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SUSTAINABLE TRANSPORTATION CENTER *of the Institute of Transportation Studies*



Achieving Sustainability in California's Central Valley

EXECUTIVE SUMMARY

A report by the UC Davis Sustainable Transportation Center

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A report by the



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INTRODUCTION

The concept of sustainability has been described as “the current object of planning’s fascination” (Campbell, 1996), especially in fast-growing areas attempting to balance economic, social and environmental priorities for long-term community welfare. California’s rapidly growing Central Valley is one such area. The Central Valley is at a critical juncture—the 2009 population of about seven million people is expected grow to 12 million people by 2040 according to California Department of Finance estimates. “By developed world standards, such growth is phenomenal, outstripping any other region in California, the United States, and even Mexico (Johnson and Hayes 2004; p.7).

This report assesses the capacity of the Central Valley’s cities to manage the economic, social, and environmental problems associated with this rapid population growth in a sustainable manner, offering alternatives to sprawl and automobile-dependent lifestyles. California’s response to climate change will only bring these issues more to the forefront as state laws like SB375 and AB32 encourage local governments to take action to reduce emissions.

We developed an “environmental policy sustainability” index to measure the presence of 50 different sustainability policies in 100 incorporated Central Valley cities in Butte, Colusa, El Dorado, Fresno, Glenn, Kern, Kings, Madera, Merced, Placer, Sacramento, San Joaquin, Shasta, Stanislaus, Sutter, Tehama, Tulare, Yolo and Yuba counties. The index includes policies thought to contribute to the “triple bottom-

line” (Rogers and Ryan 2001) of economic, environmental, and social welfare, but focuses on environmental sustainability policies. (See Table 1 on page 2 for full listing of policies.)

We searched archival information (i.e. general plans, city ordinances, websites) to determine if a particular policy existed in a city and then surveyed local planning officials about the existence of the same policy. This information was combined into an index within each city that had a possible range from 0-50; observed scores ranged from 5-33 with an average of 17. Figure 1 (page 3) shows a map of the sustainability index, and more detailed information about its construction can be found in the full report, *Achieving Sustainability in California’s Central Valley*, online at http://pubs.its.ucdavis.edu/publication_detail.php?id=1286.

Second, we conducted case studies in seven Central Valley cities—Fresno, Modesto, Davis, Wheatland, Lincoln, Sacramento, and Citrus Heights. These cities reflect the diversity of the Central Valley, ranging from high to low on the index, and including both small rural cities and major urban centers.

The case studies consist of interviews with key city officials about the definition of sustainability, the policies in place in the city, and the factors that influence the city’s ability to pursue sustainability goals. Many technical details regarding development of the environmental policy sustainability index are in the full report, which also contains profiles of individual cities.



Large and More Urban Cities Have More Policies

The statistical analysis (see Appendix A and full report for details) suggests that geographically larger, more populous, and higher density cities were more likely to have high index scores. The sustainability index was also higher in cities with better tax bases, and lower in cities that relied heavily on intergovernmental revenues. In terms of social characteristics, the index was higher in cities with professional and managerial workforces (so-called “intellectual capital”), higher income/education, and a well-established development industry.

The statistical analysis also suggests that Central Valley cities fall into four groups: traditional rural, transitioning

rural, Sacramento suburban growth, and established urban centers. Each type of city faces somewhat different challenges in achieving sustainability. The Sacramento regional growth cities score relatively high on the sustainability index and have many factors predicted to encourage sustainability such as extremely high growth, low reliance on intergovernmental revenue, and a well-educated and wealthier population. At the same time, these Sacramento suburbs are some of the most politically conservative constituencies in the region, where sustainability principles may conflict with citizen preferences. The transitioning rural cities are moving away from the agricultural economy of the Central Valley,

Table 1. List of Policies Included in the Index

Land Use (8)

- Comprehensive Land Use Plan Includes/Identifies Environmental Sensitive Areas
- Habitat Conservation Planning under ESA
- Encourages Conservation Easements
- Williamson Act Lands in Jurisdiction
- Williamson Act Support
- Minimum Density Standards
- Eco-Village Project or Program
- Growth Phasing

Zoning (6)

- Green Zoning
- Agricultural Zoning
- Up-Zoning
- Inclusive Use Zoning
- Mixed Use Zoning
- Urban Growth Boundary

Transportation (6)

- Traffic Impact Analysis
- Public Transit System
- Downtown Parking Limits
- Carpool Program
- Alternative Fuel Fleet Vehicles
- Bicycle Ridership Program

Economic Development/Redevelopment (9)

- Eco-Industrial Park Development
- Cluster or Targeted Economic Development
- Infill Financial Incentives
- Impact Fees
- Mandatory Dedication
- Negotiated Exactions
- Public Redevelopment Investment
- Redevelopment Authority
- Brownfield Redevelopment

Pollution Prevention and Mitigation (10)

- Air Pollution Mitigation Program
- Superfund Site Remediation
- Asbestos Abatement Program
- Household Solid Waste Recycling
- Household Hazardous Waste Recycling
- Household Green Waste Recycling
- Commercial Solid Waste Recycling
- Commercial Hazardous Waste Recycling
- Industrial Recycling
- City Government Recycled Product Purchase

Resource Conservation (5)

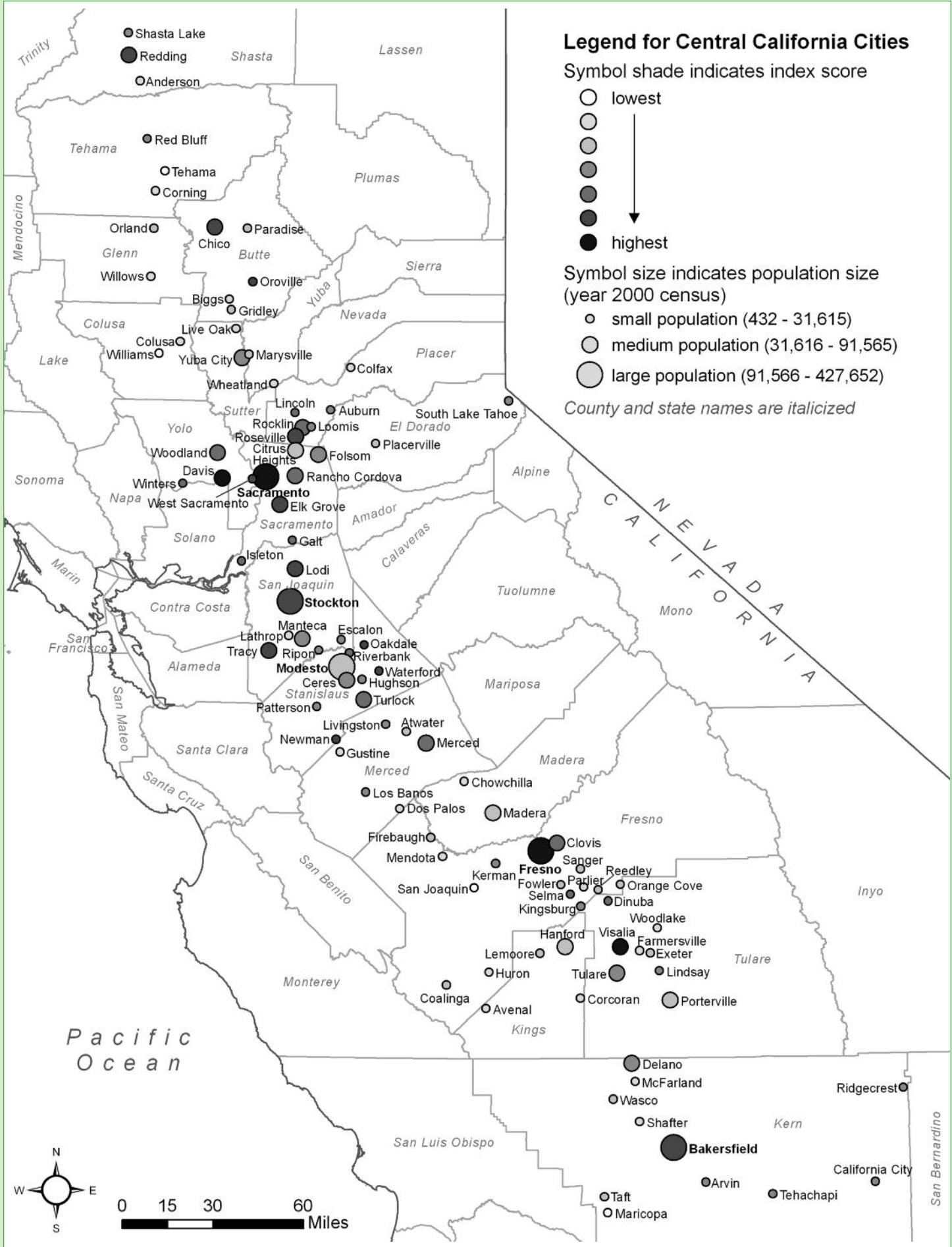
- Commercial Green Building Program
- Energy Conservation Programs
- Renewable Energy Use by City Government
- Consumer Alternative Energy
- Water Conservation Program

Administration and Coordination (2)

- Sustainability Agency/Non-Profit
- Sustainability Goals in Comprehensive Plan

Green Symbols and Membership (4)

- Green Symbol Logos
- Member, International Council for Local Environmental Initiatives
- Member, Cities for Climate Protection Campaign
- Signatory, Mayors' Climate Protection





and population growth in these cities is accompanied by increasing education and wealth, which are important resources for implementing sustainable policies. The transitioning cities generally have many opportunities for creating sustainable growth patterns because they still have space to expand. In contrast, many of the established urban centers such as Sacramento and Fresno have already filled much of their available space and made development decisions that will constrain future choices. The traditional rural cities score the lowest on the index and have small populations, poor fiscal health, and low educational levels. Achieving sustainability in these cities will probably require substantial investment from outside actors such as state government or non-profit groups. While these cities may not need sustainability policies now, they will very likely need them if they continue to grow.

Overall, sustainability appears to be a largely urban phenomenon, occurring in Central Valley cities where the process of development is correlated with increasing education, professionalism, tax revenue, and less dependence on intergovernmental revenues. Some of these cities are large urban centers that are grappling with the consequences of past rapid growth, while other cities are currently experiencing rapid growth and are sometimes adopting sustainability policies earlier than their larger neighbors.

Multiple Views on Sustainability

We asked the case study participants to reflect on the meaning of sustainability, and not surprisingly there were multiple perspectives. Officials in cities that scored higher on the sustainability index generally reported an integrative view of sustainability that focuses on balancing social, environmental, and economic goals for the long term, in ways that foster cooperation among competing interests. Other cities tended to emphasize the economic aspect of sustainability in terms of maintaining the fiscal health of a city. Overall, the social aspect of sustainability received the least

attention, while participants generally agreed on the importance of a long-term perspective. Many of these competing views were played out in the context of specific development projects, demonstrating how sustainability is linked to the traditional politics of urban growth.

Integrating Sustainability Into General Plans

Nearly all cities pointed to the contents of their general plans as places where sustainability issues are addressed. General plans are “part intent, part feasible future” (Innes 1996) and thus reflect a city’s preferences for development patterns. Davis has a history of general plans that pay attention to integration of land use and transportation, identification of infill opportunities, especially in the housing element, and planning for higher density development to reduce boundary expansion. Officials in Fresno noted that the general plan update in 2002 focused development inward and upward, rather than outward. Sacramento updated its general plan in 2008, with specific integration of sustainability practices and a long-term planning horizon to 2030. The concept of sustainability is established in the Sacramento General Plan as the fourth goal, after (1) affordable housing, (2) economic development, and (3) safe neighborhoods. Lincoln, following Placer County’s 50-year Habitat Conservation Plan, recently took the unusual step of writing a 2050 General Plan for the city, with the goal of guiding the community all the way to “build out.”

The process by which general plans are developed has an important influence on how well their content addresses city goals. More recently created general plans or updates have relied on expanded forms of public participation, such as the crafting of vision statements and citizen advisory committees. This type of public participation is considered an aspect of good planning in general, and is not necessarily unique to sustainability. However, the level of public participation in such processes varies across cities, and some cities in the Central Valley—such as Modesto—have lower levels of overall participation.

Formal and Informal Coordination Mechanisms

A key factor influencing the level of sustainability practices was development of formal and informal mechanisms to facilitate coordination and build networks among city departments, and also between the city council, city administration, and citizen commissions. The sustainability manager in Davis and the Green Team in Citrus Heights coordinate and communicate across city departments to focus on common sustainability goals. Citrus Heights also conducts bi-monthly development review meetings that include all city departments, service contractors, and sometimes developers to insure awareness and coordination of upcoming projects. Annual strategic planning retreats involve the city council, commissions, and administrative staff. Sacramento's recent general plan's development was facilitated by Leadership Workshops that brought together relevant appointed boards and commissions, the city council, department heads, and city manager all in one room, as well as focus groups with environmentalists and developers.

Second, cities that score high on the sustainability index are also more likely to have administrative mechanisms in place to forward sustainability goals. In Citrus Heights, the Green Team facilitates green practices like use of recycled paper and energy efficient lighting. Fresno has Fresno Green, a comprehensive set of 25 strategies with the stated objective of making Fresno "a sustainable city by 2025." Davis has a sustainability program manager who coordinates multiple departments, and is charged with analyzing what policy options will give the "most bang for the buck" in terms of sustainability goals like reducing greenhouse gasses. Davis also has recently created a Climate Action Team as an ad-hoc citizens' committee to advise the city on climate policy.

Fostering New Urbanism

Many observers recommend adopting the principles of new urbanism or smart growth—minimizing the impacts of sprawl, promoting infill development, and creating walkable communities—as a way to reconcile environmental and economic priorities in the context of specific development proposals and site design.

In Sacramento, a strong commitment to sustainable living plus a limited inventory of developable land is resulting in a push for mixed-use infill development. "The Railyards" infill project will nearly double the downtown footprint and add 12,000 housing units. City officials in Modesto cited improvement efforts downtown as a positive first step to

higher-density developments. Modesto Mayor Jim Ridenour and Modesto City Councilman Brad Hawn support regionalization of water and sewer services, as well as potentially even planning departments and master plans.

The Wheatland Community Vision project of 2008 outlined a three-pronged approach: attracting a diverse employment base; channeling development into a modular, village-type concept; and maintaining the small-town character by incorporating agriculture into the urban environment. Mayor Primo Santini described Lincoln's approach to growth as new urbanism, where new growth is organized into seven semi-autonomous villages, each of them roughly the size of the historic core of Lincoln itself, between 800-2000 acres. In addition, Lincoln is a participant in a pilot electric vehicle program, and is building neighborhood electric vehicle paths. "We're going to try to organize our growth so that you don't have to get in your car or go very far to accomplish what you need to," Santini said.

Fresno's sustainability policies center on two initiatives: an action-oriented plan called Fresno Green identifying strategies and implementation tactics intended to transform Fresno into a sustainable city, and Southeast Growth Area (SEGA), a major new growth community representing a wholesale departure from the standard low-density, single-family development of years past.

New urbanism projects sometimes collide with the politics of growth, as seen in Davis, where two proposed new urbanism projects were recently cancelled. One project, Covell Village, was rejected by voters in 2006, while another project called Cannery Business Park was withdrawn by the developer after the city council asked for a new environmental impact statement before agreeing to rezone the property. While Davis has one of the highest scores on our sustainability index, concerns about the amount and character of growth in the city have derailed projects that were at least purported to be following new urbanism design.

Fiscalization of Land Use

Nearly every case study participant mentioned the fiscalization of land use as a major barrier to the implementation of sustainability policies. Cities are driven by financial incentives regarding balancing revenue and expenditures. City revenues such as property taxes, sales taxes, service fees, and impact fees are tied to land use intensification and population growth. This so-called "fiscalization of land use" (Lewis 2001) creates a financial disincentive for cities to restrict growth or encourage the high-density development that is often promoted by smart growth or sustainability advocates. These financial issues are particularly acute in



California because of Proposition 13, passed in 1978, which reduces the availability of property taxes and encourages cities to search for alternative revenue sources like sales tax from big box retail and user fees on new development. As demand for services and costs continues to rise, many cities view growth as the only way to maintain fiscal sustainability.

Budgets and Planning Resources

The fiscal health of a city translates into planning resources, including staff time devoted to sustainability issues and resources available for implementing new policies. The planning manager in Citrus Heights said she has adequate resources. Davis created a sustainability program manager position in 2008, which is a 50-75% position split with the open space planner. Fiscal health in Fresno is presumably related to the city's ability to hire a consultant planner for the design of the 14-square-mile Southeast Growth Area, although this wasn't explicitly mentioned by any city officials. Other cities like Sacramento have large deficits, limiting their ability to take on new staff or projects. Modesto is reportedly facing a deficit of \$10 million in FY 09/10. The city recently shelved its needed general plan update because it lacked funds to hire a senior planner to lead the project. Some smaller cities have very limited planning departments, and often contract with consultants to create their general plans. The degree to which these consultants integrate sustainability principles into their services is an important consideration. Tim Raney, former mayor of Citrus Heights and current owner of Raney Planning and Management, contracts with Wheatland as their community development director. He has advocated innovative policies for a city of Wheatland's size, including water reclamation and clean-burning agricultural waste cogeneration as an alternative energy source.

Fiscal constraints will have a big impact on the ability of any city to respond to new state laws such as AB32 and SB375, which encourage cities to change their general plans to meet climate change goals.

City Council Politics

The preferences of the city council have a strong influence on the number of sustainability practices, the resources devoted towards implementation, the types of developments approved, and the overall rate of growth in a city. In Davis, there is a conflict between "slow growth" and "moderate growth" city council members, with the majority of the council currently in favor of a one-percent growth cap. In Citrus Heights, the council is concerned with redevelopment of commercial corridors; as one respondent put it, "now the council is made up of individuals who are...pro-good growth. They are supportive of growth but really concerned about neighborhood issues." In Modesto, some city council members feel strongly that a change in housing style or growth is inconsistent with lifestyle expectations of Central Valley residents, while others feel equally strongly that a new type of development is needed. In Fresno, members of the council who were interviewed seemed more or less in agreement about development, especially the importance of the Southeast Growth Area as a flagship for new urbanist development. Some council members, however, noted that the focus on SEGA diverted attention and funds from important issues in their own districts. In Wheatland, the council has a strong desire to attract diverse local jobs.

Role of Neighborhood Associations

Perhaps the most organized groups are neighborhood associations, which have distinct advantages and disadvantages with respect to sustainability. In Citrus Heights, the first mayor purposely organized neighborhood associations through city policy. Such associations often support sustainability within their neighborhoods; they want a clean and healthy environment, good schools, and job opportunities. But these same neighborhood associations often exhibit Not-In-My-Backyard (NIMBY) reactions to decisions with regional benefits but perceived local costs. The most frequent example cited in the case studies was neighborhood

resistance to high-density infill development.

Overcoming NIMBY dynamics is a major challenge to many types of sustainability policies. Case study participants recommended that public education campaigns should communicate the regional benefits of individual projects to help citizens see a broader picture. Another strategy is to require development projects to have a strong community involvement program, where developers themselves ask for input from local neighborhoods and adjust their project design to reflect local concerns.

Role of Developers

Some respondents identified two types of developers: large-scale developers seeking project opportunities throughout the region, and smaller-scale developers working mostly on small pieces of land within community boundaries. Each type may have advantages and disadvantages with respect to sustainability. The large-scale developers will often get a greater return from single-family homes on city borders, but they also have the resources needed to create more innovative green developments and buildings. Smaller-scale developers will be more likely to implement infill projects with a smaller environmental footprint, and more willing to comply with a city's demands for project changes. But smaller developers generally have fewer resources available for being leaders in innovation.

Additionally, respondents noted that the demand for more sustainable development provides a unique market opportunity for the opportunistic and innovative developer. Often, however, this effect is trumped by the fact that established developers, with a substantial amount of control over the marketplace, have a successful business model based on traditional suburban development that has been generating profits for decades, and they are loathe to change it.

Education, Affluence and Citizen Involvement

Our statistical analysis found that sustainability policies are implemented more frequently in affluent, well-educated communities with high levels of professional occupations. Case study participants in cities that scored higher on the sustainability index echoed these findings. Davis was characterized as relatively affluent, educated, and highly participatory. Citrus Heights was characterized as fairly conservative in the sense that its residents dislike change and their participation is motivated largely by resistance to infill. Policy makers in Modesto observed that citizens only became involved in

the planning process after-the-fact, to complain about specific decisions; and in Wheatland, low participation was observed among residents unless issues directly affected their property. Fresno's interim planning director, Keith Berghold, described his job as being partly one of marketing, or convincing various stakeholders that more sustainable developments were, in actuality, in their best interest.

Many cities also mentioned citizen initiatives that place explicit policy constraints on growth. In Davis, Measure J was passed in 1999, requiring voter approval before the city would allow development of agricultural, open space, or horse ranch property at the edge of the urban area. In Modesto, the general plan calls for an urban area growth policy review every two years. As part of this review process, a citizen's advisory vote is required to approve the extension of sewer service to any areas of urban expansion. Reports from officials were mixed, however, as to the impact this advisory process has had over the years. These citizen initiatives reflect the general tendency of neighborhood groups to pay a high level of attention to the costs of new developments,

A Culture of Innovation

An overall acceptance of innovation was frequently mentioned as a catalyst for sustainability policies. The statistical results coupled with the case study information suggest that a culture of innovation is a more important factor than overall political ideology.

The city of Davis has an overall culture of innovation fostered by the presence of UC Davis. Davis has a long history of attention to sustainability principles in general plans dating back to the 1970s, which recognize the need to maintain open space, develop greenways, encourage alternative transportation by creating bike paths, and have relatively high density development. Other cities have only recently started to pay attention to sustainability issues, and must deal with the realities of past policy and development decisions that are difficult to change in the future.

The use of outside planning consultants was said to spur innovation in cities like Wheatland (see Budgets and Planning Resources) and Fresno, which contracted with Calthorpe Associates, a sustainable development authority from Berkeley, to design the Southeast Growth Area, a high-density, multi-use development incorporating new types of open space and walkable communities targeted to absorb at least 20% of Fresno's growth over the next 20 years. Additionally, many innovative policy ideas implemented in the case study cities were learned about outside of that city, for example by city staff attending training or conferences.

CONCLUSION

The Future of Sustainability?

Achieving sustainability in the Central Valley faces significant economic, political, and social barriers linked to the traditional growth conflicts of the past. Appointed and elected officials in the Central Valley have different ideas about the definition of sustainability. Some of them expressed a view that balances environmental, social, and economic priorities for long-term welfare. Others focused more on economic and fiscal health issues that have always been central concerns for cities. In general, officials with the more balanced view of sustainability are also working in cities with higher scores on our quantitative sustainability index. Barriers to sustainability include fiscalization of land use, lack of planning resources, city councils focused on traditional development, lack of coordination among city departments, and NIMBY politics resisting infill. Catalysts for sustainability include sustainability programs within city administration, adequate resources, and a culture of innovation. Our statistical results suggest the barriers are lower and the catalysts more available in the larger urban cities in comparison to the traditional rural or transitioning rural cities. However, implementation of sustainability policies in larger cities is often more difficult due to constraints from a history of poor development decisions, while smaller transitioning cities have greater opportunities to start off on a more sustainable development path.

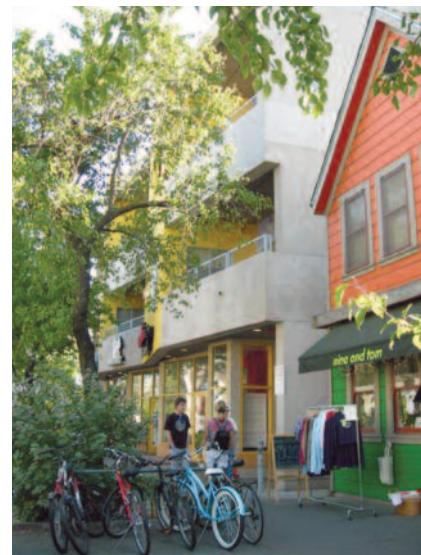
Our analysis suggests some specific recommendations for city and state policy makers:

- Look for ways to break the fiscalization of land use constraints cycle, possibly even revisiting Proposition 13 at the state level. Cities need new sources of revenue that are not tied to new development.
- Allow broad citizen participation in the city planning process, but try to focus those forums on key sustainability issues from the outset. A vision for sustainability—rather than the mechanics of different plan elements—should be the guiding principle of any general plan updates. The vision should encompass environmental, economic, and social issues.
- Create administrative mechanisms within cities to coordinate across departments and analyze the costs and benefits of different options. The strongest mechanism is the creation of a sustainability program with a dedicated budget and staff. The program should evaluate the highest

priority problems for the city and the most cost-effective solutions, fostering communication among city departments and between city officials and citizens.

- Provide professional development opportunities for existing city staff to learn about innovative practices through professional conferences, training, and other networks (including virtual.) Many of the innovative policy ideas implemented in the case study cities were learned about outside of that city.
- State level policies should place high priority on “transitioning cities” that will be making important future decisions. Regional planning processes like Blueprint and decisions associated with AB32 and SB375 will have more leverage in those cities that have enough resources to effectively implement policy, but are not hampered by a history of poor development. At the same time, the large urban cities should not be excluded from the incentives associated with regional planning.
- New development projects should be based on principles of new urbanism or smart growth in ways that are acceptable to local citizens.
- In partnership with developers and neighborhood associations, create educational programs or town hall meetings for local neighborhoods to explain the benefits of infill development for both the city and the region. These programs should be focused around specific new developments and take place in affected neighborhoods (not City Hall), giving citizens a venue to voice their concerns. Development plans should not be approved by City Council or planning officials without responding to these concerns.

■ Many cities expressed a need to have a better understanding of which climate change and sustainability efforts will provide a greater “bang for the buck”; this is one area where more state and university research and outreach efforts should be devoted.



The statistical analysis uses linear regression to identify the factors that best predict a city's score on the environmental sustainability index. In statistical jargon, the sustainability index is the dependent variable to be explained and various economic, social, and political factors are the independent or explanatory variables. The results of the analysis support our claims in the body of the report.

We measured a variety of economic and demographic variables. *City size* is the natural logarithms of city area from the 2000 U.S. Census of Population and Housing and 2004 population estimates produced by the California Department of Finance, standardized so that the logged scores have a mean of zero and standard deviation of one, and then summed together. City size is thus expressed in standard deviation units and measures a city's size relative to the others in our study. *Proportion population growth* is the proportion growth from 1990 to 2004. Housing density is the number of dwelling units per square mile from the 2000 Census of Population and Housing. Fiscal capacity is measured using total local *taxes per capita* and *percent intergovernmental revenue per capita* from the 2002 U.S. Census of Governments and the 2000 Census of Population and Housing.

We also include a range of social indicators. *Intellectual capital* is the proportion of business establishments that were professional and scientific, educational, managerial, and health and social services based on 2002 U.S. Economic Census data aggregated for zip codes. *Development industry* is the propor-

tion of business establishments in construction and development from the same source. *Socioeconomic status* combines percentage of the population with bachelor's degrees or higher, median household income, and median housing value, all from the 2000 Census of Population and Housing. The scale is created by first standardizing each raw score to have a mean of zero and standard deviation of one, and then summing together the standardized scores. *Percent Democratic voters* in the 2004 presidential election using data from the California Secretary of State (2004) is a proxy for environmental attitudes; Democrats are generally more supportive of environmental policies.

Table A.1 reports the analysis results. The "full" model includes all of the independent variables, while the other three models examine different categories of indicators. The "Adjusted R²" ranges from zero to one, and shows the percentage of variance explained in the sustainability index; it is a measure of model fit. The regression coefficients indicate the direction and size of the influence of a particular independent variable on a dependent variable, where a positive value means that as the independent variable increases, the sustainability index will also increase and negative coefficients predict a decrease in the sustainability index. Larger coefficients generally mean a larger effect, although the scale on which the independent variable is measured must be considered. The traditional threshold for statistical significance is a "p-value" less than .05; these can be seen in the parentheses of the table.

Table A.1: Regression Models for the Sustainability Index

	Full Model	Economic Development Model	Fiscal Capacity Model	Interest Group Model
Development Indicators				
City Size	2.66 (.70; <.01)	3.45 (.47; <.01)	—	—
Housing Density (per mile ²)	.003 (.001; <.01)	.004 (.001; <.01)	—	—
Proportion Population Growth 1990-2004	-.10 (1.14; .93)	1.14 (1.14; .32)	—	—
Fiscal Indicators				
Taxes Per Capita	7.02 (2.53; .01)	—	9.69 (2.62; <.01)	—
Percent Intergovernmental Revenue Per Capita	.004 (.04; .92)	—	-.09 (.05; .06)	—
Social Indicators				
Intellectual Capital	.09 (.11; .41)	—	—	.18 (.09; .05)
Development Industry	.20 (.08; .01)	—	—	.46 (.09; <.01)
Socioeconomic Status	-.12 (.68; .86)	—	—	1.23 (.64; .06)
% Democratic Voters 2004	.05 (.04; .17)	—	—	.09 (.04; .02)
Model Fit Statistics				
Constant	4.55 (3.62; .23)	13.45 (1.32; <.01)	16.46 (2.03; <.01)	1.71 (3.52; .63)
Adjusted R ²	.56	.46	.26	.40

Notes: Cell entries for regression results are unstandardized partial slope coefficients with standard errors in parentheses, followed by p-values (<.01 means "less than 1 percent") for test of hypothesis that the coefficient equals zero. Five cities not included in models due to missing data on some independent variables.

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Achieving Sustainability in California's Central Valley

INTRODUCTION

This report analyzes the barriers and catalysts to sustainable growth and development in Central Valley cities at a crucial time of rapid population growth in that region. Sustainability has been described as “the current object of planning’s fascination” (Campbell 1996), yet the term’s exact meaning remains vague. This report aims to clarify the concept of sustainability as applied to cities in California’s Central Valley and identify some of the major factors influencing a city’s ability to achieve sustainability goals. The Central Valley is at a critical juncture: the 2009 population of about seven million people is expected to grow to 12 million people by 2040, according to California Department of Finance estimates. “By developed world standards, such growth is phenomenal,” outstripping any other region in California, the United States, and even Mexico (Johnson and Hayes 2004; p.7). It’s timely to assess the capacity of Central Valley cities to manage the economic, social, and environmental problems associated with this rapid population growth in a sustainable manner. The issues discussed in this report will take on added urgency as California’s response to climate change—including state laws like SB375 and AB32—encourage local governments to take action to reduce emissions.

What, exactly, is meant by sustainability?

Most definitions focus on balancing economic, social, and environmental priorities for long-term community welfare. Sustainability also includes thinking about what we want our communities to look like in the next century or more. This report includes perceptions of the meaning of sustainability by key elected and appointed officials in selected Central Valley cities who are grappling with the realities of rapid population growth in their region. Synthesizing these various opinions, we conclude that sustainability is an evolution of existing local policies and growth management conflicts, and achieving sustainability involves three central challenges: competition among environmental, economic, and social priorities; symbolic policy; and whether or not sustainability is really “needed” by all cities.

The report uses two methodologies to analyze sustainability in the Central Valley. First, we develop an “environmental sustainability” index that measures the presence or absence of 50 different sustainability policies in 100 Central Valley cities. The map in Figure 1 (page 7) previews the results, and later we will describe how this index was developed. Second, because the quantitative index does not provide much detail about any particular

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city, we conducted case studies in seven cities—Fresno, Modesto, Davis, Wheatland, Lincoln, Sacramento, and Citrus Heights. Reflecting the diversity of the Central Valley, these cities were selected because:

- they range from high to low on the sustainability index,
- they're located in both the Sacramento and San Joaquin valleys,
- they range in population size from some of the smallest to the largest cities in the region,
- they represent different types of cities identified in the cluster analysis, which categorizes cities as traditional rural, transitioning rural, Sacramento suburban growth, and established urban centers.

The case studies consist of interviews with key city officials about the definition of sustainability, the policies in place in the city, and the factors that influence the city's ability to pursue sustainability goals. While the sustainability index focuses mostly on the environmental aspect of sustainability, the case studies are designed to elicit more information about social and economic goals. The results of the analysis offer a more critical view of sustainability than others who view it as a transformative concept that will change the future of planning and urban development. Instead, our analysis shows that sustainability policies are embroiled in many of the same conflicts that are traditionally seen in the politics of urban growth.

While most definitions of sustainability encompass environmental health, social equality, and economic opportunity (Brown et al. 1987; Campbell 1996; Schaller, 1993), it is difficult to simultaneously achieve or measure all of these

goals. For example, although the sustainability index includes policies thought to contribute to the “triple bottom-line” (Rogers and Ryan 2001) of economic, environment, and social welfare, it focuses mainly on the environmental aspect of sustainability. The sustainability index is not a comprehensive audit that examines all the possible trade-offs among environmental, social, and economic goals (see Jepson 2004 for a more comprehensive measure.) These trade-offs, either perceived or real, are frequently an important barrier that policy-makers have to overcome in order to implement sustainability policies. For example, many case study participants described the economic imperatives of a city as barriers to potentially costly environmental policies.

Sustainability policies may often be symbolic and risk a large disjunction between policy decisions and actual ecological, economic, and social outcomes, which are at least partly influenced by macro-level and long-term variables (such as economic downturns and stimulus packages) that are beyond the control of city policy. In addition, cities often make development decisions that limit the ability of future sustainability policies to make a difference. For example, Sacramento receives one of the highest scores on our index, but is also the highest flood-risk city in the United States due to previous development decisions and reliance on century-old levees. On the other hand, Sacramento has signaled the intent to become more sustainable in the recent update of its general plan, which identifies policies for achieving 200-year flood risk protection. While consistent with Sacramento's score on the sustainability index, translating the intent into real outcomes is far from a foregone conclusion. Fresno,

INTRODUCTION *continued...*

meanwhile, received the highest score on the index but has a reputation for sprawling housing, poor air quality, and high levels of poverty. In recent years, Fresno has targeted sustainability policy aggressively in the city's general plan and other arenas. The fact that these policies have yet to come to full fruition, if indeed they ever will, underscores the notion that there is often an important gap between policy and outcomes "on the ground."

To what extent do different types of cities really "need" sustainability policies? Our analysis finds that large, more populous cities are far more likely to have sustainability policies than their small, rural neighbors. One reason is that more urban cities need to find policy solutions to the negative consequences of development. But should smaller cities be expected to have policies that address mostly urban problems like brownfield redevelopment? Perhaps a better question to ask is whether or not a particular city is on a sustainable development pathway that will avoid some of the current problems experienced by larger cities that ignored sustainability issues early in their growth process. Thinking about sustainability as a developmental process invokes important questions such the ability to measure development pathways, the rights of less-developed cities to engage in economic activities that might have negative regional consequences, the potential for less-developed cities to "leap frog" toward sustainability by learning from their neighbors, and the role of regional, state and national government policies in shaping local decisions.

The next section discusses the development of the environmental policy sustainability

index and some of our statistical results; many of the technical details are in Appendix A (page 29). Following this, we present a synopsis of the meaning of sustainability as reported by case study participants, along with some of the policies they think are most important. Then we discuss the economic, political, and social factors that will either decrease or increase the ability of a city to foster sustainability. We conclude with predictions for the future of sustainability in the Central Valley, including whether or not regional and state policies in California can help move cities onto a sustainable development path. Information provided by interview respondents will be provided throughout the discussion, and we also include "sustainable city profiles" that summarize the stories of the case study cities.

The Environmental Policy Sustainability Index

The basic idea behind the sustainability index is to identify a relevant set of environmental sustainability policies, and then count how many of those policies exist in any given Central Valley city. The policies were adapted to the Central Valley from Portney (2003) and Bowman (2005); the full listing of the policies is provided in Table 1. As mentioned in the introduction, the list of policies is focused mostly on the environmental aspect of sustainabil-

ity although many of the policies are hypothesized to provide social and economic benefits or achieve environmental goals in a cost-effective manner. We used the Great Valley Center's (2005) definition of the Central Valley, which includes the 100 incorporated cities in the counties of Butte, Colusa, El Dorado, Fresno, Glenn, Kern, Kings, Madera, Merced, Placer, Sacramento, San Joaquin, Shasta, Stanislaus, Sutter, Tehama, Tulare, Yolo and Yuba.

Table 1. List of Policies Included in the Index

Land Use (8)

- Comprehensive Land Use Plan Includes/Identifies Environmental Sensitive Areas
- Habitat Conservation Planning under ESA
- Encourages Conservation Easements
- Williamson Act Lands in Jurisdiction
- Williamson Act Support
- Minimum Density Standards
- Eco-Village Project or Program
- Growth Phasing

Zoning (6)

- Green Zoning
- Agricultural Zoning
- Up-Zoning
- Inclusive Use Zoning
- Mixed Use Zoning
- Urban Growth Boundary

Transportation (6)

- Traffic Impact Analysis
- Public Transit System
- Downtown Parking Limits
- Carpool Program
- Alternative Fuel Fleet Vehicles
- Bicycle Ridership Program

Economic Development/Redevelopment (9)

- Eco-Industrial Park Development
- Cluster or Targeted Economic Development
- Infill Financial Incentives
- Impact Fees
- Mandatory Dedications
- Negotiated Exactions
- Public Redevelopment Investment
- Redevelopment Authority
- Brownfield Redevelopment

Pollution Prevention and Mitigation (10)

- Air Pollution Mitigation Program
- Superfund Site Remediation
- Asbestos Abatement Program
- Household Solid Waste Recycling
- Household Hazardous Waste Recycling
- Household Green Waste Recycling
- Commercial Solid Waste Recycling
- Commercial Hazardous Waste Recycling
- Industrial Recycling
- City Government Recycled Product Purchase

Resource Conservation (5)

- Commercial Green Building Program
- Energy Conservation Programs
- Renewable Energy Use by City Government
- Consumer Alternative Energy
- Water Conservation Program

Administration and Coordination (2)

- Sustainability Agency/Non-Profit
- Sustainability Goals in Comprehensive Plan

Green Symbols and Membership (4)

- Green Symbol Logos
- Member, International Council for Local Environmental Initiatives
- Member, Cities for Climate Protection Campaign
- Signatory, Mayors' Climate Protection

Figure 1.
Legend for Central California Cities

Symbol shade indicates index score

○ lowest

● highest

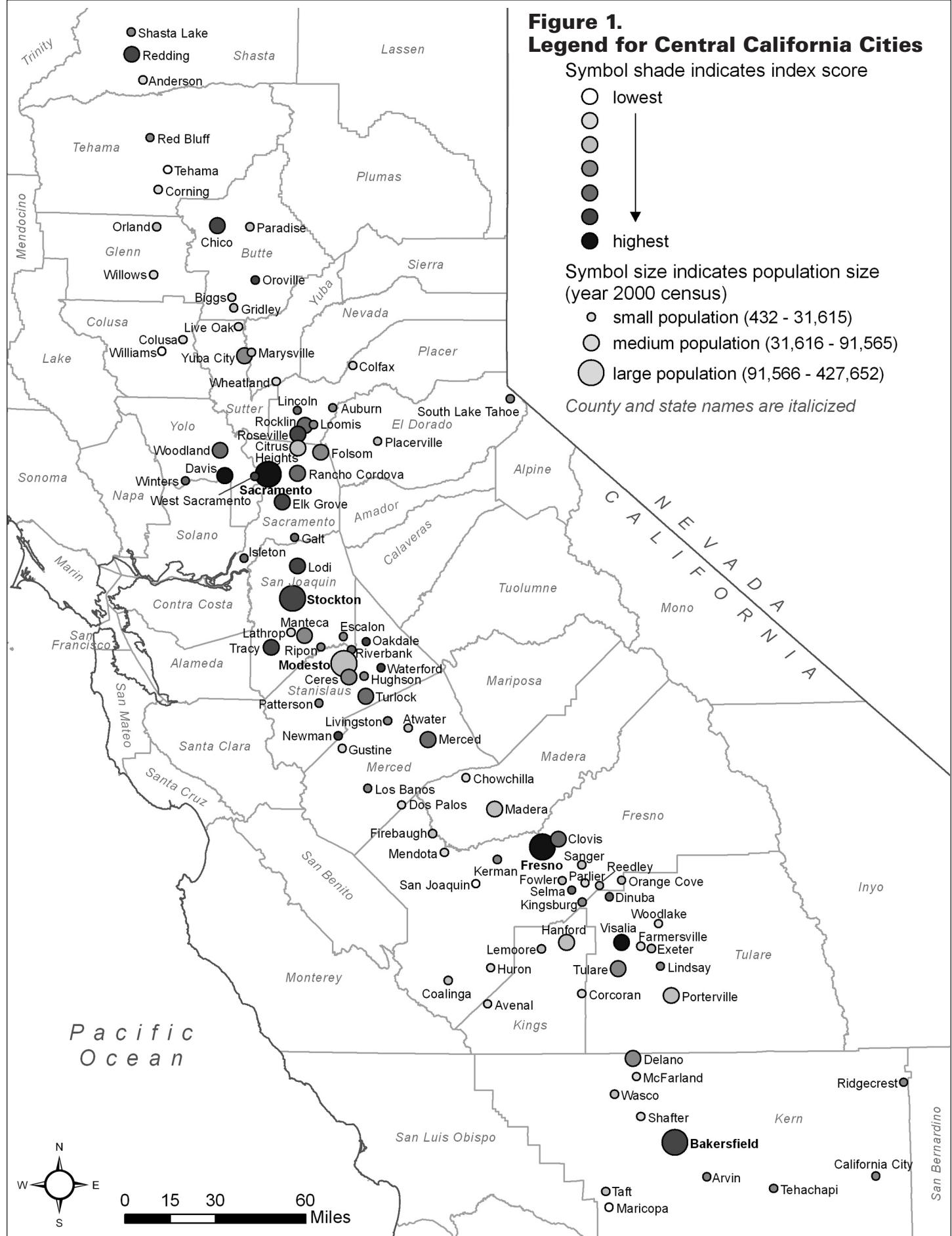
Symbol size indicates population size
(year 2000 census)

○ small population (432 - 31,615)

○ medium population (31,616 - 91,565)

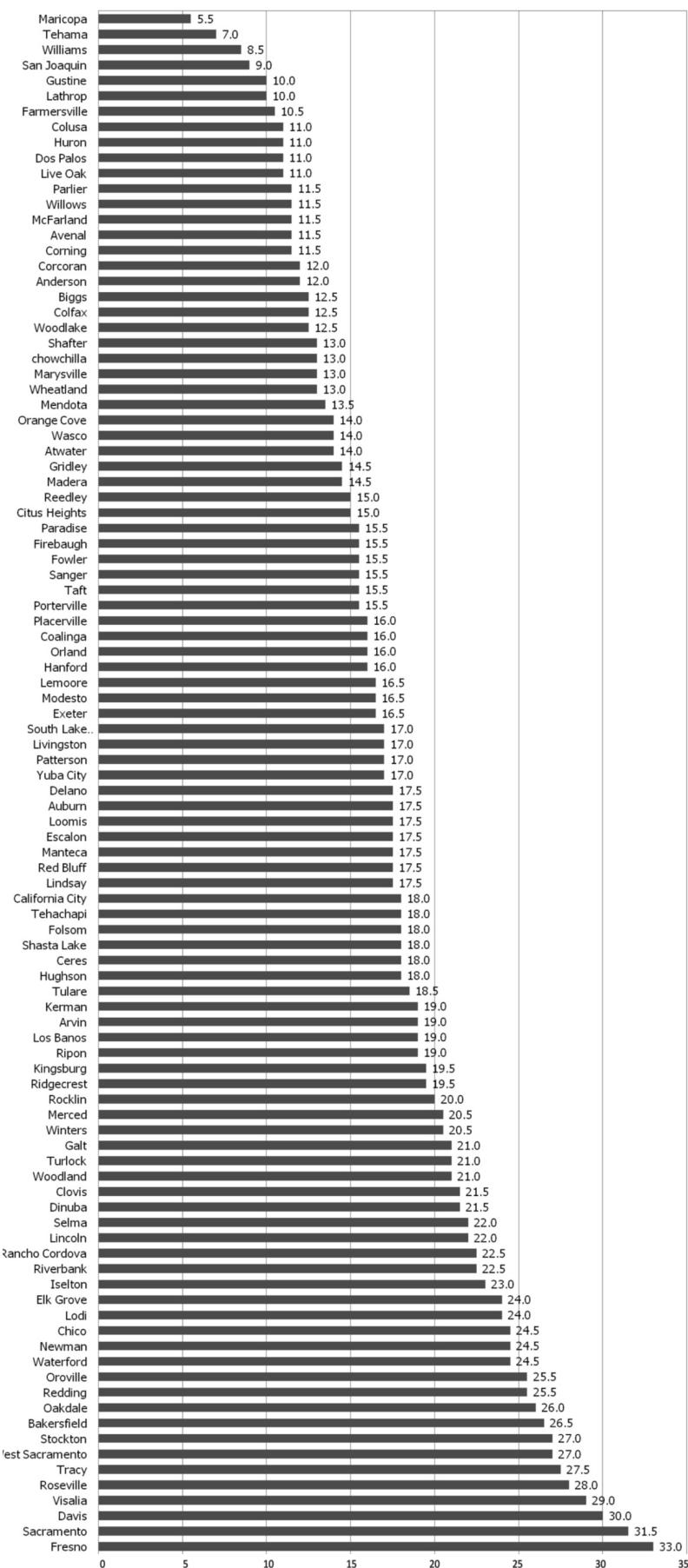
○ large population (91,566 - 427,652)

County and state names are italicized



ENVIRONMENTAL POLICY SUSTAINABILITY INDEX

Figure 2. City Scores on Sustainability Index



Two modes of data collection were used to identify the policies in each city: searches of archival information (i.e. general plans, city ordinances, websites), and surveys of local planning officials. The archival information was used to determine if a particular policy existed or did not exist in the city; the survey respondents were asked about each policy's existence. If the survey information and archival search agreed, then the city was scored as having a 1=exist or 0=not exist for that particular policy. When the two sources disagreed, the city received a score=.5 for that policy. Finally, the resulting index scores were aggregated within each city to produce an overall score with a possible range from 0-50; the observed scores ranged from 5-33 with an average of 17.

Figure 1 (page 5) shows a map of the sustainability index, and Figure 2 (left) displays the scores for every individual city in the study. Statistical analyses (see Appendix A) showed that geographically larger, more populous, and higher density cities were more likely to have high index scores. The sustainability index was also higher in cities with better tax bases, and lower in cities that relied heavily on inter-governmental revenues. In terms of social characteristics, the index was higher in cities with professional and managerial workforces (so-called "intellectual capital"), higher income/education, and a well-established development industry. Figure 3 (next page) shows a graph of the relationship between a scale combining geographic size/population and the score on the index; the labeled cities are cities that score fairly high on the index.

Table 2 (next page) presents the results of a cluster analysis, which is a statistical procedure that groups cities in terms of their similarity on the range of factors included in our dataset, including the score on the sustainability index. The cluster analysis identifies four different groups of cities in the Central Valley, which we have labeled traditional rural, transitioning rural, Sacramento suburban growth, and established urban centers. The Sacramento regional growth cities score relatively high on the sustainability index and have many factors predicted to encourage sustainability

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Figure 3. Scatterplot of Sustainability Index and City Size Scale

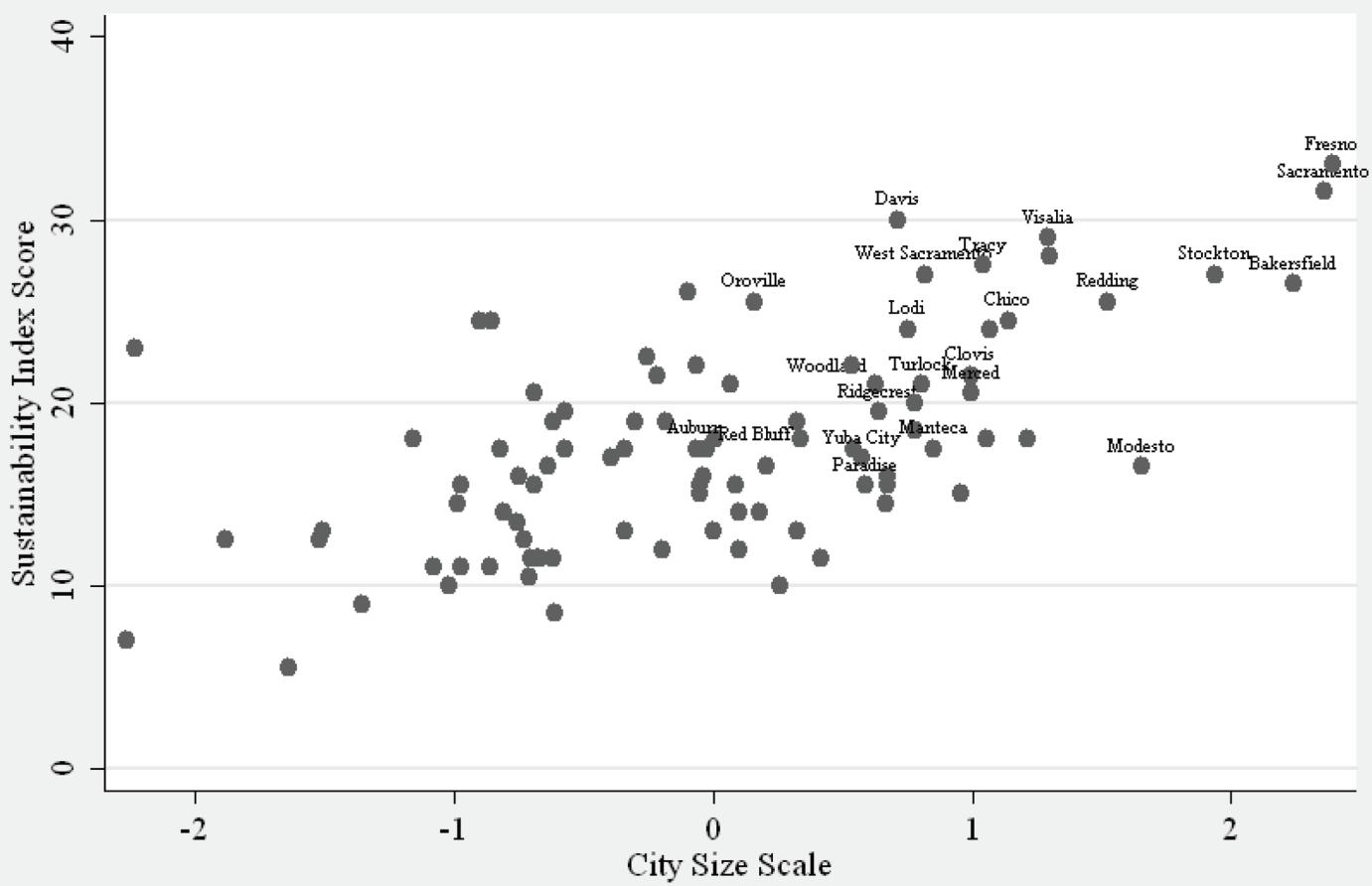


Table 2: Cluster Analysis Average Scores

	Traditional Rural (N=11)	Transitioning Rural (N=55)	Sacramento Suburban Growth (N=5)	Established Urban Centers (N=23)
Sustainability Index Score	11.95	15.94	21.80	23.30
Development Indicators				
Population 2004	7,402	15,147	51,323	113,945
Geographic Area Miles ²	1.86	9.20	19.01	32.43
Housing Density (per mile ²)	878.46	908.74	810.06	1159.50
Proportion Population Growth (2002-2004)	.40	.54	1.53	.37
Fiscal Indicators				
Taxes Per Capita (\$)	.13	.32	.30	.47
Percent Intergovernmental Revenue Per Capita (%)	45.25	25.05	13.46	20.67
Interest Group Indicators				
Intellectual Capital (%)	13.70	17.93	24.99	27.767
Development Industry (%)	8.97	15.41	20.47	13.94
Median Income (\$)	26,346	35,475.85	57,175.6	38,133.52
Median Housing Value (\$)	77,545.45	101,514.5	179,880.0	128,069.6
Percent College Degree (%)	3.42	9.70	26.03	20.36
Percent Democratic Voters 2004 (%)	57.06	40.43	36.08	43.54
Representative Cities				
Most Populous City (Name, Population)	Arvin (14,499)	Madera (48,366)	Roseville (96,922)	Sacramento (440,976)
Least Populous City (Name, Population)	Tehama (435)	Isleton (832)	Galt (22,151)	Auburn (12,634)

SUSTAINABLE CITY PROFILE

Citrus Heights

Background

Carved from existing development in Sacramento County, Citrus Heights was incorporated in 1997. Due to the history of county development, Citrus Heights is 95% built out and city officials expect only a small amount of future growth based on infill projects. Citrus Heights is an important suburb of Sacramento, with a high ratio of rental residents and many people who work in Sacramento.

Views on Sustainability

Citrus Heights officials emphasize the fiscal and operational aspects of local sustainability. Assistant City Manager Hillary Straus suggests that sustainability is a case of “follow the money” that must recognize linkages between land use, revenues, and fiscal health. “The issue of sustainability is a community...that has a wide range of housing, necessary shopping availability, and jobs in that location where you can work, live, and educate all within your community” according to Community Development Director Janet Ruggerio. Another city official describes sustainability as “balancing everything so that long-term, things will not be bad for our kids and their kids. It’s not just what is best for the economy or just the environment; you have to balance the two...and recognize the environmental consequences of all our decisions.” However, city officials recognize that Citrus Heights is only “three-quarters of the way there.” On the economic side, they would like to have more jobs and on the environmental side they have “not spent a lot of time or really [had] the need to address big picture sustainability in terms of development patterns, issues, and practices.”

Policies for Sustainability

The general planning process in Citrus Heights encouraged strong public participation through mechanisms like a community visioning exercise and a citizen advisory committee. Public participation

focused on the key policy issues of community development, resource conservation, and community health, rather than trying to tackle every required element of the general plan in detail. The general plan emphasizes revitalization of the main commercial corridors, with commercial activity focused at the intersection of major thoroughfares and mixed-use strips (rather than a traditionally defined downtown). The principles of the general plan are implemented in specific development projects like Stock Ranch, which incorporates mixed-use retail and housing, sets aside land for new job growth, and provides open space and riparian corridors. To achieve long-term financial health, the City has implemented a 25-year cash-flow model to predict future revenues and costs.

Citrus Heights has done some “little things” for resource conservation, such as limits on parking, expedited permitting for solar energy upgrades, and participation in the Sacramento region’s “Green Partnership” to help cities adapt to state climate change policies. The city also has a “Green Team” to encourage environmentally friendly practices in city operations, such as buying hybrid cars and products with recyclable post consumer waste.

Barriers and Catalysts for Sustainability

Citrus Heights officials note three main barriers to sustainability: the connection between fiscal health and land use, resistance of neighborhood associations to infill development, and lack of large tracts of open space. “Land use and land use policies are inextricably linked to fiscal issues,” according to Straus. “If you look at our budget and funding sources—sales tax, property tax, vehicle license fees and so forth—a lot of those are tied to population...it creates a dynamic where cities are forced to grow.” These fiscal constraints are exacerbated by the tendency of state

and county authorities to divert local government funding. Neighborhood associations fear infill developments will lead to increased traffic, crime from occupants of low-income housing, and loss of existing open space. The built-out character of Citrus Heights and lack of large open space on the borders reduce the need to address large-scale sustainability issues. Citrus Heights is also not a “full-service” city, and thus does not directly decide whether or not contracted service providers and special districts implement sustainability practices.

The fiscal health of Citrus Heights is good relative to other Central Valley cities. Despite reduced property taxes resulting from a “revenue neutral” agreement with Sacramento County, the city is still operating with a net budget surplus and approximately one year of reserve revenue. Straus attributes this situation to an efficient city organization, long-term financial planning, and a city council that recognizes the importance of fiscal issues. “I’ve never had a budget issue regarding staffing or even special monies to do specific plans or general plans,” said Ruggerio in reference to resource constraints, but resources may become more strained when the general plan is updated to comply with state climate change policies.

In addition to the Green Team, other organizational mechanisms exist to encourage inter-departmental coordination. Bi-monthly development review meetings include all city departments, service contractors, and sometimes developers to insure awareness and coordination of upcoming projects. There are annual strategic planning retreats with the city council, citizen commissions, and administrative staff. Staff members are assigned tasks from multiple departments to increase connections and “cross-pollinate” ideas. ■

such as extremely high growth, low reliance on intergovernmental revenue, and a well-educated and wealthier population. The high growth rates of these cities are driven by their location on the highway corridors (e.g; Interstate 5) surrounding the largest urban center in the Central Valley. At the same time, these Sacramento suburbs are some of the most politically conservative constituencies in the region, surrounding the Democratic island of Sacramento with a sea of Republicans. It appears the growth pressures and resources available in these cities encourage planners to implement sustainable policies despite a political culture that generally resists government interventions. Planning staff may act as policy entrepreneurs in these cities by using professional expertise in sustainability to address emerging growth issues.

The transitioning rural cities are the largest category with medium scores on the sustainability index; most of these cities are slowly transitioning away from the agricultural economy of the Central Valley. Population growth in these cities is accompanied by increasing education and wealth, which are important resources for implementing sustainable policies. The transitioning cities generally have many opportunities for creating sustainable growth patterns because they still have space to expand. In contrast, many of the established urban centers such as Sacramento and Fresno have already filled much of their available space and made development decisions that will constrain future choices. While the established urban centers have the highest score on the sustainability index, they probably also face the highest risk of symbolic policy. The traditional rural cities score the lowest on the index and have small populations, poor fiscal health, and low educational levels. These cities were largely supported by the traditional agricultural economy of the Central Valley, and may be in danger of being left behind as population growth focuses on cities that are better positioned to integrate agriculture with other economic activities. Achieving sustainability in these cities will probably require substantial investment from outside actors such as state government or non-profit groups. While these cities may not need sustainability policies now, they will very likely need them if they continue to grow. Sustainability policies are likely to be more effective early in the developmental pathway of a city if they are able to prevent poor decisions that are costly to reverse.

Overall, sustainability appears to be a largely urban phenomenon, occurring in Central Valley

cities where the process of development is correlated with increasing education, professionalism, tax revenue, and less dependence on intergovernmental revenues. Some of these cities are large urban centers that are grappling with the consequences of past rapid growth, while other cities are currently experiencing rapid growth and are sometimes adopting sustainability policies earlier than their larger neighbors. The remainder of this report discusses the important aspects of sustainability that emerged from our case studies.

Perspectives on the Meaning of Sustainability

The concept of sustainability rests on three key assumptions: the triple bottom-line (economic, environmental, and social welfare); long-term perspective; and cooperation among diverse interests. To what extent do sustainability efforts really meet these challenges? To answer this question, we asked our interview respondents to define how they viewed sustainability in the context of their cities. This turned out to be one of the most important questions in our study, because there were a wide variety of answers.

The biggest difference among cities was the extent to which they emphasized one aspect of sustainability versus a more balanced approach. Officials in cities like Davis, Sacramento and Fresno, which scored high on our index, tended to offer a more balanced view that appreciated the importance of economic and environmental goals and trade-offs. Tom Pace, Sacramento's long-range planning manager, referred to the new urbanist concept of "smart growth" — minimizing the impacts of sprawl, promoting infill development, and creating walkable communities. Sacramento's energy manager and greenhouse gas coordinator, Keith Roberts, stressed the need to combat global climate change by reducing greenhouse gas emissions and incorporating alternative sources of energy. The interim planning director in Fresno, Keith Bergthold, stressed the synergy inherent to the triple bottom-line, and claimed there is nothing economically competitive about single-family, low-density housing.

Other cities placed more emphasis on the economic and fiscal aspects of sustainability, which have always been central issues for planning growth and development. Cities are faced with the

PERSPECTIVES ON THE MEANING OF SUSTAINABILITY *continued...*

economic realities of finding revenue sources to meet the increasing costs of service provision, ensuring adequate infrastructure to support population growth, and making sure enough services are in place for new development projects. "Cities are in a competitive business," says Tim Raney, former mayor of Citrus Heights and currently community development director for the city of Wheatland, adding, "cities that understand that do well and cities that don't understand that, don't do well." Enita Elphick, Wheatland's mayor, campaigned on her background as a small-business owner. In her opinion, cities are just like any other businesses, with one exception: "their product is service to their residents." The mayor of Modesto, Jim Ridenour, also stressed the importance of his prior experience in business for understanding how to run a city. An economic challenge for city management is developing new employment opportunities within the city itself, especially in bedroom communities around urban centers like Sacramento. These cities seek to become more economically independent through local job diversity. Strategies for achieving economic growth are influenced by the existing structure of the city. Modesto, for example, is concerned about developing a vibrant and viable downtown. But Citrus Heights is focusing economic development on large thoroughfares because there is no identifiable downtown space.

Importantly, the social justice aspect of sustainability was the least emphasized by all respondents. Strategies for low-income housing, diversity in employment opportunities, and environmental justice were mentioned by some interviewees only in passing. One reason for this is that our study was framed from the outset to focus on the idea of environmental sustainability. However, our case study interview questions asked about trade-offs among social, economic, and environmental goals, so interviewees had the opportunity to speak about social equity issues. While a study that highlights social equity issues would surely elicit more information, we think it is telling that social equity was a lower priority than economic and environmental goals. A notable exception was Fresno, where some officials noted that poverty and low levels of education are a substantial barrier to economic development and sustainability.

City officials were more in agreement on having a long-term perspective, although the application of long-term thinking was usually framed in terms of which aspect of sustainability was most emphasized. For example, Davis Mayor Ruth Asmundson

described sustainability as trying to envision the appearance of the city in 50 years, flying at 50,000 feet. Carol Shearly, Sacramento's director of planning, points to her experience at the California Indian Museum & Cultural Center by defining sustainability as simply, "planning for seven generations." In Citrus Heights, where respondents emphasized the fiscal aspects of sustainability, planning for the long term entailed development of a budget model that predicted distribution of city revenues on a 10 to 25-year time horizon. Brad Hawn, a councilmember in Modesto, stated that a countywide land use plan extending 50-75 years was probably required to preserve agricultural land in the area.

The long-term perspective applies to the history of a city as well as future planning. Davis has a long history of attention to sustainability principles in general plans dating back to the 1970s, which recognize the need to maintain open space, develop greenways, encourage alternative transportation by creating bike paths, and have relatively high-density development. Other cities have only recently started to pay attention to sustainability issues, and must deal with the realities of past policy and development decisions that are difficult to change in the future. For example, policy makers in Modesto noted that the city had only recently completed necessary infrastructural upgrades to developments from the early and mid 90s. When the city of Citrus Heights was incorporated in 1997, it inherited Sacramento County development patterns that emphasized commercial corridors and large-lot, single-family housing. Furthermore, Citrus Heights is surrounded by other suburban development and does not have much space to expand. The combination of the character of existing development and lack of open space constrains policy choices in Citrus Heights.

The third assumption is the ability of sustainability to bridge conflicting interests within a city. This aspect of sustainability appeared more frequently in the case study cities that scored high on the index. In Davis, there was the idea that economic and environmental issues could have mutually beneficial interactions. For example, Davis officials have an explicit economic development strategy to promote green industry and attract quality employees with a livable community. Preservation of agricultural land might be considered one example in which economic and environmental interests are aligned. This is true to the degree that agricultural policies are indeed environmentally sustainable, as well as economically

PERSPECTIVES ON THE MEANING OF SUSTAINABILITY *continued...*

sound. Economic and environmental interests, however, are often seen as conflicting. In Modesto, for example, some policy makers claimed that environmental regulations can inordinately increase the cost of living, and thus serve as a strong disincentive to individuals considering moving to the area.

Many of these conflicts over sustainability are played out in the context of specific development proposals or planning decisions. In Davis, important recent projects include the large housing development of Covell Village (rejected by citizen vote in 2006), the upgrade of the sewage treatment plant, and the development of surface water connections to the Sacramento River. Many slow-growth advocates in Davis feel the development of new water infrastructure is a prelude to higher growth rates, but others argue that it will help improve the quality of Davis water and reduce the pollution impacts of salinity. The conflict in Citrus Heights swirled around small infill projects as well as the nature of retail development in commercial corridors. In Fresno, the flagship development for sustainable practices is the Southeast Growth Area (SEGA), designed along new urbanist principles. Officials in Fresno noted the resistance to such a project on the part of citizens and developers. Citizens are resistant because they want to live in sprawling, single story, large-lot, suburban homes with 4-car garages as opposed to high-density, mixed-use, walkable, urban communities like SEGA. Some developers are resistant to any apparent change in the status quo which threatens their established and successful business model focused on large-lot, single-family home suburban development. At least one official in Fresno also mentioned that enterprising, green developers can use the change in values regarding urban design as an opportunity to make a profit by providing a novel product.

In Modesto, debates currently center around whether or not agricultural mitigation is required of new development within the city's sphere of influence. In all of these development projects, decision makers were concerned with both how much the city would be growing, and the character of the new development. These same concerns were apparent in planning decisions, such as updates to the housing elements of general plans.

In working with Placer County on the preservation of vernal pool complexes as part of its Habitat Conservation Plan, the City of Lincoln has come to loggerheads over the fate of roughly 3,400 vernal pools. Mayor Santini noted that it is particularly frustrating that out of the 220,000 acres under

study, development of only about 4% of the territory is contested, but after a year and a half, he says, "we might be farther away than when we started." Mayor Santini is skeptical that developing the habitat, home to the endangered fairy shrimp (*Anostraca spp.*), would present a threat to the species as a whole, and the city is currently entangled in a dispute involving the Army Corps of Engineers, National Marine Fisheries, EPA, California Fish and Game, U.S. Fish and Wildlife, as well as environmental groups such as the Sierra Club and the Audubon Society.

Graham Brownstein, executive director of the Environmental Council of Sacramento (ECOS), cites a recent example of developer Angelo Tsakopoulos proposing to extend the urban growth/urban service boundary to include several thousand acres he owns in eastern Sacramento County. Opinions of the proposal—both in the community and on the board—were mixed; some pointed to neighboring El Dorado County's encroachment on the other side of the county line as requiring a response. As Brownstein describes the event, ECOS was able to pack the meeting with 350 residents from Sacramento County who opposed the proposition because it followed the sprawl growth model. As a result, the board of supervisors, which had been expected to approve the proposal on a 3-2 vote, ended up unanimously denying the proposed expansion.

Many observers recommend adopting the principles of new urbanism or smart growth—minimizing the impacts of sprawl, promoting infill development, and creating walkable communities—as a way to reconcile environmental and economic priorities in the context of specific development proposals and site design. Mayor Santini described Lincoln's approach to growth as new urbanism, where new growth is organized into seven semi-autonomous villages, each of them roughly the size of the historic core of Lincoln itself, between 800-2000 acres. In addition, Lincoln is a participant in a pilot electric vehicle program, and is building neighborhood electric vehicle paths. "We're going to try to organize our growth so that you don't have to get in your car or go very far to accomplish what you need to," Santini said. He added that new urbanism means going back to the way cities were laid out 100 years ago, before the mass introduction of the automobile.

Several other case study cities provided examples of new urbanism development projects that were either proposed or underway. In recent years, numerous mixed-use infill developments have been

SUSTAINABLE CITY PROFILE

Davis

Background

Davis, incorporated in 1917, is located 11 miles west of Sacramento at the junction of Interstate 80 and State Highway 113. With a population of 64,938, Davis is home to a University of California campus. The University serves a prominent role in the local economy as the primary employer and source of Davis' highly educated citizenry. City officials expect Davis to grow slowly in the near future, with few large open spaces remaining in city boundaries and a history of growth controls.

Views on Sustainability

Davis officials offered a sophisticated view on sustainability that encompassed environmental health, economic growth, and social justice. "We start off with the three legs of the stool," according to sustainability director Mitch Sears, "the economic, environmental, and social piece[s], and trying to find an appropriate balance of those three pieces." Other officials echoed the importance of balance. Greg Clumpner, chair of the citizen planning commission, argued, "whether or not you fully embrace the global warming issue...there is a real case for doing things that are more conservation-oriented for energy and materials; ways that are less wasteful but make a lot of economic and environmental sense." City Manager Bill Emlen said sustainability means "putting back no more than you take; you are trying to get [to] equilibrium where we are neutral in terms of our impact to the planet." Mayor Ruth Asmundson emphasizes the importance of long-term planning, defining sustainability as, "looking at what do you want Davis to look like in 50 years when you are flying at 50,000 feet."

Policies for Sustainability

According to Bill Emlen, Davis is growing sustainably, "compared to most communities...but we still have our own

output of carbon emissions that we still need to work on." City officials highlighted Davis' long history of commitment to sustainability principles, going back to the environmental movement of the 1970s and embodied in the general plans that have consistently emphasized higher densities, reluctance to expand city boundaries, and alternative transportation such as bicycles. These general plans have created a "culture of development" that stresses integration of land use and transportation planning. More recent policies include Measure J, a citizens' initiative that requires a popular vote to approve any new developments outside city boundaries such as the recently rejected Covell Village project. The city council has also recently adopted a 1% growth cap. Several administrative changes have been made, including the creation of climate change council and a sustainability coordinator position. The city has retrofitted many of its fleet vehicles, and is taking steps towards requiring more energy efficient features in development projects.

Barriers and Catalysts for Sustainability

Davis officials consistently noted the high levels of public participation, a culture of innovation engendered by the university, and a sense of civic pride in Davis' unique characteristics. Mitch Sears says that Davis is, "not a risk-averse community; it feels comfortable in being an early [adopter] and take[s] some pride in that. A lot of that has to do with the campus being here; people are used to looking at and exploring new ideas." The relative affluence of the community, "gives people more time to concern themselves with issues beyond putting food on the table." The city budget is also balanced at this time, with a reasonable reserve. There is a strong coalition of no-growth advocates with representation on the city council, who serve as watchdogs for more aggressive development proposals. However,

there are critics of the no-growth advocates who view them as barriers to necessary progress and change in the community.

Despite these factors, Davis faces economic development problems similar to other cities. While the Davis city budget is currently balanced, there is an on-going search for new sources of revenue to meet increasing service costs. Given the limits on local property taxes, Davis has increased its sales tax base through the introduction of larger retail developments like Target, and by increasing local option sales tax through citizen initiative. Funding limitations have created some uncertainty about the future of the sustainability coordinator position, and make costly policies more difficult to implement. "There will be a real strong acceptance of things that don't require a personal sacrifice, but a reluctance of taking on things that require more personal action," says Mitch Sears. Resource availability will become even more of an issue as Davis is required to respond to state mandates (AB32 and SB375) for updating general plans to address climate change.

Davis is also facing two major infrastructure challenges: upgrading a sewage treatment plant that is currently violating some water quality standards; and, obtaining surface water rights in the Sacramento River to supplement the current groundwater supply. Other challenges include neighborhood associations that generally resist infill and high density developments, making it difficult for Davis as a whole to encourage central city development. ■

built in downtown Davis. All of these have been on a small scale, involving one building with several businesses on the street level and apartments upstairs. The buildings have been integrated into the existing streetscape. For example, the Roe Building at 435 G Street, is a mixed-use building on .276 acres housing 5,000 square feet of retail on the first floor and eight townhouses on the second and third floors. The new urbanism principle of high-density and mixed-use development may be more acceptable to citizens in urban communities like Sacramento, where density has been a part of life for many years. In more rural or suburban cities like Lincoln or Citrus Heights, high density development is viewed by some as a threat to the small-town or neighborhood atmosphere that some people prefer as an alternative to living in a large metropolitan area. Like sustainability, there may be a gap between the principles of new urbanism as stated in a development plan and the actual environmental, social, and economic effects of these developments. For these reasons, some neighborhood groups will resist a new urbanist development in the same way they would resist other types of unwanted land uses in their backyards.

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Important Policies for Achieving Sustainability

Although our index identified 50 potential policies for achieving sustainability, we asked case study participants to identify those policies most effective for their particular cities. We think it is important to distinguish between the list of policies suggested by scholars, versus the types of policies that real decision-makers think the most about, and have the largest influence on their decisions.

First, nearly all cities pointed to the contents of their general plans as places where sustainability issues are addressed. General plans are “part intent, part feasible future” (Innes 1996) and thus reflect a city’s preferences for development patterns. Davis has a history of general plans that pay attention to integration of land use and transportation, identification of infill opportunities, especially in the housing element, and planning for higher density development to reduce boundary expansion. According to Davis officials, these goals of the

general plan have been translated into an overall “culture of development” that shapes the project permitting and approval process. Officials in Fresno noted that the general plan update in 2002 focused development inward and upward, rather than outward. Officials in Modesto mentioned that the general plan calls for an urban area growth policy review every two years. They also noted, however, that a needed general plan update had been shelved for another year due to fiscal constraints. Sacramento updated its general plan in 2008, with specific integration of sustainability practices and a long-term planning horizon to 2030. The concept of sustainability is established in the Sacramento General Plan as the fourth goal, after (1) affordable housing, (2) economic development, and (3) safe neighborhoods. Tom Pace, Sacramento’s long-range planning manager, points to the land use and urban design elements of Sacramento’s general plan, which focuses on two major components: mixed-use classifications focused more on urban form than land use, and an increasing emphasis on redevelopment of existing urban area (brownfield development, or infill), as opposed to expansionary development (greenfield development). Lincoln, following Placer County’s 50-year Habitat Conservation Plan, recently took the unusual step of writing a 2050 General Plan for the city, with the goal of guiding the community all the way to “build out.”

The process by which general plans are developed has an important influence on how well their content addresses city goals. More recently created general plans or updates have relied on expanded forms of public participation, such as the crafting of vision statements and citizen advisory committees. The recent update of the housing element of Davis’ city plan relied on a citizen steering committee and a range of community workshops. Tom Pace, Sacramento’s long-term planner, says plans are only as good as the level of political support. The recent Sacramento General Plan went through three rounds of public meetings in 2005, 2006 and 2007, as well as a public opinion survey. This type of public participation is considered an aspect of good planning in general, and is not necessarily unique to sustainability.

However, the level of public participation in such processes varies across cities, and some cities in the Central Valley have lower levels of overall participation. Officials in Modesto were particularly frustrated at the lack of citizen involvement in

IMPORTANT POLICIES FOR ACHIEVING SUSTAINABILITY *continued...*

general plan workshops and other forums. Officials complained that citizens rarely got involved unless it was too late, or unless the matter directly affected them. It is often much harder to get people involved in a rather abstract, long-range planning process than in a very near-term, specific project in which they can see a direct impact on their property or neighborhood. The Wheatland Community Vision project of 2008 outlined a three-pronged approach: attracting a diverse employment base; channeling development into a modular, village-type concept; and maintaining the small-town character by incorporating agriculture into the urban environment. The city also has interest in alternative sources of energy such as clean-burning agricultural waste cogeneration, solar, wind, and hydroelectric power. The goal is to be able to tell future developers what the community should look like, as opposed to ad-hoc development projects proposing “their” vision for “their” portion of the community. The vision covers, in broad terms, environmental resources, community development and design, economic development, mobility, education, infrastructure, public safety, green spaces/recreation. It was developed through a series of meetings with the public, the entire city council and planning commission. Public participation has been encouraged, though Stephen Wright, Wheatland’s city manager, noted that public participation is often confined to issues that deal directly with the properties of residents.

Second, cities that score high on the sustainability index are also more likely to have administrative mechanisms in place to forward sustainability goals. These administrative mechanisms often have a more direct influence on policy implementation than the goals and priorities of a general plan, which risk becoming paper tigers. Davis has a sustainability program manager who coordinates multiple departments, and is charged with analyzing what policy options will give the “most bang for the buck” in terms of sustainability goals like reducing greenhouse gasses. Davis also has recently created a Climate Action Team as an ad-hoc citizens’ committee to advise the city on climate policy. To implement the Davis City Council-mandated 1% growth cap and the SACOG regional housing allocation, the Davis steering committee created a “green light, yellow light, red light” system of prioritizing new development proposals. Citrus Heights has a “Green Team” that facilitates the use

of green practices like recycled paper and energy efficient lighting throughout operations. Fresno has “Fresno Green,” a comprehensive set of 25 strategies with the stated objective of making Fresno “a sustainable city by 2025.” Although Wheatland’s community planners foresee several social sustainability programs, many of these programs and land use decisions are still several years, and possibly decades, away.

Third, many cities also mentioned citizen initiatives that place explicit policy constraints on growth. In Davis, Measure J was passed in 1999, requiring voter approval before the City would allow development of agricultural, open space, or horse ranch property at the edge of the urban area. In Modesto, the general plan calls for an urban area growth policy review every two years. As part of this review process, a citizen’s advisory vote is required to approve the extension of sewer service to any areas of urban expansion. Reports from officials were mixed, however, as to the impact this advisory process has had over the years. Recently, voters in Stanislaus county passed Measure E, a 30-year land use restriction initiative that requires a majority approval of any redesignation of agricultural or open space to residential land in unincorporated areas of the county. These citizen initiatives reflect the general tendency of neighborhood groups to pay a high level of attention to the costs of new developments.

Fourth, regionalization is an important topic for many cities, although not directly reflected in our index. Regionalization involves important cooperation problems because one city’s adoption of sustainability policies may reduce its economic competitiveness relative to other cities in the region. From another perspective, there are often economic benefits from cooperating to provide joint services at the regional scale. Cities are contracting with each other or with counties to provide these types of regional services. Other regional strategies include participating in integrated land use and transportation planning processes like the Sacramento Blueprint, which was frequently mentioned as a stimulus for growth management. Wheatland’s Mayor Elphick is also a proponent of revenue sharing between Wheatland and Yuba county for future development. After all, she says, counties are the ones who have to pay for the roads regional customers use to get to big box stores

inside city limits. Lincoln Mayor Santini agrees that tax-sharing agreements are critical to preventing counties from attempting urbanized growth in unincorporated county land, which was commonly mentioned by policy-makers in smaller Central Valley cities as a major problem, both doing harm to the city's tax base, and creating poorly planned, ad-hoc communities that usually neglected quality of life and sustainability concerns for their residents. Santini specifically highlights the use of county water districts to pursue urbanized growth, but without the planning resources or the accountable, unified government structure of a city. Brad Hawn, a city councilmember in Modesto, is a strong proponent of regionalization and is currently working on increasing efficiency of service provision in Stanislaus County. Hawn argues that inconsistencies among county and city regulations create development situations that need to be rectified as cities grow and inherit county developments. These situations could be alleviated through a regionalization of water and sewer services, as well as potentially even planning departments and master plans. Such an arrangement would allow cities to function within their respective spheres of influence, but within the terms laid out by the county plan. Jim Ridenour, mayor of Modesto, agrees that a regionalization of services would make services more cost-effective and efficient for citizens.

In reality, however, officials admit that bringing cities together to agree on the details of such a regionalization can be prohibitively difficult. In Fresno, City Councilmember Brian Calhoun argued strongly in favor of regionalization, going so far as to say that the current system of city regulations nested within a separate set of regulations at the county level is outdated, or even dysfunctional. Calhoun has brought his suggestions to the council a number of times over the last eight years, but has been rejected each time either by the city council or county board of supervisors. Calhoun recommends the formation of a citizens commission to examine efficiencies among the city, county, and other communities in the county. He argues that a merger of services and even of the governments would inevitably allow policy makers to effectively address issues that don't respect municipal boundaries, things like air and water pollution, as well as the provision of health, fire, and police services.

Economic Factors

Nearly every case study participant mentioned the fiscalization of land use as a major barrier to the implementation of sustainability policies. Cities are driven by financial incentives regarding balancing revenue and expenditures. City revenues such as property taxes, sales taxes, service fees, and impact fees are tied to land use intensification and population growth. This so-called "fiscalization of land use" (Lewis 2001) creates a financial disincentive for cities to restrict growth or encourage the high-density development that is often encouraged by smart growth or sustainability advocates. These financial issues are particularly acute in California because of Proposition 13, passed in 1978, which places a cap on property taxes such that the amount paid cannot exceed 1% of the assessed value of the property (including commercial) and the overall amount can only increase 2% every year. When a property is sold, the reassessed value may be taxed at a higher rate, but still no more than 1% of the new value. The constraints imposed by Proposition 13 reduced an important source of city revenue, and spurred a search for alternative revenue sources like sales tax from big box retail and impact fees on new development. As demand for services and costs continue to rise, many cities view growth as the only way to maintain fiscal stainability. The previously mentioned desire for revenue-sharing between cities and counties is also driven by the fiscal imperatives of city administration.

Graham Brownstein, executive director of the Sacramento environmental group ECOS, points to the model that large developers have used in the Sacramento region for several decades: buy cheap farmland on the edge of developed areas, lobby local elected officials to annex and up-zone the land, and then the value of the land goes up and the developer does a massive development. These developments are typically car dependent, large-lot, single-family home projects. "If you look at what this model has done to city and county revenues," Brownstein says, "it has created a reality where municipalities are addicted to suburban sprawl community development fees to fund basic services. In the case of the city of Sacramento, close to 50% of all community development fees come from development in Natomas. So the city is addicted to approving more and more sprawl growth." ECOS is not opposed to growth per se, and praises developers like Sotiris Kolokotronis and LJ Urban for pursu-

SUSTAINABLE CITY PROFILE

Fresno

Background

Incorporated in 1885, Fresno is located in the center of the San Joaquin Valley along Highway 99, roughly 200 miles from both Sacramento and Los Angeles. With a population of about 486,000 in 2008, Fresno is the sixth-largest city in California, and the largest inland city in the state. Fresno's population is expected to roughly double in the next 40-60 years. The population is socio-economically and culturally diverse, with a large Hispanic population, and sizable Asian and African-American minority communities. According to the U.S. Census Bureau, about one-fifth of the population lives below the poverty line and the unemployment rate in 2007 was 8 percent.

Views on Sustainability

Some city officials in Fresno expressed a nuanced understanding of sustainability that incorporated a balance between economic, environmental, and social factors. Interim director of Planning and Development, Keith Bergthold, claimed, "the key to creating sustainability is to link competitive advantage in the environment and competitive advantage in healthy neighborhoods into competitive advantage in the overall regional economy." He said this idea of balance is not strictly rhetorical, but, "in reality, a necessary program of action." Councilmember Cynthia Sterling focused on the social aspect of sustainability, stressing the need to find improved opportunities for the poor, uneducated, and homeless members of the populace, particularly common in her own constituency. Councilmember awareness of environmental and social issues reflect both the socio-economic diversity that exists in the city of Fresno as well as current problems with air and water quality. One official identified the tension between pursuing sustainability mainly through regulation, or through market incentives. All city

officials agreed that Fresno, despite already being a relatively large city, is at a developmental crossroads between the suburban sprawl exemplified by LA and a new model of development incorporating high-density living and other smart growth principles. Officials also agreed that protecting agricultural land, improving air and water quality, providing educational opportunities, and reducing poverty were important and usually complementary goals.

Policies for Sustainability

Fresno's sustainability policies are centered on two main initiatives. The first is a comprehensive program called "Fresno Green," an action-oriented plan intended to transform Fresno into a sustainable city. The plan combines both public and private sector initiatives and identifies 25 strategies and accompanying implementation tactics in 5 key areas including urban design, clean air, renewable energy, green enterprise and economic development, and greening of city facilities and practices. The plan was developed in 2007, and was a logical extension of the 2025 General Plan, updated in 2002, that focused development upward and inward, rather than outward.

The second major initiative in the area of sustainability in Fresno is the Southeast Growth Area (SEGA). This 14-square mile area was targeted in the 2025 General Plan as a major new growth community to absorb at least 20% of Fresno's growth over the next 20 years, and was added to the city's sphere of influence in 2006. SEGA represents a wholesale departure from the standard model of low-density, single-family development of years past. The focus is on high-density, multi-use development incorporating new types of open space and walkable communities. The objective is to model these new principles of urban design in a specific area of new growth. Successful ideas will then

be transferred to key centers and corridors in older areas of Fresno, and subsequently to all areas of the city when feasible.

Other projects include the Regional Jobs Initiative, a 10-year plan to end homelessness, and a reauthorization of a countywide sales tax that funds transportation improvements, including funding for alternative transportation. While not currently an adopted policy, Councilmember Brian Calhoun identified regionalization of services and government at the county level an important factor potentially enabling more efficient and sustainable policy.

Barriers and Catalysts for Sustainability

City officials identified poverty and low levels of education as barriers to achieving sustainability in Fresno. Additionally, Bergthold highlighted the 'mental model' that many Central Valley residents have regarding the desired lifestyle in the Valley: low density, single-family dwellings, and car-oriented transportation. Many developers that have built successful business models along these lines are resistant to change. Finally, city officials viewed county and state decisions as often hampering their own ability to steer a sustainable course.

Many officials in Fresno felt that changing conditions, both locally and globally, are demanding more sustainable policies. As such, necessity is an important catalyst of sustainability. Additionally, while previous master plans had been developed in-house, the planning division contracted out the design of SEGA to Calthorpe Associates, a high-powered, renowned authority in sustainable development from Berkeley. The statewide, regional Blueprint process has also played a role in bringing sustainability-related issues to the table at the city level.



ECONOMIC FACTORS *continued...*

ing a different model of development that is focused on infill projects and redevelopment of commercial corridors and other pre-existing, but underutilized, developments within communities. A key role for environmental groups, Brownstein argued, will be to strongly advocate such infill development proposals to city councils and county boards while continuing to oppose sprawl.

The majority of planners and policy stakeholders emphasized the necessity of continued growth in their cities. Though most responded negatively to zero-growth policies, they emphasized that there were ‘right’ and ‘wrong’ ways to respond to pressure from developers, and that, properly channeled, development could successfully meet the goals of the triple bottom-line of economic, social and environmental sustainability. The major themes discussed by stakeholders included: (1) the status of large retailers as revenue engines for the city, in the form of sales taxes, (2) a renewed appreciation for long-term, holistic planning of communities, (3) the use of new urbanist concepts such as high-density and mixed-use development, minimizing impacts of sprawl, promoting infill development, and creating walkable communities, and (4) the attempt to direct growth into infill projects, so-called brownfield development, instead of greenfield development. However, Tim Raney, community development director for Wheatland, said greenfield development is necessary, pointing out that certain segments of the population simply want to live in a brand new, large-lot home.

Graham Brownstein, head of Sacramento environmental group ECOS, says, “Anyone who tells you that you can just stop growing is either fooling themselves or doesn’t understand the way communities function.” As Brownstein describes it, a large developer “doesn’t wake up in the morning wondering how he can destroy the environment—that’s not what’s on his mind.” Large developers “of the world wake up thinking about perfectly normal stuff: like how to make more money and build more value for a development business...but we, as a region and a society, have set up a bunch of rules that essentially say to developers: ‘You can make a lot more money buying up cheap farmland and lobbying to up-zone it than you can doing smart growth infill.’” Brownstein continues, “These are dumb out-of-date rules. If we establish better rules that make it more difficult and more expensive to do sprawl growth and easier and cheaper to do infill, it’s not as if de-

velopers will disappear. They’ll just switch to doing more sustainable development.”

Mayor Santini of Lincoln argued that fiscalizing land use decisions is a necessary component of good planning. The link between revenue and growth often conflicts with the environmental goals of sustainability. For example, large-scale retail development often increases traffic and vehicle-miles traveled within a city, with an affiliated increase in emissions. When asked about the potential for reconciling the principles of new urbanism with the large, big box-style regional shopping centers, Mayor Santini agreed that the two were essentially at odds with one other, but said the latter has to be accommodated in urban design if only because such large retailers provide services citizens want, and are willing to drive to neighboring cities to get. Large-lot, single-family developments usually provide higher revenue to service-cost ratios than high-density or lower-income housing developments, although there is some debate about the longer term fiscal consequences. New construction is needed if development impact fees are to be acquired as new sources of revenue. However, anticipating future growth to fund existing city services leaves open the possibility of unexpected shortfalls during hard economic times. As a result, Rod Campbell, Lincoln’s community development director, notes that the city may be approaching a “sales tax black hole,” necessitating the vigorous pursuit of new businesses in Lincoln to prevent sales tax leaks into neighboring communities.

In contrast, other participants questioned the wisdom of relying on commercial development to fund city services. Although she frames the concept of sustainability in terms of economics, Wheatland’s Mayor Elphick is skeptical of the common view of big box retailers as satisfactory revenue engines for a city’s growth. Sales tax revenue from large retailers, she argues, should be seen as an added bonus. But if you create budgets or processes that rely on that sales tax revenue, during economically depressed periods you’ll either have to run deficits or cut programs, “and everyone’s going to be screaming.” In her mind, owner-operator stores are a backbone of a community and steps have to be taken to ensure they aren’t pushed out by chain stores. The big box stores have their place in a community, Elphick says, but communities should not become dependent on them for financing. She says that cities dependent on major

ECONOMIC FACTORS *continued...*

revenue engines like big box and auto malls didn't do their job right to start off. Instead, she argues, the proper sources of funding should be in impact fees on developers and assessment fees on property owners, so that homeowners themselves pay the amount their house impacts the community. In nearby Yuba city, Elphick feels that for the last 20 years the city has not been thinking what is best for the community in the long term in its relationships with developers. This is most evident in impact fees, which are substantially less than necessary to pay for the additional costs the development will incur on the community. In addition, she says, cities have engaged in the practice of phasing in impact fees over a three-year period, leaving the city short on revenue.

The fiscal health of the city also translates into planning resources, in particular whether or not staff time is devoted to sustainability issues and the resources available for implementing new policies. Some cities like Davis and Citrus Heights have balanced budgets and revenue reserves for meeting new costs. When asked about whether or not resources are adequate, the planning manager in Citrus Heights answered, "In my years that I've been here, I would say without a doubt. For the most part, we've been able to do what we've needed to do." Vic Freeman, a retired real estate agent and planning commissioner in Lincoln, says the city has enough planning resources, and the real problem is the lack of projects to work on. Davis created a Sustainability Program Manager position in 2008, which is a position split with the open space planner. Other cities like Sacramento have large deficits, and therefore a limited ability to take on new staff positions or projects. Sacramento planning officials describe the city budget as "terrible," with each department instructed to reduce expenses 20% in 2008, and another 20% reduction expected for 2009. Fresno and Modesto have worked hard to maintain balanced budgets in recent years, but Modesto is reportedly facing a deficit of \$10 million in FY 09/10. Additionally, the city recently shelved its needed general plan update because it lacked funds to hire a senior planner to lead the project. Fiscal health in Fresno is presumably related to the city's ability to hire a consultant planner for the design of the 14-square-mile Southeast Growth Area (SEGA), although this wasn't explicitly mentioned by any city officials. These fiscal constraints will likely have a big impact

on the ability of a city to respond to new state laws such as AB32 and SB375, which encourage cities to change their general plans to meet climate change goals.

Some of the smaller cities have very limited planning departments, and most often contract with consultants for the creation of general plans. The degree to which these consultants integrate sustainability principles into their services is thus an important consideration. Tim Raney, former mayor of Citrus Heights and current owner of Raney Planning and Management, contracts with the city of Wheatland as their community development director, and has advocated innovative policies for a city of Wheatland's size, including water reclamation and clean-burning agricultural waste cogeneration as an alternative energy source. He is cited by Wheatland's city manager as a primary source of information for the small community.

But even in fiscally healthy communities like Davis, future sustainability initiatives, especially in connection to climate change, are likely to strain future resources. Davis' sustainability manager said, "If we're looking at the climate science, accepting the results of the modeling, doing our share of what needs to be done to mitigate, and also prepare for adaption, the need far, far outstrips the resources. We're talking about fundamentally reorganizing and rethinking how our communities are organized." In reference to all the potential options for addressing climate change that come from citizen commissions and other sources, he said, "I could fully employ probably 5-10 people who are pretty savvy when it comes to doing life-cycle cost analysis to analyze all the different actions that are flying my way...I could use as many people as I could get a hold of to help answer those questions." The Davis city manager echoed these sentiments, "We obviously have some constraints. We've plugged in some funds for some of the sustainability efforts, but if the budgets continue to tighten over the next few years, if we want to continue what we're doing, we're going to have to re-prioritize some of our other spending." As a result, many cities expressed a need to have a better understanding of what climate change and sustainability efforts will provide a greater "bang for the buck"; this is one area where more state and university research and outreach efforts should be devoted.

Political Factors

The case study participants identified two key political factors influencing the level of sustainability practices. First, the preferences of the city council have a strong influence on the number of sustainability practices, the resources devoted towards implementation, the types of developments approved, and the overall rate of growth in the city. In Davis, there is a conflict between “slow growth” and “moderate growth” city council members, with the majority of the council currently in favor of a one-percent growth cap. Interestingly, the Davis city council seems more united in terms of the importance of climate change, but will be more in conflict when it comes to approving specific development proposals such as Covell Village or Target. In March, 2009, developer Lewis Operating Corp. withdrew an application to build 610 residential units and 20 acres of business park on the site of the former Hunt-Wesson tomato cannery, the last large (100-acre) parcel in the Davis city limits. Known as Cannery Business Park, the proposed development had been in the works for five years and featured sustainable principles like mixed-use and planned to achieve the US Green Building Council’s Leadership in Environmental Design (LEED) for Neighborhood Development certification. The property had been zoned industrial since 1952 and the city council was reluctant to change the property’s zoning. The city recently moved to require the developer “to pay for a study of a full business park in the EIR, increasing the cost,” according to an article in *The Davis Enterprise*, which Mayor Don Saylor called, “...the last straw.” Not surprisingly, the developer’s decision to pull the plug was greeted with mixed reactions by council members, and shows how growth politics can affect even innovative new urbanism development projects.

In Citrus Heights, the council is concerned with redevelopment of commercial corridors; as one respondent put it, “Now the council is made up of individuals who are...pro-good growth. They are supportive of growth but really concerned about neighborhood issues.” In Modesto, differences in vision seemingly drive debates among city council members regarding growth management and development. Some city council members feel strongly that a change in housing style or growth is inconsistent with the lifestyle expectations of Central Valley residents, while others feel equally strongly that a new type of development is needed. These disagreements are embodied in debates swirling over

agricultural mitigation, urban growth boundaries, and whether or not to adopt growth-management policies recommended by the Regional Blueprint process. In Fresno, members of the council that were interviewed seemed more or less in agreement about development, especially the importance of the Southeast Growth Area (SEGA) as a flagship for new urbanist development. This 14-square-mile area was targeted in the 2025 General Plan to absorb 20% of Fresno’s growth over the next 20 years. Some council members, however, noted that the focus on SEGA diverted attention and funds from important issues in their own districts. Other council members additionally stressed the importance of educational and poverty-reduction initiatives, pointing out that the more environmentally-minded sustainable policies were ultimately untenable without also addressing social issues.

Stephen Wright, city manager for Wheatland, points to the council’s strong desire to avoid becoming a bedroom community for Sacramento by pursuing active strategies to attract diverse local jobs, and laying out a long-term land use plan in their 2008 Community Vision. Rod Campbell, community development director of Lincoln, also credits past city councils with initiating several important policies, including joining Placer County’s Habitat Conservation Plan and requiring that 40% of land in new developments be designated as open space (parks, floodways, natural land, and golf courses.) Jay Pendergraph, city councilman for Wheatland, is open to the incorporation of “green” technologies, but only on a voluntary basis. “We live in America.” He is emphatic, “America’s about freedom, and choices, so when you become a ‘green’ society – and I don’t have anything against green societies – but you are telling people you can’t live here unless you are green. Is that is what America’s all about?”

The second key political factor influencing the level of sustainability practices was development of formal and informal mechanisms to facilitate coordination and build networks among city departments, and also between the city council, city administration, and citizen commissions. One of the central roles of the sustainability manager in Davis and the Green Team in Citrus Heights is to coordinate and communicate across city departments to focus on common sustainability goals. Citrus Heights conducts bi-monthly development review meetings that include all city departments, service contractors, and sometimes developers to insure awareness and coordination of upcoming projects. There are annual strategic planning retreats with

SUSTAINABLE CITY PROFILE

Lincoln

Background

Lincoln is one of six cities in Placer County, and had a population of approximately 40,000 on roughly 19 square miles as of 2007. Like many cities in the Sacramento metropolitan area, Lincoln has experienced tremendous growth in the last decade. Lincoln was named America's fastest growing city from 2000-2006 in Forbes Magazine. Roseville, eight miles to Lincoln's south along State Route 65, is a major retail and commercial hub. While the city was in a building slump in 2008 during the downturn in the housing market, more development is planned.

Views on Sustainability

Lincoln's officials view sustainability primarily in economic terms—providing a level of service to the community in an economically feasible way—although environmental sustainability programs are included as priorities. Mayor Primo Santini believes that fiscalizing land use decisions is a necessary component of good planning in order to generate local revenue. Lincoln's 2005 General Plan declares: "The City's vision for the future is to become a self-sustaining community." However, city officials point out that many sustainability measures serve multiple purposes. For example, building cities around pedestrian and low-speed vehicle travel increases quality of life while simultaneously lowering greenhouse gas emissions.

Policies for Sustainability

To meet Lincoln's central vision of becoming a self-sustaining community, city officials estimate that the population must triple to approximately 120,000 residents, enough to attract large commercial retailers that provide services to the community and provide revenue through sales tax.

This future growth is also envisioned along new urbanism principles, including plans to organize the city into seven villages, each approximately the size of the original town of Lincoln and each with a business and commercial core. However, Mayor Santini distanced himself from certain aspects of new urbanism. While high-density and mixed-use development may be appropriate for communities like Sacramento, Santini believes such development could erode the small town atmosphere of Lincoln that is an attractive alternative to living in a large metropolitan area. The most recent major development, the Del Webb Sun City retirement community, has a density of roughly 4.5 single-family units per developable acre, though Lincoln's new development will have higher density, at 7.5 units per developable acre.

Santini emphasized a bottom-up, rather than top-down approach, which he feels is typical of new urbanism thought. "You have to give people a choice" he emphasizes, so make alternative transportation a viable option, not a requirement. The

city has also enacted a policy wherein 40% of all new development must be set aside for open space (parks, wetlands, or golf courses), and is currently working on a joint Habitat Conservation Plan with Placer County.

Barriers and Catalysts for Sustainability

City officials in Lincoln view the city's size and revenue sources as inadequate to sustain the current level of service. Santini points out that neighboring Roseville's parks and recreation budget alone is nearly twice Lincoln's entire general fund. Rod Campbell, Lincoln's Director of Community Development, points to the relatively pro-outdoors political climate as a motivator of environmental preservation.

Santini expresses frustration at what he feels are unhelpful relationships with organizations such as the EPA and US Fish and Wildlife, whom he says can't recommend any changes until the application process has begun. The city is currently involved in an ongoing dispute with these and other environmental organizations over vernal pools. Santini acknowledges that there is a certain degree of friction between the decentralized village concept and the need to attract large "big box" retailers, but he and other city officials maintain that an effective balance can be negotiated between the two. ■

the city council, commissions, and administrative staff. Sacramento's recent General Plan's development was facilitated by Leadership Workshops that brought together relevant appointed boards and commissions, the city council, department heads, and city manager all in one room, as well as focus groups with environmentalists and developers. The key function of all of the coordinating mechanisms is to build networks, facilitate communication, and increase cooperation among multiple local stakeholders. Stephen Wright, city manager of Wheatland, draws upon his involvement with statewide and national organizations for training and information, including the League of California Cities, and the International City/County Management Association; and Primo Santini credits several of the specific policies regarding infill, and village-centered land planning to his participation with the Local Government Commission, headed by Judy Corbett.

Interestingly, none of the case study participants identified the formal structure of city governance as having a significant influence on sustainability policies. Most cities in the Central Valley are traditional council-manager or "general law" cities as determined by state statutes regarding incorporation, with 5-member councils elected at-large and appointed city managers. There are some charter cities, and some cities have stronger versus weaker forms of mayors. Some participants did mention that charter cities have more flexibility for creating innovative revenue mechanisms. However, our statistical analysis of the sustainability index did not directly address the role of formal governance institutions, and thus the question about whether charter cities or strong mayors are more likely to engage in sustainability policies is still open. Some Fresno city officials claimed their strong mayor form of government is effective because the mayor (elected at-large) serves as a check to council members whose interests are divided between the city at large and their respective constituencies. This is potentially relevant to sustainability because multiple, competing, local interests on a council are less likely to implement sustainable policies that are good for the city at large. Further investigation is needed to understand how the structure of city government influences policy decisions, because the case study participants may not easily recognize how their city's system is different from others in the region.

Social Factors

Political and policy officials make decisions in the context of the culture of their cities. This culture encompasses the social, political, and economic characteristics of the citizens. The majority of our case-study participants had definite opinions about the attributes of the local culture, and argued that a major part of their jobs entailed translating citizen preferences into planning decisions. City council members, for example, are in theory elected to represent the interests of their constituents.

Our statistical analysis found that sustainability policies are more frequent in affluent, well-educated communities with high levels of professional occupations. Case study participants in cities that scored higher on the sustainability index echoed these findings. The community of Davis was characterized as relatively affluent, educated, highly participatory, and with an overall culture of innovation fostered by the presence of UC Davis. Citrus Heights was characterized as fairly "conservative" in the sense that its residents dislike change and their participation was motivated largely by resistance to infill. Citrus Heights has fewer professional occupations than Davis, and increasing the number of professionals working in the city is a goal of officials. Policy makers in Modesto observed that citizens only became involved in the planning process to complain about specific decisions after-the-fact; and in Wheatland, low participation was observed among residents unless issues directly affected their property. Fresno's interim planning director, Keith Bergthold, described his job as being partly one of marketing, or convincing various stakeholders that more sustainable developments were in their best interest. Bergthold posited the "mental model" held by many citizens in the Central Valley—favoring low-density, single family homes and car-oriented transportation—as a major barrier to implementing sustainable policy. Janice Keating, a councilmember in Modesto, argued that the role of policy makers is, however, not to force a particular lifestyle upon constituents, especially when that lifestyle is not necessarily in their own economic interests, nor in accordance with their own conception of quality of life. Meanwhile, Graham Brownstein of ECOS argues that Sacramento County is suffering from a "monoculture" of speculative greenfield development, while planners in Sacramento note that mixed-use infill projects are difficult in large part simply because developers don't know how to do them, bankers don't know how to

SUSTAINABLE CITY PROFILE

Modesto

Background

Founded in 1870, Modesto is the county seat and largest city in Stanislaus County, located along Highway 99 in the San Joaquin Valley, less than 100 miles from both Sacramento and San Francisco. Modesto has a population of about 200,000, and like many other areas in the Central Valley, is projected to double its population in the next 50 or so years. About one-quarter of the population is Hispanic, with relatively small Asian, African-American, and other minority communities. Approximately 15% of Modesto's population lives below the poverty line. In many ways, Modesto is challenged by the growing pains of transitioning from small town to big city.

Views on Sustainability

When asked about sustainability, most city officials in Modesto focused on growth management. Preservation of agricultural land surrounding the city is seen as an important objective of growth management, as is providing basic infrastructure before growth occurs. Environmental aspects of sustainability, such as air and water quality are important, but sometimes viewed as counterproductive from an economic development perspective. For example, councilmember Janice Keating pointed out, "the desire to do no harm is often outweighed by our pocketbook." In Modesto, then, the tradeoff between economic well-being and protecting the environment is viewed as real. Most officials mentioned the healthy and vibrant downtown as an important part of the current progress towards sustainability. Officials disagreed on how best to go about implementing sustainability goals. Some officials asserted that government needed to play a proactive role in the process of shifting the focus of growth upward while other officials maintained that market incentives could most effectively dictate housing developments.

Policies for Sustainability

While discussing growth management in Modesto, several city officials mentioned that the General Plan calls for an urban area growth policy review every two years. As a part of this review process, an advisory election concerning the extension of sewer service to areas of urban expansion is required. Reports from officials were mixed, however, as to the impact this advisory process has had over the years. Councilmember Brad Hawn, for example, cited the process as "just another hoop for developers to jump through." Councilmember Garrad Marsh, on the other hand, felt the results of these elections often indicated a substantial proportion of the populace in Modesto was concerned about the growth process. Recently, councilmember Marsh has campaigned to put a new growth-related measure on the county ballot which would require a mandatory public vote before the county could develop residential lots outside of city boundaries.

The city council is debating the importance of agricultural mitigation, in which some portion of the proceeds from a development are contributed to an easement to preserve farmland elsewhere. Keating claimed that farmland mitigation placed an undue burden on both developers and new homeowners. Proponents, however, cited the importance of the agricultural land surrounding Modesto and indicated a desire to avoid "becoming another L.A." Hawn argued strongly in favor of urban growth boundaries as being potentially even more effective than agricultural mitigation as a tool to encourage new growth on lesser soils while protecting the most valuable agricultural land.

City officials also highlighted the success of a concerted effort to make Modesto's downtown a more vibrant community, citing this as a positive first-step to higher-density developments downtown. Several officials noted that

Modesto has higher population density than most Central Valley cities. While some officials took this to indicate a concern for growth management in Modesto, one official countered that cluster and other high-density developments were relatively unsuccessful in Modesto.

One new but potentially important area of policy development for sustainability is the regionalization of services. Both Mayor Ridenour and Hawn argued this is a critical factor in the success of sustainability efforts.

Barriers and Catalysts for Sustainability

Barriers to sustainability include the lifestyle expectations of many, if not most, valley residents. These expectations are in direct contrast to the ideals espoused by sustainable developments. Keating explained that many residents of the valley move here specifically because they appreciate and expect a suburban lifestyle inconsistent with some sustainable ideals. Another barrier is the lack of involvement in planning processes on the part of the average citizen until a project impacts them directly. For example, a proposed countywide half-cent sales tax increase to fund transportation improvements was recently narrowly defeated (a two-thirds majority was required to pass), indicating a lack of willingness to pay for services potentially related to sustainability. While the Mayor and several council members stressed the efforts made in Modesto to pass a balanced budget or even maintain a surplus, the city reportedly faces a \$10 million shortfall for FY 09/10. Funds for a needed general plan update are currently unavailable, postponing the update for another year. One important catalyst of sustainability is the regional Blueprint process, which provides incentives for cities to pursue regional goals. Additionally, the city recently hired a new city manager from out of state, with experience in "big-city" management. ■

SOCIAL FACTORS *continued...*

finance them, and cities don't know how to properly regulate and permit them.

We found only mixed evidence that political ideology along the liberal-conservative dimension made a significant difference in sustainability policies, although the stereotype of "progressive" community is often one that is more politically liberal. The statistical results do suggest that cities with more Democratic voters are slightly more likely to have sustainability policies. But there are some very glaring exceptions to this trend: the suburbs of Sacramento usually have Republican majorities but score relatively high on the index. The case study respondents only rarely mentioned political ideology as an important factor. When the term "conservative" was mentioned, they were usually referring to a preference for stability and a resistance to change and innovation. On the other hand, an overall acceptance of innovation was frequently mentioned as a catalyst for sustainability policies. The statistical results coupled with the case study information suggest that a culture of innovation is a more important factor than overall political ideology.

The culture of the community often has direct links to the nature of organized interest groups and community activists that become involved in planning decisions; these actors also have obvious links to political factors. Interestingly, much of the interest group activity in local politics is relatively unorganized and rather consists of loose coalitions of citizens or even individual activists promoting their policy preferences. Organized environmental groups were only occasional participants, normally when a broader policy issue—such as endangered species in vernal pools in Lincoln—was at stake. The environmental position was generally represented by loose networks of "slow growth" or "zero-growth" advocates, who sometimes achieved representation on the city council.

At least for our case studies, one exception to the lack of organized environmental groups occurs in Sacramento, where the Environmental Council of Sacramento (ECOS) focuses specifically on local land use issues. Although our study doesn't address why environmental interests are better organized in Sacramento as opposed to other cities, one can speculate that the large urban population of Sacramento coupled with the interest groups involved with California state government provide important resources to local environmental groups. ECOS offers a fairly typical environmental viewpoint on growth and development, which is critical of how economic goals override environmental priorities.

Commercial and development interests were represented by the chamber of commerce and individual developers advocating specific projects; organized development associations, such as the California Association of Homebuilders, were less involved. Some respondents identified two types of developers: large-scale developers seeking project opportunities throughout the region, and smaller-scale developers working mostly on small pieces of land within community boundaries. These two types of developers may have advantages and disadvantages with respect to sustainability. The large-scale developers will often rely on a business model of single-family homes on city borders, but they also have the resources needed to create more innovative green developments and buildings. Smaller-scale developers will be more likely to implement infill projects with a smaller environmental footprint, and also will be more willing to comply with a city's demands for project changes. But smaller developers generally have fewer resources available for becoming leaders in innovation. Additionally, respondents noted that the demand for more sustainable development provides a unique market opportunity for innovative developers. Often, however, this effect is trumped by the fact that established developers, with a substantial amount of control over the marketplace, are loathe to change their model of traditional suburban development that has been generating profits for decades.

Perhaps the most organized groups are neighborhood associations, which also have distinct advantages and disadvantages with respect to sustainability. Neighborhood associations were very well organized in some cities, such as Citrus Heights, where the first mayor purposely organized them through city policy. Neighborhood associations often support sustainability within their neighborhoods; they want a clean and healthy environment, good schools, and job opportunities. But these same neighborhood associations will often exhibit Not-In-My-Backyard (NIMBY) reactions to decisions with regional benefits but perceived local costs. The most frequent example cited in the case studies was neighborhood resistance to high-density infill development, which is usually advocated as an alternative to urban sprawl and also promoted by regional authorities like Councils of Governments. In both Davis (2nd and B Street) and Citrus Heights, infill developments that featured green design principles were rejected due in part to objections from nearby residents. Brownstein of

SOCIAL FACTORS *continued...*

ECOS notes that the best examples of smart growth often end up delayed by neighborhood NIMBY opposition. Vic Freeman highlighted Lincoln's Sun City retirement community's powerful neighborhood association as a guardian of wetlands via fines and public education programs. However, he was critical of the NIMBY politics that defeated construction of a Wal-Mart in Lincoln because he felt consumers would continue to shop at the Wal-Mart and other big box retailers in nearby Roseville. Overcoming NIMBY dynamics is thus a

major challenge to many types of sustainability policies. Case study participants recommended that public education campaigns should communicate the regional benefits of individual projects to help citizens see a broader picture. Another strategy is to require development projects to have a strong community involvement program, where the developers themselves are asking for input from local neighborhoods and adjusting their project design to reflect local concerns.

SUSTAINABLE CITY PROFILE

Sacramento

Background

Sacramento is California's state capital and the seat of Sacramento County. At approximately 470,000 residents, Sacramento is the largest city (by population) in the Central Valley, and the fourth largest city in California. As one of the fastest-growing metropolitan areas in the country, the urban population is expected to reach nearly 700,000 by 2030.

Views on Sustainability

Sacramento planning officials see sustainability primarily in terms of quality of life and environmental footprint. Tom Pace, the city's long-range planning manager, references concepts of new urbanism and smart growth—minimizing the impacts of sprawl, promoting infill development, and creating walkable communities. Keith Roberts, the city energy manager and greenhouse gas coordinator, references the need to combat global climate change by reducing greenhouse gas emissions and incorporating alternative sources of energy. Director of Planning Carol Shearly credits her experience at the California Indian Museum & Cultural Center with her definition of sustainability as, "planning for seven generations."

Policies for Sustainability

The vision that guides Sacramento's 2030 General Plan is: "[We] will be the most livable city in America." Sacramento

is currently pushing forward with a mixed-use infill development program, which includes medium to high-density projects in residential neighborhoods, centers, and corridors. The "Railyards" infill project, which will nearly double the downtown footprint and add 12,000 housing units, is the flagship example of Sacramento's redevelopment efforts.

Barriers and Catalysts for Sustainability

City officials suggest the relatively progressive attitudes of the electorate are a major part of Sacramento's strong commitment to sustainable living. Another major impetus is the limited inventory of developable land. Tom Pace estimates that the city has roughly 20 to 30 years of significant greenfield development left along the city's northwestern, eastern and southeastern borders. As a result, planners are challenged to redevelop neglected urban areas and seek infill opportunities. Likewise, roadway constraints produce a need for more public transportation and alternatives to driving, such as walking and biking.

When asked what they view as obstacles to sustainability planning, officials said the whole system—zoning tools, credit-sources, and especially the tax structure—is geared against mixed-use infill development. Tom Pace says, "Even if there's interest in (mixed-use infill de-

velopment by) the electorate, and infill developers are available and regulations allow it, the financing industry is not used to it, especially mixed-use development." Until developers know how to do it, bankers know how to finance it, and cities know how to properly regulate it, mixed-use infill development is going to be much more challenging than traditional greenfield, single-use, suburban sprawl. Additionally, it is not well understood what effect major infill projects will have on property tax revenues, though it is generally assumed to be not as lucrative as greenfield development. Infill development must overcome many obstacles that greenfield development is not subject to; Keith Roberts mentions that because an infill project directly affects existing neighborhoods it may require 50 community meetings just to get started.

The City is currently experiencing declining revenues. Sacramento's city budget, required by the city charter to remain balanced at all times, is matching decreasing revenues with cuts in major city agencies, including planning. As a result, Carol Shearly explains, the city is requiring many of the proposed changes to be budget-neutral, a major obstacle. ■

CONCLUSION

The Future of Sustainability?

Achieving sustainability in the Central Valley faces significant economic, political, and social barriers linked to the traditional growth conflicts of the past. Appointed and elected officials in the Central Valley have different ideas about the definition of sustainability. Some of them expressed a view that balances environmental, social, and economic priorities for long-term welfare. Others focused more on economic and fiscal health issues that have always been central concerns for cities. In general, officials with the more balanced view of sustainability are also working in cities with higher scores on our quantitative sustainability index. Barriers to sustainability include fiscalization of land use, lack of planning resources, city councils focused on traditional development, lack of coordination among city departments, and NIMBY politics resisting infill. Catalysts for sustainability include sustainability programs within city administration, adequate resources, and a culture of innovation. Our statistical results suggest the barriers are lower and the catalysts more available in the larger urban cities in comparison to the traditional rural or transitioning rural cities. However, implementation of sustainability policies in larger cities is often more difficult due to constraints from a history of poor development decisions, while smaller transitioning cities have greater opportunities to start off on a more sustainable development path.

Our analysis suggests some specific recommendations for city and state policy makers:

- Look for ways to break the fiscalization of land use constraints cycle, including revisiting Proposition 13 at the state level. Cities need new sources of revenue that are not tied to new development.
- Allow broad citizen participation in the city planning process, but try to focus those forums on key sustainability issues from the outset. A vision for sustainability—rather than the mechanics of different plan elements—should be the guiding principle of any general plan updates. The vision should encompass environmental, economic, and social issues.
- Create administrative mechanisms within cities to coordinate across departments and analyze the costs and benefits of different options. The strongest mechanism is the creation of a sustain-

ability program with a dedicated budget and staff. The program should evaluate the highest priority problems for the city and the most cost-effective solutions, fostering communication among city departments and between city officials and citizens.

- Provide professional development opportunities for existing city staff to learn about innovative practices through professional conferences, training, and other networks (including virtual.) Many of the innovative policy ideas implemented in the case study cities were learned about outside of that city.
- State level policies should place high priority on “transitioning cities” that will be making important future decisions. Regional processes like California Regional Blueprint Planning Program (<http://calblueprint.dot.ca.gov/>) and decisions associated with AB32 and SB375 will have more leverage in those cities that have enough resources to effectively implement policy, but are not hampered by a history of poor development. At the same time, the large urban cities should not be excluded from the incentives associated with regional planning.
- New development projects should be based on principles of new urbanism or smart growth in ways that are acceptable to local citizens. The best developments will seek third-party recognition such as Leadership in Energy and Environmental Design (<http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>) for Neighborhood Development certification, which integrates principles of new urbanism at the level of entire neighborhood development and not just single buildings.
- In partnership with developers and neighborhood associations, create educational programs or town hall meetings for local neighborhoods to explain the benefits of infill development for both the city and the region. These programs should be focused around specific new developments and take place in affected neighborhoods (not city hall), giving citizens a venue to voice their concerns. Development plans should not be approved by city council or planning officials without responding to these concerns.
- Many cities expressed a need to have a better understanding of which climate change and sustainability efforts will provide a greater “bang for the buck”; this is one area where more state and university research and outreach efforts should be devoted.

SUSTAINABLE CITY PROFILE

Wheatland

Background

Wheatland is an agricultural community of 3,000 residents located 41 miles north of downtown Sacramento along State Route 65. Incorporated in 1866, the city is one of the smallest in the Sacramento Valley and has only recently experienced significant growth. As the Sacramento region expands, city officials expect Wheatland's population to increase. While most agree population will reach 30,000 over the next several decades, some speculate the population may reach 100,000 by mid-century.

Views on Sustainability

Wheatland's city officials view sustainability primarily in economic and social terms. As the city grows, officials want to prevent Wheatland from simply becoming a bedroom community for Sacramento or other cities to the south. As such, Wheatland is focused on ways to attract a diverse employment base and increase local services, as well as taking a proactive role in a local hospital or college. "Cities are in a competitive business," says Tim Raney, Wheatland's community development director. "The cities that understand that, do well, and cities that don't understand that, don't do well." Mayor Enita Elphick, herself the owner of a lumber company in nearby Yuba City, became active in the community when she felt the city was making planning decisions that were not financially sustainable. Elphick's campaign platform focused on bringing to the city

her skill set as a small business owner.

Policies for Sustainability

Although large suburban development is already underway in Wheatland, officials believe the city is at an early stage of development. City officials focused on the positive aspects of this situation, which offers the unique position described as a "one shot opportunity" to shape growth in the right manner.

Wright and Elphick both point out the importance of providing infrastructure to meet anticipated growth. Elphick justifies the cost incurred by pointing to the greater costs of upgrading inadequate sewer and utilities infrastructure. "I think sometimes you have to take your lumps right now to have sustainability down the road." Steven Wright, Wheatland's city manager, refers to the infrastructure problem more succinctly: "Developer, thou shalt put them in first."

Although Wheatland's community planners foresee several social sustainability programs, many of these programs and land use decisions are still several years and possibly decades away. The Community Vision project of 2008 outlined the City's approach. The three major planks are attracting a diverse employment base; channeling development into a modular, village-type concept; and maintaining the small-town character by incorporating agriculture into the urban environment. The city also has interest in alternative sources of energy such as clean-burning agricultural waste cogen-

eration, solar, wind, and hydroelectric power.

Barriers and Catalysts for Sustainability

One catalyst for sustainability has been the hiring of a professional planning firm, Raney Planning and Management, for plan development. Many smaller Central Valley cities use planning consultants to provide expertise that is not available in the city administration, and these firms often bring in innovative ideas.

City Councilman Jay Pendergraph points to lack of understanding and mistrust as major obstacles. Long-time residents of Wheatland are wary of changes taking place in the community. In his mind, public education and transparency are effective ways to obviate opposition, but above all else, he believes in making new sustainability programs optional. "We live in America," he said emphatically. "America's about freedom, and choices, so when you become a 'green' society - and I don't have anything against green societies - but you are telling people you can't live here unless you are green. Is that is what America's all about?" ■

The statistical analysis uses linear regression to identify the factors that best predict a city's score on the environmental sustainability index. In statistical jargon, the sustainability index is the dependent variable to be explained and various economic, social, and political factors are the independent or explanatory variables. The results of the analysis support our claims in the body of the report.

We measured a variety of economic and demographic variables. *City size* is the natural logarithms of city area from the 2000 U.S. Census of Population and Housing and 2004 population estimates produced by the California Department of Finance, standardized so that the logged scores have a mean of zero and standard deviation of one, and then summed together. City size is thus expressed in standard deviation units and measures a city's size relative to the others in our study. *Proportion population growth* is the proportion growth from 1990 to 2004. Housing density is the number of dwelling units per square mile from the 2000 Census of Population and Housing. Fiscal capacity is measured using total local *taxes per capita* and *percent intergovernmental revenue per capita* from the 2002 U.S. Census of Governments and the 2000 Census of Population and Housing.

We also include a range of social indicators. *Intellectual capital* is the proportion of business establishments that were professional and scientific, educational, managerial, and health and social services based on 2002 U.S. Economic Census data aggregated for zip codes. *Development industry* is the propor-

tion of business establishments in construction and development from the same source. *Socioeconomic status* combines percentage of the population with bachelor's degrees or higher, median household income, and median housing value, all from the 2000 Census of Population and Housing. The scale is created by first standardizing each raw score to have a mean of zero and standard deviation of one, and then summing together the standardized scores. *Percent Democratic voters* in the 2004 presidential election using data from the California Secretary of State (2004) is a proxy for environmental attitudes; Democrats are generally more supportive of environmental policies.

Table A.1 reports the analysis results. The "full" model includes all of the independent variables, while the other three models examine different categories of indicators. The "Adjusted R²" ranges from zero to one, and shows the percentage of variance explained in the sustainability index; it is a measure of model fit. The regression coefficients indicate the direction and size of the influence of a particular independent variable on a dependent variable, where a positive value means that as the independent variable increases, the sustainability index will also increase and negative coefficients predict a decrease in the sustainability index. Larger coefficients generally mean a larger effect, although the scale on which the independent variable is measured must be considered. The traditional threshold for statistical significance is a "p-value" less than .05; these can be seen in the parentheses of the table.

Table A.1: Regression Models for the Sustainability Index

	Full Model	Economic Development Model	Fiscal Capacity Model	Interest Group Model
Development Indicators				
City Size	2.66 (.70; <.01)	3.45 (.47; <.01)	—	—
Housing Density (per mile ²)	.003 (.001; <.01)	.004 (.001; <.01)	—	—
Proportion Population Growth 1990-2004	-.10 (1.14; .93)	1.14 (1.14; .32)	—	—
Fiscal Indicators				
Taxes Per Capita	7.02 (2.53; .01)	—	9.69 (2.62; <.01)	—
Percent Intergovernmental Revenue Per Capita	.004 (.04; .92)	—	-.09 (.05; .06)	—
Social Indicators				
Intellectual Capital	.09 (.11; .41)	—	—	.18 (.09; .05)
Development Industry	.20 (.08; .01)	—	—	.46 (.09; <.01)
Socioeconomic Status	-.12 (.68; .86)	—	—	1.23 (.64; .06)
% Democratic Voters 2004	.05 (.04; .17)	—	—	.09 (.04; .02)
Model Fit Statistics				
Constant	4.55 (3.62; .23)	13.45 (1.32; <.01)	16.46 (2.03; <.01)	1.71 (3.52; .63)
Adjusted R ²	.56	.46	.26	.40

Notes: Cell entries for regression results are unstandardized partial slope coefficients with standard errors in parentheses, followed by p-values (<.01 means "less than 1 percent") for test of hypothesis that the coefficient equals zero. Five cities not included in models due to missing data on some independent variables.

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