benefits and cost of growth, one's age could influence her opinion on growth. Change in situations or exposure are correlated with age and if unaccounted for in the other explanatory variables included in the model, may exert an influence on a respondent's assessment of the desirability of growth. Connerly and Frank (1986) previously found that one's age significantly and positively related to their expressed support for Florida's statewide growth management program. Baldassare (1984) has also found a significant negative relationship between age and one's attitude toward growth.

There is also good reason to believe that a person's race/ethnicity, as measured by self-identified race (Asian American, African American, or all other) or ethnicity (Latino or all other), could influence her opinion about growth. Gainsborough (2002) found African Americans to have significantly different opinions from others regarding growth): in her study, Blacks were less supportive of slowing growth (interestingly, she did not find the same for Latinos). Chapin and Connerly (2004) also found race and ethnicity increasingly important in determining how Floridians view growth management.

While there had been modest differences in views across groups when Florida enacted a major state growth control law in the middle of the 1980s, by 2001 Blacks and Latinos had become relatively more disenchanted with the state's growth control efforts. Race and ethnicity especially influence how respondents interpret whether their "community" is hurt from by growth. Our regression models include three dummy explanatory variables set equal to one for African American, Asian American, or Latino. Hence, the derived impacts for each are in relation to the excluded category of someone who identifies themselves as other than a Latino, Asian American, or African American.

Our model also includes variables reflecting people's gender, life choices, and circumstances that may affect perceptions of growth's costs and benefits. Both Connerly and Frank (1986), and Chapin and Connerly (2004) include gender as a possible cause of differences in individual opinion formation on growth. The former found little evidence of gender based differences in attitudes while the latter found that recently Florida women had become more supportive of growth limitation than Florida men. Much literature suggests that marriage links people more tightly to their communities and this linkage may affect attitudes. Furthermore, perceptions of whether growth is bad or good could be affected by education level. The educated have better access to, and may be better able to process,

information on the costs and benefits of growth. Knapp (1987) has previously found that college graduates were less likely to support a referendum that would have repealed Oregon's statewide land use program. Connerly and Frank (1986) similarly found that a college education was correlated with individual support for statewide growth management in Florida. A large body of literature also suggests that education is associated with feelings of social obligation with respect to such matters as turning out to vote, suggesting potentially greater concern with effects of growth on the wider community. Finally, there is work suggesting that greater education is associated with greater support for environmentalism, controlling for other variables (for an example see Dunlap, Xiao, and McCright, 2001). In our regression analyses, education level is measured by a dummy variable reflecting whether or not a survey respondent stated they have at least a four-year college degree.

People's economic characteristics are also expected to influence their judgment on the desirability of growth. A renter is less likely to be tied to an area and has less of a direct economic stake regarding whether growth results in a lower or higher value of the property they live in. Baldassare and Protash (1982) and Protash and Baldassare (1983) previously found that communities with a greater percentage of homeowners are more likely to adopt an anti-growth philosophy. Whether

people are employed could also influence their assessment of the desirability of growth. The employed could view growth as a positive if they anticipate more employment choices resulting from it. Alternatively, they are more likely to view it as negative if new entrants are assumed to be competitors for the jobs they already hold. Since they already hold a job, the employed are also less likely to garner as much benefit from further economic growth. Similar arguments can be made regarding one's household income exerting an influence on attitudes toward growth. The extant empirical evidence about the impact of such variables is mixed. Notably, Connerly and Frank (1986) found that income had no impact on the view of Floridians in the 1980s, but using a similar data set Chapin and Connerly (2004) found that by 2001 low income people were least supportive of the state's growth control efforts.

Our model also includes the expectation that political ideology will influence people's views about the "good society" and hence about the costs and benefits of growth. Conservatives tend to be committed to the support of "free markets." Conservatives may be more inclined to accept growth as the outcome of natural market forces that are best left alone. Conversely, liberals tend to be more critical of unfettered markets and more open to government intervention to address the external social costs of markets, including presumably the costs

of unfettered growth. Additionally, prior empirical work has shown that self-identified liberals are more supportive of environmentalism than self-identified conservatives (Dunlap, Xiao, and McCrigh, 2001).

The Field Polls offer two different ways ideology might be measured: in terms of political party identification ("Generally speaking, do you consider yourself a Republican, a Democrat, an independent, or what?") and in terms of self-identified liberalism or conservatism ("Generally speaking, in politics do you consider yourself as conservative, liberal, middle-of-the-road, or don't you think of yourself in these terms?"). We chose to focus on self-identified conservatism/liberalism because a large body of research indicates that there is only a relatively modest connection between ideology and partisanship at the individual level, although there is some evidence that this relationship has strengthened in recent years (see for example Abramowitz and Saunders, 1998). It should also be noted that some recent scholarship has emphasized the importance of self identified liberalism and conservatism for attitudes about growth and urban sprawl, although here as well the results are mixed. Thus Gainsborough (2002) found that liberals in the Los Angeles area were significantly more likely to see growth and congestion as important problems, but ideology was not related to support for slowing growth in New York City suburbs. In our

regression analyses ideology is measured as a dummy variable with self-identified conservatism taking the value of one.

People's opinions about the desirability of local population and/or economic growth may perhaps be altered by some relevant overall characteristics of the county in which they live. Baldassare (1984) was one of the first to recognize and test this "community context hypothesis" (as labeled by Connerly and Frank, 1986). County characteristics that may influence individual opinions on growth include total income generated in the county divided by its population, the population density of the county, and the previous five-year growth rate in the county's population. A county with a higher per-capita income is one that is economically better off and hence an individual respondent may be less likely to state that growth is desirable to benefit others; a county with a higher number of people per square mile is more crowded and this may negatively influence a respondent's assessment of the desirability of bringing more people or economic activity to the area. Finally, people's assessment of the desirability of growth could be lessened, holding other causal factors constant, if they live in a county that has experienced a higher rate of growth in the past five years. It is relevant to note that the previous research on individual opinion formation in this area has rarely included aggregate measures of community context.

For the purpose of controlling for broad regional factors that may influence opinion formation on the desirability of growth (and not reflected in the previously discussed explanatory variables), the model also includes dummy variables for residence in different county-based regions of California (as defined by the Charlton Research Company, 1993). These include the Northern, Bay Area, Central Valley, Coast, Los Angeles, and Southern Counties.² The Northern Counties dummy variable has been excluded from the regression and reported coefficients indicate the influence of residing in the respective region relative to residing in California's Northern Counties. Precedence for these regional controls has been established in studies such as Dubbink (1984) that found unique attitudes towards community character in a northern and southern California county, the Knapp (1987) study that included controls for three different regions of Oregon where the impact of the state's land use controls were expected to be felt differentially, and the Glickfeld, Graymer, and Morrison (1987) study of Californians' growth attitudes that included community context as an independent variable.

Thus far we summarized models attempting to explain variance in people's views about the desirability of growth. Two final regressions examine the expected causal relationships between the characteristics of a person and belief in whether:

(1) local governments should voluntarily craft regional land use plans and (2) the state should require that local governments come together to form a coordinated regional land use plan. With one exception, the characteristics expected to influence one's opinion on these issues are the same as expected to influence one's thoughts on the desirability of growth. These latter regression models also include a dummy variable set equal to one if a person feels that "sprawl" is a very important issue in the region in which the individual resides.³ The general form of this second set of regression models are:

$$(2) \text{ Opinion on joint regional plan}_{i,t,r} = f(\text{age}_{i,t}, \text{race/ethnicity}_{i,t}, \text{gender}_{i,t}, \text{marital status}_{i,t}, \text{education}_{i,t}, \text{renter}_{i,t}, \text{employment status}_{i,t}, \text{household income}_{i,t}, \text{political view}_{i,t}, \text{relevant county characteristics}_{i,t}, \text{regional location in state}_{i,t}, \text{sprawl is a very important issue}_{i,t},)$$

where;

$$\begin{aligned} i &= 1, 2, 3, \dots \text{number of people surveyed,} \\ t &= 2002, \\ r &= B \text{ or } C \text{ form of joint regional plan.} \end{aligned}$$

Recall from the previous review that the term sprawl has become synonymous with unmanaged growth in a region and the negative consequences that it can generate. Our expectation was therefore that someone who feels that sprawl is an important issue in their region - holding constant other causal characteristics expected to influence opinions about growth - would also be more likely to express the opinion that local

governments should come together in some way to create a regional plan to deal with it.

To summarize, our original expectations were that the following variables would be negatively associated with limiting growth (in the precise terms of the Field Poll question language), other factors held constant: being African American, holding conservative political views, being less than a college graduate, and living in a county that generates relatively little per capita income, is not densely populated, and has not grown rapidly. We expected that these same factors would be negatively associated with support for regional planning, and that belief that sprawl is a very important problem in the region would be positively associated with such planning. We began with unclear expectations about the impact of other potentially important factors (e.g., personal income), because these variables have potentially crosscutting effects on perceptions of growth and planning.

SURVEY DATA

The data for the regression analyses are drawn from the Field Institute's 1989 and April 2002 California Polls. These polls use a random digital dialing technique and bilingual (English and Spanish) interviewers to gauge adult public opinion in the state on contemporary policy issues and political matters. The sample is stratified by each of the state's

counties and set up to guarantee a random sampling from the entire state.⁴

As a consequence of one of us being chosen as a Field Institute's Faculty Fellow, we were able to place a series of growth-related public policy questions on the April 2002 poll. Since we were also interested in how opinion on these issues has changed over time, we looked through earlier polls and found that the Field Poll last asked questions on the desirability of growth in 1989. So that our current results of polling could be compared with the results of the earlier survey, we chose to ask the same growth question that was poised in 1989. As well, we added questions on the desirability of voluntary cooperation or state intervention to further regional governance on this issue. Our questions were put to 510 Californians in April 2002 and, as calculated by the Field Institute, resulted in a sampling error for all adults in the state of +/- 4.5%age points at the 95% confidence level.⁵ The sampling error for the 496 Californians surveyed in 1989 was similar.⁶

An issue that arises with Field Polls is whether to use the weight variables developed by the Field Institute for particular surveys. The weight variables allow the samples to be adjusted to accord with known parameters in the California population as a whole. In effect, these variables give more weight to types of respondents who by chance numbered "too few" in the sample

(e.g., elderly people) and less weight to types of respondents who by chance numbered "too many" (e.g., women). The main problem with the weight variables is that they were calculated using different methods in 1989 and 2002 (for a more detailed discussion see Korey and Lascher, 2005). Consequently, the data used in this article are not weighted.⁷ Descriptive statistics for all explanatory variables used in the regression analyses are provided in Table 1.

The precise language of the survey questions that formed our dependent variables may also be important for evaluating our results. Following is the text for Questions A, the growth support question asked in 1989 and 2002, as well as for Questions B and C, the two regional planning questions asked only in 2002.

- **Question A** - Do you agree or disagree with the following statement? "The county where I live has reached its limit in respect to the amount of growth and development it can handle."
- **Question B** - Do you think that the city and county governments in your region should get together and agree on a regional plan relating to growth and land use issues or should each city and county in your region be allowed to make its own decisions on growth and land use issues within its own jurisdiction?
- **Question C** - Do you think that it is a good or bad idea for the state government to require that cities and counties in each distinctive region or metropolitan area in California come together and create a joint regional plan that would relate to growth and land use decisions in the region?

In Table 1, one may be surprised to see that real household income and county population density declined from 1989 to 2002 amongst those surveyed. As noted in a recent study of California by Reed (2004), real income growth amongst those with less than a high school education has been negative over this period. In addition, these findings are also due to sampling differences between the two surveys. It may be that the 1989 survey over sampled high-income households and people living in densely populated counties; though in regression analysis, this is expected to have no impact on the results reported as statistically significant. It is also informative to observe that four out of 10 Californians surveyed in 2002 stated that sprawl is a "very important" issue in the region that they live in. Though not reported in Table 1, 28 percent of those surveyed also felt that sprawl was a "somewhat important" issue in their region. Therefore, nearly seven out of 10 Californians surveyed by Field in 2002 felt sprawl to be at least a somewhat important issue in their region.

Descriptive statistics for the dependent variables are presented in Table 2. Before proceeding to results of a regression analysis, observe that there was no statistically significant difference in the sample means observed for Questions A in 1989 and 2002. Perhaps surprisingly, even after a 22.0% increase in statewide population (from 29.1 million in

1989 to 35.5 million in 2002), Californians as a whole were no more or no less likely to believe that the county that they lived in had reached its growth limit. Perhaps also surprising is that a greater majority of Californians in 2002 supported state mandated regional land use planning (71.6%) than local voluntary regional land use planning (53.0%). A reasonable explanation for this is people believing that voluntary regional land use planning will be less effective than state required in dealing with growth related consequences.

**Table 1: Descriptive Statistics for Explanatory Variables Used
in Regression Analyses**

Year	1989 Survey		2002 Survey	
Variable	Mean (St. Deviation)	Maximum (Minimum)	Mean (St. Deviation)	Maximum (Minimum)
Age	43.863 (16.574)	98 (16)	45.622 (16.741)	88 (18)
African American	0.051 (0.221)	1 (0)	0.057 (0.232)	1 (0)
Asian American	0.042 (0.200)	1 (0)	0.047 (0.212)	1 (0)
Latino	0.087 (0.281)	1 (0)	0.262 (0.440)	1 (0)
Female	0.524 (0.500)	1 (0)	0.522 (0.500)	1 (0)
Married	0.541 (0.499)	1 (0)	0.575 (0.495)	1 (0)
College Graduate	0.329 (0.470)	1 (0)	0.356 (0.479)	1 (0)
Renter	0.338 (0.473)	1 (0)	0.370 (0.483)	1 (0)
Employed	0.649 (0.478)	1 (0)	0.560 (0.497)	1 (0)
Household Income (2001 \$10,000's)*	63.648 (32.837)	124.775 (7.798)	55.966 (34.148)	100.000 (10.000)
Conservative	0.308 (0.462)	1 (0)	0.232 (0.422)	1 (0)
County Per-Capita Income (2001 \$10,000's)	29.837 (50.686)	48.582 (18.125)	32.707 (8.393)	69.500 (17.800)
County Population Density	1778.834 (3001.487)	15702.360 (5.800)	1424.290 (2130.924)	16798.720 4.270)
County 5-Year Population Growth Rate	9.831 (5.452)	27.02 (-0.135)	8.067 (3.866)	15.470 (-2.390)
Bay Area Resident	0.209 (0.407)	1 (0)	0.186 (0.390)	1 (0)
Central Valley Resident	0.129 (0.335)	1 (0)	0.131 (0.338)	1 (0)
Coast Resident	0.057 (0.232)	1 (0)	0.071 (0.256)	1 (0)
Los Angeles Resident	0.293 (0.455)	1 (0)	0.263 (0.441)	1 (0)

Southern Resident	0.240 (0.427)	1 (0)	0.261 (0.439)	1 (0)
Believes Sprawl a Very Important Issue in Region	Not Available	Not Available	0.400 (0.490)	1 (0)

* Respondents were asked to report their previous year's household income based upon ranges given them by the surveyor. The mid-range value was assigned to each respondent to turn these responses into continuous variables. In the 1989 survey the top household income was restricted to \$80,000 in current dollars, while the bottom was \$5,000; in the 2002 survey it was \$100,000 and \$10,000.

Table 2: Descriptive Statistics for Dependent Variables Used in Regression Analyses

Year	1989 Survey		2002 Survey		
Variable	Mean (Standard Deviation)	Maximum (Minimum)	Mean (Standard Deviation)	Maximum (Minimum)	Difference in Means t- statistic
Question A: Limit to Growth Reached	0.459 (0.499)	1 (0)	0.484 (0.500)	1 (0)	-0.92 [^]
Question B: Support Regional Planning - Local Voluntary	N.A.	N.A.	0.530 (0.500)	1 (0)	N.A.
Question C: Support Regional Planning - State Required	N.A.	N.A.	0.716 (0.451)	1 (0)	N.A.

[^] = Not statically significant from zero at a 90% or greater confidence level in a two-tailed test.

FINDINGS

Given that our growth and regional land use planning dependent variables are dichotomous, we used the logit regression estimation technique. In general, regression analysis is better than bivariate statistical analysis because it allows for the calculation of the effect of one explanatory variable, after controlling for the effects of other explanatory variables, on a dependent variable. Specifically we use logistic regression because statisticians believe it is superior to simple linear regression when the dependent variable is dichotomous.⁸ Logit regression results for Questions A, for both 1989 and 2002, and Questions B and C for 2002 are provided in Table 3.⁹ For all continuous explanatory variables we tried adding an additional quadratic term and kept it in the final regression specification if it was statistically significant. This allowed for the identification of non-linear influences on the respective dependent variables.

A brief description of how to interpret the Table 3 regression results is in order. Note that Table 3 indicates that a one-year increase in a respondent's age in 2002 (a continuous explanatory variable), holding other causal factors constant, is found to exert an 8.7 percent decrease in the odds of that individual agreeing that her county has reached its growth limit. The impact of age can be further understood by

considering two groups with the same non-age causal characteristics, with one group an additional year older. For every 100 people of the one-year younger age group that agree their county had reached its growth limit, there are 91.3 people of the one-year older age group who agree with this statement. The statistically significant quadratic term on age also indicates that the magnitude of people who were less likely to agree with this statement diminishes as the one-year increase in age occurs at higher age levels. Note also in Table 3 that the odds of a Los Angeles County resident agreeing that their county had reached its growth limit in 2002 was 190.9% greater than an otherwise similar Northern County resident. One may interpret this coefficient as indicating that among respondents with the same causal characteristics, except some live in Los Angeles County and others live in Northern Counties, 290.9 of the former believed that their county had reached its growth limit for every 100 of the latter who shared this opinion.

The results presented in Tables 3 provide some support for our original causal expectations. As expected, African Americans and college graduates were significantly more likely to support both forms of regional land use planning. Also as predicted, conservatives were less likely to support the state mandated form of regional land use planning. Finally, confirming our expectations, per-capita income in county of residence had a

positive influence in support for belief that one's county had reached its growth limit in 1989 and 2002, and that previous five year population growth rate in the county of residence for a respondent had a positive influence on their willingness to support voluntary land use planning in 2002 among localities in a region.

An informative way to interpret the results for the limit to growth reached Questions A is to look for influences that remained constant over both of the years that a question was asked, and to look for influences that only existed in 2002. For instance, in both 1989 and 2002, holding other causal factors included in the regression constant, female respondents were more likely to state that they believe their county has reached its growth limit. The effects ranged from women being 54.5% more likely to want to discourage population growth in their community than men in 1989, and the higher 61.2% in 2002. It is clear from these regression results that females were consistently more likely to believe that the costs of further growth in their county exceed the benefits. This is an extremely interesting finding and further evaluation should be given in future research on why this is the case. Could it be possibly due to situations that females are more likely to find themselves in (i.e., caregivers with the necessity of more auto travel and exposure to the congestion that unplanned growth can

bring), or is there something inherently different about the ways that men and women weight the costs verses the benefits of future growth?

Also stable in both 1989 and 2002 is the finding that if respondents lived in a higher per-capita income county, they were more likely to believe that their county had reached its growth limit. Interestingly, this influence declined slightly over the 13 year period between surveys. This finding is even more worthy of note given that there is no evidence that differences in people's own incomes exerts any influence on how they feel about further growth or regional land use planning. Thus, here is some indirect evidence that people are more likely to gauge the overall benefits of further growth less than the costs if other citizens in their county of residence are better off. Knapp (1987) also found that countywide votes on whether to overturn Oregon's land use program in 1982 were more likely to not favor repeal the higher the per-capita income in the county.

Unmistakably, the regression results in Table 3 indicate that the age of a respondent became an important factor in the determination of their opinion on the desirability of growth in 2002. In 1989 we found that age had no statistically significant influence on people's opinions on growth. In 2002, older people were less likely to say that their county had

reached its growth limit. The likelihood of respondents believing that their county had reached its growth limit decreased by 8.7 percent for every additional year of age reported by respondents, but this decrease fell off as age increased (as indicated by the positive regression coefficient on age squared.) Older respondents were also more likely to support the voluntary form of regional land use planning. Both of these results are further confirmation of the earlier finding by Connerly and Frank (1986) and Baldassare (1984) that support for the non-desirability of local growth and growth controls increases with age. Two additional findings to point out in regard to one's opinion on the desirability of further growth are that Asian Americans were less likely to support it in 1989, but had no statistically significant difference in opinion on it in 2002, and that Angelinos in both survey years were more likely to believe that further growth in Los Angeles County was not desirable. Holding other causal factors constant, there were 137 Los Angeles County residents per every 100 Northern Counties residents in 1989 that said the limit to growth had been reached in their county. This ratio jumped to 191 per 100 in 2002. This is very likely due to the benefits of growth (for more respondents) exceeding the costs in a highly urbanized area like Los Angeles County.

Table 3: Logistic Regression Results for the Non-Desirability of Overall County Growth and Desirability of Two Types of Regional Land Use Planning (Agree = 1, Disagree = 0)

Explanatory Variable	Question A - 1989 Results (Limit to Growth Reached)	Question A - 2002 Results (Limit to Growth Reached)	Question B - 2002 Results (Support Regional Planning - Local Voluntary)	Question C - 2002 Results (Support Regional Planning - State Required)
Believe Sprawl A Very Important Issue in Region	Not Used	Not Used		51.5%
			0.2535 (0.2174)	0.4156** (0.2441)
Age		-8.7%	2.0%	
	0.0027 (0.0076)	-0.0915* (0.0392)	0.0196* (0.0081)	-0.0070 (0.04088)
Age Squared		0.1%	Not Used	Not Used
		0.0011** (0.0004)		
African American			136.7%	912.1%
	-0.1331 (0.4577)	0.2862 (0.4574)	0.8618* (0.4902)	2.3146* (1.0516)
Asian American	232.5%			
	1.2016* (0.6469)	-0.2986 (0.5220)	0.4728 (0.5421)	-0.6594 (0.5490)
Latino				111.5%
	0.2059 (0.3676)	0.3399 (0.2752)	0.2937 (0.2875)	0.7490* (0.33351)
Female	54.5%	61.2%		
	0.4350* (0.2082)	0.4776* (0.2176)	-0.2429 (0.2166)	-0.0535 (0.2390)
Married				
	0.1104 (0.2229)	-0.0831 (0.2413)	-0.0250 (0.2411)	0.1944 (0.2673)
College Graduate			95.3%	67.5%
	-0.0352 (0.2264)	0.0581 (0.2387)	0.6693** (0.2388)	0.5159* (0.2649)
Renter			72.2%	
	-0.2148 (0.2466)	-0.2596 (0.2820)	0.5435* (0.2854)	0.1483 (0.3164)

Employed				
	-0.1311	0.3339	-0.1922	-0.4064
	(0.2520)	(0.2420)	(0.2367)	(0.2645)
Household Income				
in (2001	-0.0056	-0.0010	0.0065	-0.0045
\$10,000's)	(0.0040)	(0.0042)	(0.0041)	(0.0044)
Conservative				-36.4%
	-0.0965	0.2846	-0.3137	-0.4511*
	(0.2256)	(0.2511)	(0.2518)	(0.2649)
County Per-Capita	8.8%	6.3%		
Income (2001	0.0841*	0.0607*	-0.0118	0.0113
\$10,000's)	(0.0421)	(0.0255)	(0.0238)	(0.0256)
County Population				
Density	-0.000008	-0.00003	-0.00006	0.00004
	(0.00004)	(0.00007)	(0.00006)	(0.00008)
County 5-Year			55.2%	
Population	-0.0206	-0.178	0.4393**	-0.0138
Growth Rate	(0.0295)	(0.242)	(0.1711)	(0.0451)
County 5-Year	Not Used	Not Used	-2.4%	Not Used
Population			-0.0239**	
Growth Rate²			(0.0085)	
Bay Area Resident				
	-0.2751	0.2787	-0.1181	0.5314
	(0.5760)	(0.5934)	(0.6099)	(0.6029)
Central Valley				179.3%
Resident	0.0197	0.6274	-0.4099	1.0273**
	(0.4749)	(0.4951)	(0.5189)	(0.5089)
Coast Resident				
	0.4224	0.1589	-0.9244	0.0453
	(0.5885)	(0.5637)	(0.5804)	(0.5635)
LA County	137.0%	190.9%		
Resident	0.8629*	1.0678*	-0.4424	0.6303
	(0.4413)	(0.4514)	(0.4478)	(0.4542)
Southern County				
Resident	0.1852	0.6385	-0.3324	0.1832
	(0.5277)	(0.5328)	(0.5321)	(0.5293)
Constant	-2.6355*	-1.1595	-2.3355*	0.4241
	(1.3738)	(1.2733)	(1.1267)	(1.0297)
Observations	451	428	422	416
Hit Ratio	61.9%	63.6%	61.6%	72.8%

** = Stastically significant from zero at 99% or greater confidence in a two-tailed test and * = 90 to less than 99% confidence.

We turn now to analyzing factors explaining support for planning efforts in 2002. The logit regression results recorded in Table 3 for Questions B and C are based upon dichotomous dependent variables respectively recorded as one for people who thought local government in a region should voluntarily come together and that the state requiring them to come together was a good idea, and a zero for those who thought otherwise. The results presented in Table 5 indicate that people who believed that sprawl was an important issue in their region were 52% more likely to indicate that state government should require cooperation among local governments to form a regional land use plan. This is perhaps not surprising. What may be a surprise is the magnitude of the effects of the demographic characteristics found to be significant. For instance, African Americans were 912% more likely to believe in the need for state intervention than the excluded category of those surveyed who did not also consider themselves Asian American or Latino. Furthermore, Latinos and college graduates were respectively 122% and 68% more likely to indicate that state intervention to require a regional plan is a good idea. Conceivably these significant findings for race/ethnicity can be attributed to the

fact that Californians who self identify as African American or Latino are more likely to live in the central urban places that would more likely benefit from the state requiring joint land use planning among localities in a region. Not surprising are the additional significant findings that conservatives are 36% less likely to support state intervention, and residents of California's Central Valley - where loss of farmland and long commutes to outlying areas are major grass root policy concerns - were 179% more likely to support the state requirement.

Table 5 also indicates that African Americans, college graduates, and renters were more likely to support local voluntary actions taken to produce a regional growth plan. As well, as one grows a year older and their household income rises by \$10,000, we find that that they are respectively 2.0% and 0.7% more likely to support these same voluntary plans. A higher previous five-year county population growth rate was also found to exert a positive influence on support for voluntary regional planning, though this positive influence diminished at higher population growth rates.

DISCUSSION AND CONCLUSION

This paper offers a regression-based analysis of individual attitudes toward growth that is built upon the previous research in this area, but also goes beyond existing studies in a number of respects. A key feature of our research is that it examines

the influence of relevant characteristics of individuals on their beliefs in whether their county of residence had reached its growth limit and support for two specific policy mechanisms to deal with the consequences of growth. Still another is that the analysis of individual opinion formation on the desirability of county growth uses the same survey question and individual characteristics drawn from a random sample of Californians in 1989, and then 13 years later in 2002.

Our results confirm many of the findings of previous statistical studies on the causes of opinion formation on the desirability of growth and growth management/control public policies to deal with its consequences, but also offer some new insights. For instance, as Gooddiener and Nieman (1981), Connerly and Frank (1986) and Chapin and Connerly (2004) earlier found, as shown in Table 2 our overall survey results show broad/majority support for public policies to try and mitigate the consequences of growth; i.e., 53% of Californians in 2002 supporting local voluntary regional planning and 72% supporting state required regional planning. Confirming earlier findings of Gooddiener and Nieman (1981), Baldassare and Potash (1982), Potash and Baldassare (1983), Knapp (1987) and Connerly and Frank, we also find that citizen support for local growth or growth control policies were significantly related to only a few socio-economic characteristics. Along with Gooddiener and

Nieman, and Connerly and Frank, our results show that support for a statewide land use program is greater among those who are more concerned over the consequences of sprawl. And like Connerly and Frank, and Baldassare (1984), this research confirms that as people age they are more likely to favor local growth, and that conservative political attitudes do have an influence on support for government based growth control policies.

Our study underscores the need for further research about attitudes related to this policy area. We can conclude that people's opinions about growth are complex and not easily defined by their social economic characteristics alone. As indicated by our theoretical discussion it is not always possible to identify clear expectations about how some specific variables will influence attitudes, and those expectations that we did identify (and the implied expectations of other researchers) were not consistently borne out in the data. Furthermore, as Chapin and Connerly (2004) suggest, attitudes among some social groups may have been diverging in recent years.

In advocating further work in this area, we also wish to highlight four themes of the present study that justify more scrutiny. First, in contrast to much of the prior work (but consistent with one of the most recent studies: Chapin and

Connerly, 2004) we find gender to be a significant predictor of attitudes with women being less supportive of growth. Perhaps this is not altogether surprising in light of research showing the political attitudes of American women and men diverging across a wide range of issues, although not in a uniform manner (see for example Kaufmann and Petrocik, 1999). An important public policy implication is that women may be more open to the appeals of growth control and Smart Growth advocacy that some political leaders have championed.

Another theme is that life-cycle factors appear to have become increasingly important in rapidly growing states. An example is the evidence of the increased importance of age for the attitudes of Californians; only in 2002 was the age of the respondent related to their expressed opinions on growth. In that year, each additional year of age was associated with reduced likelihood of finding county growth objectionable. It is reasonable to surmise that as one ages, one's economic situation improves in ways that may not be reflected in the simple home ownership, income, and employment variables included in our model. Thus, this age effect could be due in part to an improving economic situation. However, an alternative explanation cannot be dismissed: a "vintage" effect whereby the young in 2002 may have been exposed to different ideas about the benefits and costs of growth and thus have formed age-

distinguishable opinions that will decline in influence as the entire society comes to accept them. It would be informative to design and test a research methodology that could distinguish between these two feasible explanations for the age effect that we, and other research before us, have found.

A third theme is that concern about sprawl is indeed related to support for regional planning. We found that holding a host of other variables constant, someone who believed that sprawl was a very important issue in the region was 52% more likely to call for a state requirement for regional planning. For those who have advocated for greater public awareness of the costs of sprawl as a way to promote smart growth through regional planning (see for instance Downs, 1999), this finding is likely reassuring. If concern over the negative consequences of sprawl continues to grow in voter's minds, then a new reform movement that would bring statewide requirements for regional coordination of local land use planning decisions becomes more likely.

Finally, our findings provide reason to be less skeptical than Gainsborough (2002, p. 742) with respect to the potential for developing a coalition of social groups in support of growth control policy. Based on a study of opinions in New York and Los Angeles, she concluded that growth "places political liberals and blacks on opposing sides of this issue and creates

an unusual alignment of groups suspicious of growth controls: conservatives, African-Americans, and the poor." We found decisive evidence that African Americans were supportive of efforts to require regional planning—an opinion shared by Latinos, a very large and rapidly growing social group in the Golden State and elsewhere. This clear support for a specific policy option may be related to the traditionally greater support for activist government by blacks and Latinos (see also Chapin and Connerly, 2004; on the evidence of support for activist government among Latino citizens more generally, see especially Baldassare, 2002). In any event, our study suggests that African Americans, Latinos, and liberal whites may be able to find common ground after all with respect to anti-sprawl measures.

REFERENCES

- Abramowitz, Alan I., and Kyle S. Saunders (1998). Ideological Realignment in the U.S. Electorate. *Journal of Politics* 60 (August):634-652.
- Albrecht, Don E., Gordon Bultena, and Eric Hoiberg (1986). Constituency of the Antigrowth Movement: A Comparison of the Growth orientation of Urban Status Groups. *Urban Affairs Quarterly* 21 (4): 607-16.
- Allswang, John M. (2000). *The Initiative and Referendum in California, 1898-1998*. Stanford: Stanford University Press.
- Baldassare, Mark (2005). *Orange County Surveys: A Digital Archive*. Irvine, CA: University of California, Irvine Library. Available at <http://data.lib.uci.edu/ocs> .

Baldassare, Mark (2002). A California State of Mind: The Conflicted Voter in a Changing World. Berkeley: University of California Press.

Baldassare, Mark and William Protash (1982). Growth Controls, Population Growth, and Community Satisfaction. American Sociological Review 47 (June): 339-46.

Baldassare, Mark (1984). Predicting Local Concern About Growth: The Roots of Citizen Discontent. Journal of Urban Affairs 4 (Fall): 39-49.

Bollens, Scott A (1990). Constituencies for Limitation and Regionalism: Approaches to Growth Management. Urban Affairs Quarterly 26 (September): 46-67.

Brueckner, Jan K. (2001). Urban Sprawl: Lessons from Urban Economics. William G. Gale and Janet Rothenburg Pack eds., Brookings Wharton Papers on Urban Affairs, Washington, D.C.: Brookings Institute Press: 65-89.

California State Association of Counties/California Institute for County Government (2003). California County Fact Book 2003. Sacramento: CSAC/CICG.

Campbell, Paul (1997). Population Projections: States, 1995-2025. Current Population Reports, P25-1131 (May), Washington, D.C.: U.S. Bureau of the Census. Available at <http://www.census.gov/prod/2/pop/p25/p25-1131.pdf> .

Chapin, Timothy S. and Charles E. Connerly (2004). Attitudes Towards Growth Management in Florida. Journal of the American Planning Association 70 (Autumn): 443-452

Charlton Research Company (1993). The Six States of California: California Issues 1993. Pleasanton, California.

Connerly, Charles E. and James E. Frank (1986). Predicting Support for Local Growth Controls. Social Science Quarterly 67: 572-586.

Downs, Anthony (1999). Some Realities about Sprawl and Urban Decline. Housing Policy Debate, 10(4):955- 974.

Dubbink, David (1984). I'll Have My Town Medium-Rural, Please. American Planning Association Journal (Autumn): 406-18.

Dunlap, Riley E., Chenyang Xiao, and Aaron McCright (2001). Politics and Environment in America: Partisan and Ideological Cleavages in Public Support for Environmentalism. *Environmental Politics*, 10 (4): 23-48.

Ewing, Reid (1997). Is Los-Angeles-Style Sprawl Desirable? *Journal of the American Planning Association* 63(1): 107-126.

Flint, Anthony (2001). Sprawl, Livability Called Voter Issues: Democratic Advisor Irked by Some Plans for "Smart Growth". *The Boston Globe*, December 18: B6.

Gainsborough, Juliet F. (2000). Slow Growth and Urban Sprawl: Support for a New Regional Agenda? *Urban Affairs Review* 37(50): 728-744.

Glickfeld, Madeline, Leroy Graymer, and Kerry Morrison. (1987). Trends in Local Growth Control Ballot Measures in California. *UCLA Journal of Environmental Law and Policy*, 6(2): 111-158.

Gordon, Peter and Harry Richardson (1997). Are Compact Cities a Desirable Planning Goal? *Journal of the American Planning Association* 63(1): 93-104.

Gottdiener, M. and Max Neiman (1981). Characteristics of Support for Local Growth Control. *Urban Affairs Quarterly* 17 (September): 55-73.

Hansen, Susan B. 1999. Governors' Job Performance Ratings and State Unemployment: The Case of California. *State and Local Government Review*, 31 (Winter): 7-17.

Kaufmann, Karen M., and John R. Petrocik (1999). The Changing Politics of American Men: Understanding the Sources of the Gender Gap. *American Journal of Political Science* 43 (3): 864-887.

Knapp, Gerrit J. (1987). Self-Interest and Voter Support for Oregon's Land Use Controls. *Journal of the American Planning Association* 53(1): 92-97.

Korey, John L and Edward L. Lascher, Jr. (2005). Macropartisanship in California. *Public Opinion Quarterly* (forthcoming).

- Mills, Edwin S. (1999). Truly Smart 'Smart Growth'," Illinois Real Estate Letter (Summer0. Office of Real Estate Research, University of Illinois. Available at <http://www.business.uiuc.edu/orer/V13-3-1.pdf> .
- O'Neill, David (1999). Smart Growth: Myth and Fact. Washington, D.C.: ULI-the Urban Land Institute. Available at http://research.uli.org/Content/Reports/PolicyPapers/PUB_S50.pdf
- .
- Pampel, Fred C. (2000). Logistic Regression: A Primer. Sage University Press, Series (132): Quantitative Applications in the Social Sciences.
- Penn, Mark J. Why Voters Care about the Quality of Life. The New Democrat Blueprint(Fall): 74-88.
- Protash, William and Mark Baldassare (1983). Growth Policies and Community Status: A Test and Modification of Logan's Theory. Urban Affairs Quarterly 18 (3): 397-412.
- Public Policy Institute of California (2002). PPIC Statewide Survey: Special Survey on Land Use. San Francisco, CA, November. Available at http://www.ppic.org/content/pubs/S_1102MBS.pdf .
- Real Estate Research Corporation (1974). The Costs of Sprawl: Environmental and Economic Costs of Alternative Residential Development Patterns at the Urban Fringe: Detailed Costs Analysis. Washington, DC: Council on Environmental Quality; Department of Housing and Urban Development; Environmental Protection Agency, April.
- Reed, Deborah (2004). Recent Trends in Income and Poverty. California Counts 5 (3), San Francisco, CA: Public Policy Institute.
- Squires, Gregory D, ed. (2002). Urban Sprawl: Causes, Consequences and Policy Responses. Washington, D.C.: Urban Institute Press.
- Wassmer, Robert W. and Marlon G. Boarnet (2001). The Benefits of Growth, Washington, D.C.: ULI - The Urban Land Institute. Available at <http://www.csus.edu/indiv/w/wassmerr/benefitsofgrowth.pdf> . .

NOTES

¹ See O'Neil (1999) or the U.S. Environmental Protection Agency's (EPA's) web page on Smart Growth at <http://www.epa.gov/livability> for examples of the tools most often proposed to mitigate the negative outcomes associated with sprawl.

² The Northern Counties are defined by the Charlton Research Company as Amador, Butte, Colusa, Del Norte, Humboldt, Lake, Lassen, Mendocino, Napa, Nevada, Placer, Shasta, Siskiyou, Sonoma, and Tehama; the Bay Area Counties as Alameda, Contra Costa, Marin, San Francisco, Santa Clara, and San Mateo; the Central Valley Counties as Calaveras, El Dorado, Fresno, Kern, Kings, Madera, Sacramento, San Joaquin, Solano, Stanislaus, Tulare, and Yolo; the Coast Counties as Monterey, San Benito, San Bernardino, San Luis Obispo, Santa Barbara, Santa Cruz, and Ventura; and the Southern Counties as Imperial, Orange, Riverside, and San Diego. Los Angeles County remains in its own regional category. In 2002 there were no poll respondents from Alpine, Glenn, Inyo, Mariposa, Merced, Modoc, Mono, Plumas, Sierra, Sutter, Trinity, and Tuolumne Counties. In 1989 there were no poll respondents from Alpine, Colusa, Inyo, San Benito, Tehama, and Trinity Counties.

³ Specifically the question was asked as: "Recently there has been a lot of talk about population growth and development in the suburbs and outer edges of California's urban areas. Some people refer to this as "sprawl". How important of a problem is sprawl in the region where you live - very important, somewhat important, not very important, or not all important?"

⁴ See the Field Poll's web site at <http://field.com/fieldpoll> for a more detailed description.

⁵ The short report, "A Digest of California Public Opinion on Growth and Development," that further summarizes the results of this poll and breaks responses down by reported characteristics (but does not include a regression analysis), was produced by the Field Research Corporation and can be found at <http://field.com/fieldpollonline/subscribers/COI-02-May-Population.pdf> .

⁶ Some may be concerned that our sample size of about 500 survey respondents, and even smaller numbers of respondents in specific categories (i.e., African American, Asian American, Coast Resident, etc.), may be too small to conduct a detailed analysis

of the determinants of growth attitudes. We deal with that concern through the use of regression analysis and t-tests on specific regression coefficients for statistical significance. These t-tests account for the size of our sample. What should be noted is that the less than ideal size of our sample results in a bias toward rejecting the importance of an explanatory variable.

⁷ We ran alternative regression analyses using the weighted data. The results are substantially similar to those we report in the following section: a large majority of the coefficients that are statistically significant in one specification are statistically significant in the other, and have the same positive or negative sign. However, in a few cases coefficients would gain or lose statistical significance if the weighted data were used.

⁸ Pampel (2000) describes the two reasons why statisticians believe that a logistic regression is superior to a linear regression when the dependent variable is dichotomous. The first reason is conceptual and is based on the fact that a linear regression will predict the value of the dependent variable to be greater than one or less than zero. Such predicted values make no sense. The second reason is statistical and involves the violation of assumptions required for the appropriate use of linear regression. The use of linear regression is based on the assumptions that the error values around the predicted dependent variable are normal in their distribution for each explanatory variable, and the dispersion of the error value is the same (homoscedastic) for each explanatory variable.

A logit regression coefficient shows the change in the predicted logged odds of experiencing the event coded as one, given a one-unit change in the respective explanatory variable, while holding other explanatory variables constant. Unfortunately, this alone has no intuitive meaning and accordingly the regression coefficients found to be statistically different from zero at the 90% confidence level or above in a two-tailed test have been transformed into the percentage increase or decrease in the odds of someone expressing a dislike for growth or like for a form of regional land use planning, given a one unit change for a continuous explanatory variable, or when an explanatory dummy variable takes on the value of one. This transformation involves subtracting one from the exponent of the respective logit regression coefficient and multiplying this value by 100.

Pampel (2000) offers a detailed description of the method of logistic regression, the interpretation of the regression coefficients it produces, and the ways to transform them into the more intuitive form used here. The Statistical Package for the Social Sciences (SPSS) was used for estimation.

⁹ The body of Table 3 includes, first in bold, the statistically significant percentage change in the odds of the regression's dependent variable equaling one if the respective explanatory variable changes by one unit if a continuous explanatory variable and takes on the value of one if a dummy variable. Below this percentage change is the logit regression coefficient. Below that, in parenthesis, is the standard error of the logit regression coefficient.

The hit ratio recorded at the bottom of Table 3 indicates the percentage of correctly predicted dichotomous outcomes, or "hits", by multiplying the actual values of a person's explanatory variables by the estimated logit regression coefficients and forecasting the probability that the dependent variable equals one. If the probability is greater than 0.5 and the actual value is one, or if the probability is less than 0.5 and the actual value is zero, then a hit is recorded.