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Sustainability Policies and Programs in American Cities: What do the cities do and do they have similar community profiles?

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Introduction

According to Portney (2003), there are at least twenty five major cities in the U.S. that have invested significant amounts of time, resources, and political capital in the development of initiatives to pursue some form of sustainability. It is safe to assume that cities using "best practices" in this area are also developing good public policy. After all, sustainability is a positive set of practices where at the core they are oriented toward good environmental policy and efficiency in over all government implementation systems.

One of the more well known cities that have focused on sustainability is Santa Monica.(Portney 2003). They have developed a comprehensive set of sustainability indicators which are consistent in a very general sense with most of the other twenty five other cities identified by Portney (2003). As such, we will use the indicators in Santa Monica conceptually as a model in this paper. Their general indictors fall into the following areas:

- Resource Conservation
- Transportation
- Pollution Prevention and Public Health Protection
- Community and Economic Development
- Solid Waste and Recycling
- Water
- Energy

These indicators are broad enough to cover most of the dimensions of sustainability. As a recent text on Sustainability (Bell and Morse, 2008) indicates,

sustainability is a very flexible concept which allows cities to adopt a wide range of public policies and programs. As we will see later, the seven cities we chose for in a depth analysis had considerable variety in their policy choices when it came to sustainability. In short, while Santa Monica offers an interesting set of general indicators of sustainability, the other cities we will be looking at have indicators which are very diverse and reinforce the perception that indicators of sustainability are very different. In fact, looking at these cities, we see more divergence that convergence in their sustainability profiles.

Thus, at least looking at a small set of popular cities who indicate that they have good sustainability indicators, we will see that the concept of sustainability is complex and varies considerably. What appears to be happening is that cities are calling it sustainability in a general sense, but in practice they are using a wide variety of policy tools and indicators in practice. We will turn to this point again when we look at the indicators used by selected cities. One of the major themes of this paper is that while sustainability is widely valued and practiced, cities have adopted a number of different ways to implement the concept. One can not pick up the departments, policies, and programs and see sustainability in similar forms in all cities. There are a few similarities but most of the policies are quite different. Nevertheless we will also look at one well known and respected index of sustainability and we will determine how a larger group of cities (50) can be compared in terms of their profile. Even though the policies may vary considerably across cities, the profiles of these cities may be quite similar. Both findings may be important to understanding the phenomena of sustainability.

Another elaboration on the definition of sustainability. A recent text (Bell and Morse, 2008) defines sustainability as:

- Sustainability is the capacity to maintain output at a level approximately equal to greater than its historical average
- Maximizing the net benefits of economic development subject to maintain the services and quality of natural resources over time
- Development that meets the needs of current generations without compromising the ability of future generations to meet their needs and aspirations

With this as a brief background , the overall observation is that while there are a small number of very well known cities which stress agreement on what constitutes sustainability, the practice of sustainability varies widely and there is little consensus on what policies actually constitute sustainability. And the profile of cities that rank high on sustainability analyzed here is quite similar. So policy differences in terms of sustainability may not be inconsistent with a profile of the types of communities who rank high and take sustainability seriously.

Comparing Sustainability in Cities

From Portney's (2003) analysis, there were identified twenty five major cities that have invested significant amounts of time, resources, and political capital in the development of sustainability and sustainability indicators. To further pursue the analysis of whether these cities look more alike on the indicators or look different we looked at a subset of these sustainability cities. In short, we are checking the convergence and/or

divergence of these indicators. We picked seven of the twenty five cities randomly for further analysis and interviews.

First we comprehensively reviewed the web site of the sampled cities for information on sustainability and then we interviewed over the telephone at least three senior staff people in the city for more qualitative information. Based on this review and interviews, the major sustainability policies are listed below.

Table 1 Major Examples of Core Sustainability Policies for selected cities

City	***Sustainability indicators or examples, highest priorities based on interviews with senior staff***
Asheville	A downtown Capital Improvement Plan, infrastructure plan over 5 years
Austin	Developed a Green Choice Program which is a successful utility sponsored green power program
Jacksonville	The Better Jacksonville Plan (comprehensive plan for the entire metropolitan area)
Portland	Developing a world class transit system including the development of light rail
San Francisco	Building of thousands of new affordable units of housing
Santa Monica	Landscaping grants and new storm water treatment facilities
Seattle	Enforces growth management laws so that growth was steered to the urban core and preserved open space and farm land

Source: Results from Interviews with Senior Staff in each City.

Table 1 clearly demonstrates that these well recognized sustainability cities each have adopted different types of core policies, policies that fit their community rather than any national standard of best practice. Table 1 shows that there does not appear to be a lock step approach to sustainability. Cities simply take their own approach to sustainability. Further evidence on divergence in sustainability policy on this is indicated in Table 2 where we coded the policy areas in each of the cities studied. We compared the following policy areas and the conclusion is that the Cities have only a very modest amount of overlap in policies when it comes to sustainability. They simply use their own combination and approach to this policy area. Policies are more unique to the individual cities than they are consistent with best practice used in other cities.

Policies reviewed in the seven cities:

Transportation
Air Quality,
Solid waste
Housing affordability
Energy Climate Change
Local food and agriculture
Resource conservation
Open space and parks
Planning and land use
Economy and economic development

Table 2 Additional Major Policy Approaches in Seven Cities

Policy Areas	Asheville	Austin	Jacksonville	Portland	San Fran.	Santa Monica	Seattle
Transportation	Exemplary downtown bus service	Toll-lanes reduce congestion, pedestrian programs	Integrates bus with transit-ways and exclusive transit lanes	Provides information to single passenger car trips	Extensive mass transit, trolley, bus, ferry, train, bikes	Urban transit system and cost efficiency	Reduce non-work car trips and increasing other alternatives
Air Quality	Poor air quality , focus on out of state pollution	Green utilities, wind and biodiesel programs	Air toxic monitoring program	Reducing toxic chemical use	Clean air vehicles for all city fleet	City vehicles fueled with cleaner air and sustainable fuel	Reduce smog
Solid Waste	Innovative recycling program	Recycling collects all recyclables on trash day	Curbside recycling and appliances, and hazard waste	Master recyclers and community outreach	Extensive curbside recycling program	Water conservation programs	Getting rid hazardous waste
Housing Affordability	Focuses on Affordable housing program	Focus on low and affordable housing	Low interest mortgages available	Provide housing for homeless	Focuses on low income housing and affordability	Focus on special needs groups	Incentives for building housing affordability units
Energy Climate	Energy and technology needs	Focus on green designs for all facilities	Increase use of re-renewable energy sources	Focus on cutting local greenhouse emissions	Reduce greenhouse gas emissions	Stress on education and energy efficiency	Focuses on education and climate control pollution
Local Food and Agriculture	Farmer's markets and rural farmers	Sustainable food center and put products in schools	Farmer's market, 365 days a year	Citizens advisory council for local food issues	Farmer's market and connection to rural areas	Four thriving farmer's markets	Stresses private sector but attractive markets
Resource Conservation	Storm water treatment	Watershed protection review department	Green up through city programs	City purchases from renewable sources	Use recyclable materials for city buildings	Watershed management and a twenty years plan	Use a pesticide reduction program
Open Space and Parks	Greenways Master Plan	Long range planning and natural resource analyses	Created two new parks with state of art pathways	Integrated pest management program	Reduced pesticides for parks	Every resident lives within one half mile of park or open space	Funding 100 new parks with sustainable features
Planning and Land Use	Infill development	Smart growth and limit on sprawl	Infill development	Early assistance Office helps residents with zoning	Focus on infill, zoning, planning and codes	Mix use developments and transportation connection	Focusing on density , especially increasing it
Economy and Economic Development	Mixed use development along the rivers	Create business retention programs	Road and infrastructure improvements	Community involvement in economic development	Long range plan with job creation, tax revenues, etc.	Attract businesses with social responsibility and environmental stewardship	Focus on low rate loans to large projects

In addition, Table 2 demonstrates the following convergence and divergence trends among these selected cities:

- There is absolutely no overlap in Transportation among the seven cities, each has a unique approach.
- With air quality, San Francisco and Santa Monica are quite similar in approach but the other five cities have unique policies.
- With solid waste, five cities use state of the art recycling programs and two do not, so there is a moderate overlap.
- With affordable housing, all the cities are quite close in their policy approach.
- With energy and climate policies, there is no overlap, they are all unique.
- With local food and farmer's markets all the cities are active and there is convergence.
- With resource conservation, there is no overlap and considerable divergence.
- With open space there is no overlap and considerable divergence.
- With planning and land use, only three cities are similar and four dissimilar.
- With economic development there is no convergence.

Overall, divergence is present with transportation, energy and climate, resource conservation, energy and climate, open space, and economic development in cities. ***As for convergence, only affordable housing and local food and farmer's markets show overlap among all the cities***. Finally, air quality and solid waste show some minor amount of convergence. Looking across the cities with reputations for sustainability, there clearly is more

divergence in policy than convergence. So cities are not necessarily using similar policies rather they appear to be going there own way. This, of course, does not discourage best practice. It just means these cities are more like to go their own way in terms of innovation rather than to copy some of the better know cities.

Quantitative Analysis of Selected Cities

Another approach to understanding the similarities and differences that cities have to sustainability, we established ten common indicators for measuring sustainability and then we collected data on the seven cities. Table 2 above lists the ten ways of measuring sustainability. We checked the major national environmental organizations and web sites to find out the major measurements used nationally. What we found with some agreement is that the following measures were widely used and we adopted them for our analysis of the seven cities.

Transportation. Number of gallons of wasted fuel per traveler. Texas Transportation Institute.

EPA monitoring stations, unhealthy air days and air quality charts from EPA Monitoring stations.

Solid waste diversion rate. Solid Waste. Sustain Lane.

National Home Builders Association Opportunity Index.

Sustain Lane rankings. Energy and Climate.

Farmer's Markets per capita. USDA Food and Nutrition Service.

Water usage daily. NGO.

Total expenditures per resident total parkland. Trust for Public Land

Sustain Lane Planning and Land Use.

Median household income. U.S. Census

Next we took the seven cities and ranked order each city on the ten indicators.

Table 3 Comparative Analysis of Sustainability in Seven Cities

City	Transportation	Air Quality	Solid Waste	Housing Affordability	Energy Climate	Local Food	Resource Conservation	Open Space and Parks	Planning and Land use
Asheville	NA	4	4	3	NA	2	6	7	NA
Austin	3	5	5	2	NA	6	1	4	3
Jacksonville	1	NA	NA	1	NA	7	7	5	6
Portland	2	4	3	4	1	3	4	3	2
San Francisco	5	3	6	6	1	5	3	2	1
Santa Monica	6	5	2	7	2	1	5	6	5
Seattle	4	3	3	5	1	4	2	1	4
Rank summary	***Asheville 33***	***Austin 34***	***Jackson-ville 34***	***Portland 32***	***San Francisco 33***	***Santa Monica 42***	***Seattle 29***		

The lower the score, the higher the ranking on sustainability. What this analysis reveals is that Seattle and Portland seem to do the best on these indicators while the rest are closer to together and cluster around the middle. One interpretation of this is that in practice these seven cities are fairly close together on indicators of performance even though their policies are quite different. They are not doing a lot of things the same regardless of what their web sites say and what the interviewers said. In practice, these cities are more dissimilar in their policies. Ironically, even though policies are dissimilar, the rankings on measures of sustainability are closer than what might be hypothesized. It certainly means that different polices can result in similar performances which is rewarding for cities. There is more than one route to progress. Finally if you remove San Francisco and Seattle from the group, the rest of the cities are quite close in their performance which stresses performance rather than policy. With San Francisco and Seattle, we have two outliers that show more performance and accomplishments.

Civic Engagement and Public Policy

Table 4 Civic Engagement and Sustainability

Ranked from highest to lowest on Median Household Income	Presidential Election Turnout, 1976-2000	Municipal Elections 1976-2000
Seattle, $45,736	79%	41.4%
Portland, $40,146	77%	39.3%
Asheville, $32,772	69.8%	25%
San Francisco, $55,221	67.9%	43%
Austin, $42,689	57%	17.5%
Jacksonville, $41,736	71.5%	24.3%
Santa Monica, $43,518	72.1%	18.7%

Cities with high sustainability were also checked for civic participation. We assembled voting data for Presidential and Municipal elections and then compared the ranking of voting participation with the cities ranking on sustainability. Looking at Table 4, the findings are quite clear. With the exception of San Francisco, all of the communities with high participation rates are also communities with high ratings on sustainability. Income and turnout do not show a clear relationship . Thus high participation communities are more likely to develop their policies in the areas of sustainability. Income seems to be less important although all of these communities are clearly middle class. Higher income communities are more likely to get involved in sustainability. Lower income communities are less likely to get involved although we do not have any of theses in this analysis. We need to compare some data here.

In addition to civic participation, communities have there own view about why people are more engaged in the development of sustainability policy. The interviews with senior staff revealed some interesting comments about their residents and local politics.

In Asheville, the senior staff indicates that the continuity of community (political) leaders over time has been extremely helpful. These leaders form coalitions and networks and define the agenda. They have been very active in recent years.

In Austin, the senior staff sees civic support because of local artists, musicians, small businesses and others who want to maintain a high quality of life. They in recent years have been stressing the improvement of the quality of life.

In Jacksonville, the senior staff has seen the development of active civic organizations. There is a lot of local participation and interest in local politics and the groups help to develop the campaigns. The community periodically completes reports on the community and indicates what needs to be done. This is widely distributed in the community.

In Portland, people feel a sense of duty towards engagement. The Community feels progressive and is at the front edge of participation examples.

In San Francisco, the senior staff thinks the city protects minority rights and has a strong tradition of challenging local issues. Diversity and tolerance generate participation. There is a long history of participation.

In Santa Monica, they believe in activism, using their web site to communicate, and the importance of creating a tradition of involvement. The city demonstrates progressive activism.

In the city of Seattle, there has always been a reputation for Seattle being a raucous place for citizen involvement. There is also a strong history of neighborhood involvement.

In sum, civic engagement and sustainability are best seen in the ballot box. Cities with higher sustainability scores have higher voting

turnout. Anecdotal evidence from senior staff in these cities reinforces civic engagement and each city attests to active citizen involvement. All of these cities are active politically and no doubt this is what has pushed them out front in terms of the development of sustainability policies. This connection between civic engagement and sustainability is reinforced below in our 50 city analysis. The hypothesis for civic engagement seems to have a broader application than just looking at the sub-set of seven cities used by Portney (2003).

Correlates of Sustainability—Is there a common profile for cities with high levels of sustainability?

Although there appears to be considerable divergence in what sustainable cities do, a broader question is whether there are only certain kinds of communities who are likely to engage in serious sustainability policies and programs or whether the activities are spread widely among different kinds of American cities with no apparent pattern. Portney's (2003) analysis of 24 cities in his book indicated that the median age of the city and having fewer people employed in manufacturing were significant correlates of high levels of sustainability policies and programs. Since these two variables were the only significant ones and other demographic and political variables tested were not significant, he concluded that demographic and other relevant variables did not predict

well to sustainability and thus there was not a common profile of active sustainability cities.

In an attempt to follow up on Portney's aggregate analysis/study, we conducted our own multivariate analysis using the ranking of sustainability developed by SustainLane (see Table 6) as a dependent variable. We took the top 50 cities ranked by SustainLane using their index of 16 variables illustrated on their web-site (see Table 6). Table 6 shows the results of our analysis. Eighteen independent variables were correlated significantly with the SustainLane ranking (dependent variable).

Leading the way was population change during the 1990s. Fast growers were more likely to pursue sustainability strategies. Fast growers usually have more positive economic development taking place and that is what attracts people to the area. Annual payroll of private establishments and government expenditures were significant demonstrating that community wealth was significant. The only ethnic variable that was significant was the % of the population that was Asian. Other ethnic and racial groups were not significant. Three education variables were significant: % with high school degrees; % with BA degrees; and % with graduate degrees demonstrating the importance of education and sustainability. Two housing variables were significant---median home value and gross monthly rent. These demonstrate that housing values are relatively high in the active cities. And from a national data set on people's involvement in the non-profit sector, there were a number of

significant variables----% of people who volunteer, volunteer rate, % who work with neighbors, % who attended public meetings. Clearly volunteering at high levels is significantly correlated with sustainability. The profile is rounded out with civic engagement figures that focus on turnout in 3 recent elections at the federal level and in separate US Senate elections. As Table 6 demonstrates, they are significant predictor's variables of sustainability. Additionally the 18 variables used in the analysis yielded an R squared of .801. Additional regression analysis showed that the most important predictors (of the 18) were: % change; wealth; turnout; education; and volunteerism. Education and wealth most certainly lead to higher turnout rates and volunteerism. % change probably means the area's economy is doing well and attracting a more skilled labor force.

In contrast to Portney, there appears to be a rather consistent profile of cities that excel in the rankings on sustainability. While ethnicity appears to pay a minor role (% Asian in the western cities) the profile of cities does show that wealth, educational levels, volunteerism, higher housing values, and civic engagement (turnout) are closely related to sustainability. As we look at the profile and the SutainLane rankings we see a picture of middle to upper class and a highly participatory group of cities who excel in sustainability. This seems reasonable and certainly fits the hypothesis of who generally supports the environmental policies in this country.

Conclusion

Sustainability in a selected number of cities shows that there is more divergence than convergence in policies that are used to implement sustainability. In particular, cities that have dominant or core policies are more likely to be different rather than to be similar with other cities. Major policy approaches toward sustainability are also more likely to be different and not similar. It is also apparent that different policies can lead to similar performance measures. Cities do not have to have the same approach to get good results. There are different ways of getting to the same place. With participation and civic engagement, a small group of cities with higher turnout rates are more likely to do better on sustainability measures (7 cities from Portney).

What all of this says is that sustainability is a flexible concept and the policies used to achieve it are different and cities can use different approaches. In terms of public policy, cities have flexibility in how they accomplish things. There are no hard and fast rules. Scoring well on sustainability is connected to turnout but otherwise experimentation with the use of different public policies is encouraged. Success has different routes.

However, having concluded that the sustainability policies and programs are very different and that a core ideology surrounding

sustainability is absent, it is also possible to conclude that cities who pursue sustainability policies and programs do share a lot of the same demographic and political characteristics. There is a consistent profile for cities who standout as leaders in terms of sustainability. The statistical analysis above demonstrates that cities that have higher amounts of wealth and housing values, higher levels of education in their population, higher levels of volunteerism, and more civic engagement (turnout) are more likely to develop and implement sustainability policies. So when cities like Portland, San Francisco, Seattle, Denver, Austin, and Minneapolis score high on the SustainLane ranking, it should not be too surprising that they also fit the demographic and political profile exemplified in our correlation and regression analysis. The 50 city analysis reinforces the common profile of cities that consistently perform near the top of most sustainability rankings.

Table 5- Selected City Profiles for Seven Sample Cities

based on 2000 census

	Asheville	***Austin***	***Jacksonville***	***Portland***	***San Francisco***	***Santa Monica***	***Seattle***
Election turn out:							
President	69.8%	57%	71.5%	77%	67.9%	72.1%	79%
Non-presidential	60.3%	33%	48.7%	64.1%	56.7%	54%	59.9%
Municipal (1976-2007)	28.4%	17.5%	24.3%	39.3%	43%	18.7%	41.4%
Median Family Income	$32,772	$42,689	$40,316	$40,146	$55,221	$50,714	$45,736
% Below Poverty line	15.5%	14.5%	12.2%	13.1%	11.3%	10.4%	11.8%
Population Change, 1990-2000	4.1%	32.8%	15.8%	8.9%	7.3%	-3.3%	9.1%
Population	60,045	656,562	735,617	524,121	776,733	84.084	563,374
Density	1683.4	2610.4	970.9	3939.2	16,634.4	10,178.7	6717
% Black	17.6%	10%	29%	6.6%	7.8%	3.8%	8.4%
%Hispanic	3.8%	30.5%	4.2%	6.8%	14.1%	13.4%	5.3%
%Manufacturing	9.9%	7.7%	6%	9.6%	5.6%	3.8%	8.4%
Per Capita local Govt. Expenditures	$2160	$3655	$1971	$5764	$7827	$5199	$6230
People 65 plus	18.3%	6.7%	10.3%	11.6%	13.7%	14.4%	12%
% Bachelors Degree or Higher	30.4%	40.5%	21.2%	32.6%	45%	54.8%	47.2%
Median Value of Owner Occupied House	$109,100	$124,700	$87,800	$154,900	$396,400	$625,900	$259,600

Source: U.S. Census and individual city budgets for turnout rates.

Table 6—Correlations and Significance Tests for a 50 city analysis (SustainLane)

Variable , Independent	Sig. (1-tailed)	Pearson Correl
Population (2007)	0.061	
Percentage Population Change (2000-2005)	**0.002**	
Percentage Population Change (1990-2000)	**0.002**	
Crime Rate, per 100,000 (2005)	0.185	
Unemployment Rate (2005)	0.151	
Value Added Manufacture per person	0.123	
Percent of Manufacturing Establishments 20+ Employees (2007)	0.427	
Annual Payroll (mil.) divided by number of establishments	**0.036**	
Wholesale Trade	0.193	
General expenditures, per capita	**0.004**	
Percentage of Population African-American (2005)	0.224	
Percentage of Population Asian (2005)	**0.02**	
Percentage of Population Hispanic (2005)	0.145	
Percentage of Female Headed Households	0.149	
Percentage of High School Degrees (2005)	**0.046**	
Percentage of BA Degrees (2005)	**0.005**	
Percentage of Graduate Degrees (2005)	**0**	
Median Household Income (2005)	0.356	
Median Family Income (2005)	0.186	
Percentage Below Poverty (2005)	0.152	
Median Home Value (2005)	**0.005**	
Median Gross Monthly Rent (2005)	**0.028**	
Percentage of Residents Who Volunteer (2006, 2008)	**0.026**	
Volunteer Hours, per resident (2006, 2008)	0.372	
Volunteer Rate Percentage	**0.028**	
Work with neighbors, per thousands	**0.05**	
Attend public meetings, in thousands	**0**	
Mayor Turnout Percentage, for the election which decided the outcome	0.087	
Turnout in the Federal Election (2004)	**0.05**	
Percent Democratic Senate Election (2004)	**0.001**	
Percent Democratic Gubernatorial Election (2004)	0.301	
Turnout in the Federal Election (2006)	**0.01**	
Percent Democratic Senate Election (2006)	**0.037**	
Percent Democratic Gubernatorial Election (2006)	0.255	
Turnout in the Federal Election (2008)	**0.022**	
Percent Democratic Senate Election (2008)	0.29	
Percent Democratic Gubernatorial Election (2008)	0.439	

Dark Green Shows <.01 Significance
Light Green Shows <.05 Significance

Note: The Dependent Variable used in the analysis above is The SustainLane 2008 U.S. City Rankings of the 50 most populous cities in the nation and it is the most complete report card on urban sustainability. The index includes measures from a wide variety of categories : air quality; energy and climate change; housing affordability; city commuting; green building; knowledge and communication; city innovation; green economy; and local food and agriculture. The 50 city rankings for 2008 were used in the analysis. http://www.sustainlane. Com/us-city-rankings/overall-rankings. See the weighting of data on the web-site.

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