Civic Engagement and Sustainable Cities:
A Comparative Analysis of Five Cities in the United States

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시민참여와 지속 가능한 도시: 미국 도시들의 비교연구

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ABSTRACT : Recent years have shown that sustainability has become a topic of much interest amongst the research community, all government levels, and concerned citizens throughout the world. This paper focuses primarily on the relationship of civic engagement with sustainability and the cities' programs. Several theories on civic engagement that may be applicable to what five American cities are accomplishing with their indicators such as: sustainability models with corresponding goals; direct citizen involvement; aggregative and deliberative decision-making; strategic planning for sustainability; and the relevance of social capital. The cities of Seattle, Jacksonville, Cleveland, Denver, and Santa Monica have incorporated civic engagement into their sustainable development plans by utilizing sustainability indicators. These indicators are divided into various areas that deal with the environment, education, health, arts, culture, recreation, economy, social well-being, government, transportation, and safety. Following the summary of the indicators used by the city programs is an analysis of the indicators in respect to civic engagement and discussion of indicators importance, social capital, and implications for the world to consider. Ultimately sustainability requires a commitment to be made by everyone concerned with the co-existence between humans and our planet to recognize that our actions today affect both the present and future generations.

Key Words : Sustainable Development, Civic Engagement, Indicator, Urban Policy, Municipal Government

요약 : 기후변화와 환경에 대한 관심과 중요성이 증대되고 있는 가운데 도시들이 시민참여를 통해 지속 가능한 개발을 위한 정책과 지표를 개발할 필요성도 증대되고 있다. 이 논문은 미국의 시애틀, 잭슨빌, 클리블랜드, 덴버, 산타모니카 등 다섯 도시의 지속 가능한 성장과 개발을 위한 지표를 시민참여와 사회적 자본 이론의 배경 하에서 비교하여 논하였다. 문헌자료와 각 시정부의 웹사이트 정보 등을 분석하여 다양한 지속가능 개발 및 환경 관련 지표를 수집하였다. 다섯 도시들은 다양한 형태의 지속 가능한 성장 지표를 매개체로 시민참여와 발전계획을 연계시키고 있다. 지표들은 환경, 교육, 보건, 예술, 문화, 레크리에이션, 경제, 사회적 안정, 정부, 교통, 치안 등으로 다양하게 세분화되면서 발전하였다. 이러한 지표의

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활용은 실제적인 기후변화나 지속 가능한 개발 정책의 형성 및 집행과 관련이 있으며, 이러한 과정을 통해 이해당사자집단 간에 열린 의견교환이 일어나고 있음을 볼 수 있었다. 따라서 지표의 개발과 활용 자체에 다양한 집단 간의 커뮤니케이션이 목표로 포함되어 있음도 알 수 있었다. 이러한 미국 도시들의 지표 개발 사례는 서울시 등 다른 국가의 도시들에게 다양한 지표 활용의 가능성을 제시하며, 그 실제적인 편익이 무엇인지를 알려준다. 대부분의 도시가 주민의 직접 및 간접 참여를 기반으로 하는 직접적 지표나 포괄적인 정책의 형태를 개발하여 지속 가능한 성장을 추진하고 있다. 하지만, 미국의 도시에서 이러한 지표의 활용에 있어 소수인종 그룹이나 여성 및 유소년 등의 의견과 참여가 상대적으로 적거나 여러 장애가 있음을 볼 수 있었다. 이러한 현상에 대한 타개책으로 인터넷과 같은 새로운 커뮤니케이션 수단을 통해 시정부와 시민이 정보를 나눔으로써 주민들의 만족도를 높이는 방안은 없는지 살펴볼 필요가 있다.

주제어 : 지속 가능한 개발, 시민참여, 지표, 도시정책, 시정부

I. Introduction

The first step in recognizing that our actions have consequences is to define the sustainability problem. The problem should not be restricted to just one city or region in the world. People, governments, and businesses all play crucial roles in helping to define the sustainability problem. Solutions have been proposed, but policies are what should be used to address sustainability. Policies formed by cities should address the environmental problems and finite resources amongst other relevant concerns such as health, safety, and the economy. During the mid-1990s, the United Nations held a conference attempting to figure out how to provide healthy and sustainable living spaces(Korten, 1996: 35). The conference encouraged local and national governments and citizen organizations to address the sustainability issue(Korten, 1996: 35). If institutional failures do not persist in the form of expensive, ineffective and contradictory alternatives, then solutions are possible(Korten,

1996: 36). The guiding principles of equity, sustainability, and civic engagement are needed to offset any institutional failure in order to fulfill the balance of human needs and co-existence with our planet(Korten, 1996: 41).

Durning's work on over-consumers, sustainers, and the excluded best illustrates the need to fulfill the balance of human needs and co-existence with our planet(Korten, 1996: 43~44). The over-consumers(20% of people who consume 80~85% of the world's resources); and the excluded(the other 20% who consume very little) represent the dilemma perfectly(Korten, 1996: 43~44). Cities should encourage their citizens to push towards becoming sustainers (60% of people) who consume enough to fulfill their basic needs(Korten, 1996: 43~44). Civic engagement encourages citizens to become sustainers because citizens can unite together and remove legitimacy from certain institutions, government, and businesses that are promoting over-consumption(Korten, 1996: 47~48). Thus, citizens can take responsibility for resource

usage and promoting public accountability of all government levels(Korten, 1996: 47~48).

Citizens also show accountability for their actions by realizing that resources are not finite. Fortunately, cities are working diligently on policies or programs to serve their citizens and advocate sustainability. As cities are forming policies or programs both civic engagement and the visioning process should contribute towards the implementation of plans. Civic engagement allows citizens to become immersed in local participatory and collaborative processes that support sustainable development in cities such as environmental planning(Portney, 2005: 586). The citizens' desire to promote sustainability legitimizes city programs and policies. This desire should also attract the attention of elected leadership, and both the local and natural environments benefit from this desire and attention. The visioning process is related to civic engagement, but there are some distinctions that should be noted. Citizens are invited to participate in civic forums or small committees to allow their opinions to be heard and recognized. Citizen input may be incorporated into sustainable development programs that push cities to move forward embracing outcomes favorable to both citizens and cities.

II. Civic Engagement and Theoretical Frameworks

Citizens may decide to join forces with government agencies, businesses, and other stakeholders that desire to formulate sustainability models with corresponding goals (Leuenberger, 2007: 396). The social system is the first goal as follows: Citizen participation and social justice are desired thus allowing citizens to make informed decisions about resource use and management(Leuenberger, 2007: 396). The second goal, the economic system, represents the following: equity in distribution, social welfare, and efficiency should be maintained by ensuring fair resources' allocation and reducing waste when goods and services are provided(Leuenberger, 2007: 396). The biological system is the last goal as follows: The balance between human resource use and natural capital is kept steady because of biological productivity, genetic diversity, and resilence(Leuenberger, 2007: 396). Another theoretical framework for cities to consider if sustainability models are not chosen is direct citizen involvement with both the economy and government levels(Leuenberger, 2007: 401). Promoting a healthy, growing economy that provides equitable goods and services with community and citizen motivations for better living standards now and in the future are the two keys to direct citizen involvement (Leuenberger, 2007: 401). The last theoretical framework, strategic planning for sustainability, also requires decision-making but more than two keys for public participation because of the five issues(Blair, 2004: 105). Identifying citizens to participate; the appropriate time for participation; identifying issues, problems, and opportunities associated with participation; the resources needed; and the tools necessary to implement strategic planning decisions are the

issues(Blair, 2004: 105).

Those theoretical frames can be applied to policy or city indicators for sustainable development. Citizens can participate in indicators in various ways. However, there are some challenges to citizen participation such as finding the best tools possible for the purpose intended, the relationship between administrators and citizens, stakeholders analyzing data to formulate strategies, and what will work for particular communities(Blair, 2004: 106). There should be mechanisms in place to help ensure strategic planning for public participation functions well especially within the planning and implementation stages(Blair, 2004: 107). These mechanisms also help administrators and citizens because meaningful and detailed planning help facilitate implementation and public involvement(Blair, 2004: 107). The strategies used for the environment, for example, are influenced by economic development by enticing and retaining businesses to encourage industrialization, and determining the forces that impact communities to formulate options(Blair, 2004: 108). Some of these strategies may include the following: recreation development, rural housing, service sector employment, infrastructure improvement, economic revitalization, and retention and expansion of existing business(Blair, 2004: 109). Communities should also focus on organizational relationships and structures, such as government agencies, that will help boost the private sector's presence in strategic planning(Blair, 2004: 109).

1. Social Capital: Relevance to Indicators

The third purpose of indicators is based on a social capital foundation because of the interaction between citizens and other stakeholders that may be involved in planning. Social capital is the shared knowledge and understandings of people who have built up organizations or structures(Roseland, 2000: 81). Networks, norms, and trust to increase society's potential are formed and nurtured(Roseland, 2000: 81). Social capital is created when trust is formed between individuals and can be a renewable resource unless not in use(Roseland, 2000: 81). Social capital is not threatened by a lack of resources because of imagination, but lacks spontaneity, takes time to develop, is subject to direct assault, not transferable, and people resist being instrumentalized(Roseland, 2000: 82). Indicators can play as formal institutions to enhance social capital, including civic community, institutional performance, and citizen satisfaction.

Measuring social capital, therefore, is somewhat difficult but according to Putnam social capital may diminish because of a decline in civil society(Roseland, 2000: 82). A loss of trust between citizens and their government and less involvement in the community will result(Roseland, 2000: 82). Many analysts support Putnam's position by citing economic vitality and the wealth of nations as measurements of social capital related to civil society(Roseland, 2000: 82~83). However, the best measure of social capital is person-oriented

(Roseland, 2000: 82~83). Individuals' forming social network produces non-monetized and monetized goods and services that measure social capital(Roseland, 2000: 83). These networks can serve a variety of purposes such as villagers growing food to harvest, college graduates completing assignments and studying together(Roseland, 2000: 83). The government, businesses, and citizens can form a partnership to develop comprehensive, definitive indicators for sustainable development programs as a result of networks(Roseland, 2000: 83).

2. Data Collection and Analysis Methods

There were only two strategies needed in collecting data and for analyzing the five American cities and their indicators. A review of current literature about sustainable cities resulted in a wealth of information on various American cities. However, only certain cities that had indicators and some trends that signified progress were used. Therefore, the city web pages of Seattle, Jacksonville, Cleveland, Denver, and Santa Monica were investigated next. Each city has a sustainable development program that is available for the public to view including corresponding sections, initiatives, and indicators. The first part of the analysis of these cities involves comparison amongst the cities based on their indicators. The second part of the analysis consists of the application of the theoretical frameworks to the city programs. Specifically these indicators will be discussed in relation to their city programs, and social

capital as relevant to civic engagement and the implications of citizen involvement.

III. Civic Engagement: Five American Cities

The Seattle program, Towards a Sustainable Seattle, was developed by the Department of Planning and Development and has been updated thru 2006 using forty indicators. Most of these indicators show promise in the following eleven areas: neighborhood planning, human development, housing, land use, economic development, urban villages, utilities, transportation, capital facilities, cultural resources, and the environment. Seattle's program has seven goals that are meant to enhance and respect the environment and encourage civic engagement. The seven goals are also meant to improve the quality of life for citizens, and utilize the environment and other resources efficiently to improve the economy. The Jacksonville 2007 Quality of Life Progress Report made by JCCI has one hundred and eleven indicators for nine specific areas. These areas include the arts, culture, and recreation; economy; education; environment; government; health; safety; social well-being; and transportation. Overall the indicators' trends for arts and culture, social well-being, and transportation are promising. The economy, environment, and health are neutral; but education, responsive government, and safety are not promising.

The EcoCity Cleveland program, funded by a nonprofit organization of the same name, incorporates fifty-six indicators used for

ecological design, smart growth, transportation choices, the bioregion, and health & home sections. Cleveland has pushed for positive trends with the following indicators: air quality; climate change(reduce greenhouse gas emissions); diversity(promote biodiversity); energy (purchase clean, renewable energy sources). Secondly, there is green building(promoting conservation); green spaces(restoring degraded areas, building parks and greenways); infrastructure(preservation /maintenance); and leadership(promote initiatives). Third, there is neighborhood character(redevelopment that mixes housing, commerce, and amenities); public health; regionalism(form partnerships); and smart growth. The final trends are sustainable jobs(promote conservation, reduce waste, and prevent pollution); transportation choices(non-pollution transit); water quality; and waterfront (increase public access). EcoCity Cleveland has started EcoVillages that use green building and transit-oriented development to promote an ecological urban life. EcoCity also has the BLUE project to provide greater public access to a renovated Cleveland waterfront that embraces ecological quality.

Denver uses projects as well within the city program Denver Comprehensive Plan 2000. Godschalk(2004: 10), in "Land Use Planning Challenges: Coping with Conflicts in Visions of Sustainable Development and Livable Communities", discussed Denver's adoption of Metro Vision 2020 in 1997 that established an urban growth boundary around nine counties supporting mixed-use, high density urban centers. These centers also support transit,

housing, open spaces, free-standing communities' water quality and floodplain conservation, and jobs(Godschalk, 2004: 10). Denver's city website outlines Blueprint 2002 goals focusing on fifty indicators for arts and culture, economic activity, education, housing, human services, land use, legacies(architectural, landscape), metropolitan cooperation, mobility, neighborhoods, and environmental sustainability. Staley (2006: 237), in "Institutional Considerations for Sustainable Development Policy Implementation: A U.S. Case Study", acknowledges Santa Monica as one of the first American cities to invest heavily in environmental sustainability for city planning and policies. The sixty-six goals and indicators deal with eight strategies of Sustainable Santa Monica include the following: resource conservation; environmental and public health; transportation; economic development; open space and land use; housing; community education and civic participation; and human dignity(Staley, 2006: 238~239). Table 1 shows a summary of the five cities programs including program names, number of indicators used, and program developers.

Each of the cities has websites with detailed descriptions of their indicators within corresponding sections of their sustainable development programs. Both Jacksonville and Denver are consolidated-county governments. Denver separates the indicators by sections but further classifies these sections by grouping them into the two following divisions: human environment and physical environment. There are, however, human environment sections not shared by both

Table 1. Five Cities' Sustainable Development: Overview and Indicator

City	Program	# of Indicators	Developer
Seattle	Towards a Sustainable Seattle	Forty	Dept. of Planning & Development
Jacksonville	Quality of Life Progress Report	One hundred and eleven	Jacksonville Community Council, Inc.
Cleveland	EcoCity Cleveland	Fifty-six	EcoCity Cleveland (nonprofit organization)
Denver	Denver Comprehensive Plan 2000	Fifty	Denver City Council Community Planning & Development Agency
Santa Monica	Sustainable Santa Monica	Sixty-six	The Office of Sustainability and the Environment

cities such as: Jacksonville's social well-being, health, safety, and responsive government; and both Denver's neighborhoods and human services. There are a few sections that both cities share using the Denver classification divisions such as economic activity, education, and arts & culture. As can be seen in Figure 1 Jacksonville has more indicators overall under the human environment division, but Denver has more indicators overall under the physical environment division.

Denver's economic activity can be broadly summarized as neighborhood development activity, economic development investments, and the Denver International Airport. Jacksonville's economic activity includes net employment growth, unemployment benefit

claims, and the unemployment rate. Next, there are the average annual wage and per capita income indicators. Third, the city monitors
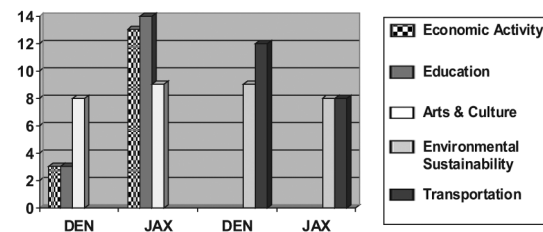
(Human Environment): Economic Activity, Education, Arts & Culture

	Denver	Jacksonville
Other	Neighborhoods	Social Well-Being
Categories	Human Services	Health, Safety
Not used		Responsive Government

(Physical Environment): Environmental Sustainability, Transportation

	Denver	Jacksonville
Other Categories	Legacies	—
Not included	Housing	

Figure 1. Comparison between Jacksonville and Denver

children receiving free or reduced lunch and public assistance recipients. Fourth, the city monitors single family home affordability, average monthly household JEA utilities' costs, new housing starts, and real property total taxable value. The final two economic activity indicators are tonnage handled by marine terminals and tourism.

Jacksonville's education area also has specific indicators for students in certain grades for reading and math, first grade promotions, and students attending racially-balanced schools. There are other indicators such as: students absent at least twenty-one or more days, higher education degrees awarded, public high school graduation rate, exceptional students receiving

diplomas, and adults with bachelors' degrees or higher. Finally, there are the following indicators: high school dropout education and employment outcomes; public high school dropout rate; and high school graduates prepared for college. Denver, once again, has broad indicators such as: public library programming; museum and library services leadership grant; free internet; lights after school; preparing kids for success; and fresh city life. The arts and culture section is also full of initiatives and opportunities for the citizens to take advantage of such as Space Matters and the Denver Art Museum. Jacksonville's arts and culture indicators, however, relate to attendance, public parks, library circulation, boat ramps, and public & private arts' support.

Following those areas that represent the human environment are the sections that represent the physical environment for both Jacksonville and Denver. There are two sections, however, that Denver and Jacksonville do not share known as Legacies and Housing. The only substantial link between both cities' sustainable development programs are the air and water quality indicators. Although the indicators for the environmental sustainability section have been described earlier for Jacksonville and Denver the latter city has other indicators. Denver has formed the following sustainability initiatives: Greenprint Denver, Justice Center LEED certifications, Public Works, Healthy People 2010, Transit Station Planning, and Stewardship Programs(see Figure 1).

The only area that is shared for the physical environment between Jacksonville and Denver is transportation, mobility, and land use. However, Jacksonville's indicators focus on different means of transport and mobility rather than the overall picture of transportation that Denver focuses on including land use. Bus indicators that Jacksonville monitors include the following: average miles of JTA bus service; average JTA bus rider-ship per 1000; and JTA headways within thirty to sixty minutes. The average weekday Skyway rider-ship and twenty-five minutes or less commute times are also measured. Third, indicators involving Jacksonville International Airport are also monitored such as: destinations served by nonstop flights from the airport; average available seats on the flights per day; and total passengers flying in or out per year. Denver, on the other hand, has indicators for street zoning, zoning code update, and three transportation plans. These plans incorporate transit-oriented development, strategic transportation, and downtown multimodal access. Denver also monitors catalytic investments, the civic center, Southeast corridor, Union Station, and the city international airport. Finally, the Plan 2000 and Blueprint Denver are also included as part of Denver's transportation section.

However, the Jacksonville Quality of Life Indicators program has sections that stand out such as Social Well-Being, Health, Responsive Government, and Safety. Some indicators included for these sections are as follows: racism; volunteerism; births to teen mothers; foster care; children of divorcing parents; heart
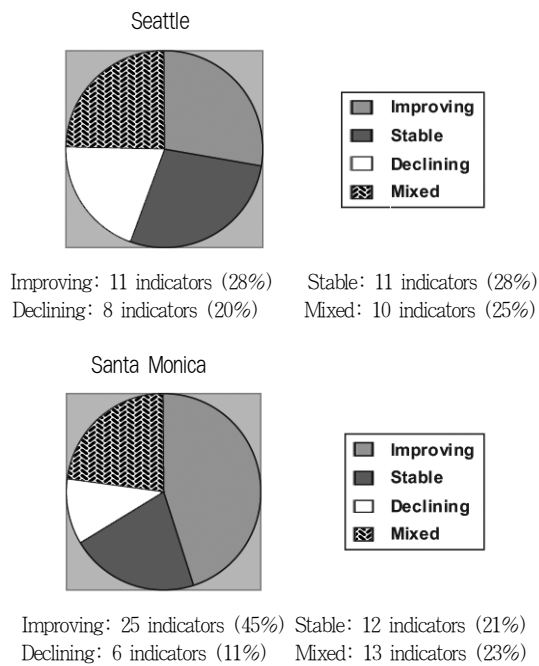
disease, lung disease, HIV/AIDS, and cancer deaths; healthy newborn birth weights; infant death rate and racial disparity; early prenatal care; senior citizen suicide rate and feeling safe within neighborhoods; voter registration; informed about the local government; elected leadership and school board rated well; elected officials racial and gender diversity; child abuse, domestic violence crime, and crime victims' reports; police, rescue, and fire-call response times; motor vehicle accidents; domestic violence-related homicides; and student conduct violations.

Following both the similarities and differences of Jacksonville and Denver programs are both Santa Monica and Seattle, that overall, share similar environmental sustainability indicators. According to an analysis of their city websites there are four categories that help compare these cities' sustainability programs. The four categories used to rate the indicators are as follows: improving, stable, declining, and mixed or unknown. Santa Monica has fourteen more indicators than Seattle that have been rated as improving. Seattle has eleven indicators labeled as stable, one fewer than Santa Monica. Santa Monica has done better than Seattle with two fewer indicators rated as declining. Although Santa Monica thus far has done better overall than Seattle there are three more indicators that are labeled as mixed for Santa Monica.

Indicators that both cities have help demonstrate the difference explained above due to the categories. The energy use indicator was

the only one for both cities that appeared within the improving category. Renewable energy use is within the improving category for Santa Monica but under the declining category for Seattle. Vehicle miles traveled appears within the improving category for Santa Monica but under the declining category for Seattle. The ability to meet basic needs is within the declining category for Seattle but within the improving category under Santa Monica. Water consumption is within the improving category for Seattle but water use, the Santa Monica equivalent is under the stable category. The voter participation indicator is stable under Santa Monica, but improving under Seattle's program. The open space indicator is also stable for Santa Monica but mixed or unknown for Seattle. The health indicator is mixed or unknown for Seattle but declining in Santa Monica. Affordable housing is stable for Seattle but declining for Santa Monica. The solid waste and greenhouse gas emissions indicators are mixed or unknown for Santa Monica, but these two indicators are declining and improving respectively for Seattle (air quality used as the greenhouse gas emissions related indicator). Figure 2 shows the differing percentages overall of the ratings for the indicators used in both cities.

Some of the indicators for Cleveland that are recorded are related or similar to the other four cities' programs. EcoCity has not used ratings for their indicators, but three of the five sections of the program are somewhat related to the information for both Jacksonville and Denver. The EcoCity Ecological Design section shares

Seattle

Improving: 11 indicators (28%)   Stable: 11 indicators (28%)
Declining: 8 indicators (20%)   Mixed: 10 indicators (25%)

Santa Monica

Improving: 25 indicators (45%) Stable: 12 indicators (21%)
Declining: 6 indicators (11%)   Mixed: 13 indicators (23%)

Figure 2. Comparison between Seattle and Santa
Monica(Indicator Ratings)

the following indicators with the other programs:

air quality, reduce greenhouse emissions; green spaces; public health; non-pollution transit; and water quality. Transit-oriented development and the preserving open space indicators of the Transportation Choices and Goals section; and gardening, green building, and household hazard waste of the Health & Home Practices section are also apart of the other cities' programs (see Table 2).

The Health & Home Practices section is the unique way the EcoCity Cleveland program stands out amongst the other cities. Citizens are exposed to knowledge about a few environmental indicators but there are other indicators for citizens' health and homes. Some examples are air quality indoors, asthma, drinking water, food safety, toxic releases in the community, and the West Nile Virus. The Bioregion and Smart Growth sections were not acknowledged

Table 2. EcoCity Cleveland Indicators

	EcoCity Cleveland: Indicators for 3 of 5 sections
Ecological Design	Air quality; reduce greenhouse emissions; biodiversity; clean and renewable energy use/sources; green building; green spaces; restore degraded areas, parks, and greenways; infrastructure preservation and maintenance; leadership; neighborhood character; public health; regionalism; smart growth; non-pollution transit; sustainable jobs; water quality; and waterfront
Transportation Choices & Goals	Maximize pedestrian, mass transit, and bike-friendly lanes' use; promote compact, mixed-use development; minimize duplication of infrastructure; preserve open space; reduce public health threats due to pollution; preserve/enhance sense of neighborhood and community; no substantial future harm contribution to an existing urban community, region; encourage citizens and businesses to incorporate these choices and goals; transit-oriented development; and City Wheels program
Health & Home Practices: expose citizens to knowledge about the indicators to the right	Air quality indoors, appliances, asthma, automobiles, biking and walking to school, cleaning products, composting, cosmetics and other personal products, consumption, donating used stuff, drinking water, energy efficiency & renewables, food safety, gardening, green building, historic home maintenance, household hazardous waste, investing responsibly, junk mail, lawn care, motor oil recycling, pest control, pesticide alternatives in school, recycling, restoring your backyard, stream care, traffic calming, toxic releases into community, and West Nile virus

because indicators were not included on the table above due to lack of comparisons. Denver's Comprehensive Plan 2000 also has

sections that make the program unique such as Legacies, Neighborhoods, and Human Services as three of the sections not included. The indicators within these sections are as follows: historic preservation; Mayor's Design Awards; residential typologies; Justice Center; Broken Windows Initiative; Neighborhood Inspection Services; Mean Streets to Main Streets; homelessness; humane treatment of inmates; quality child care; and human service delivery.

IV. Indicators: Importance & Communication to Citizens

The indicators for these initiatives and sections of the programs above all are essential tools towards the success of these programs. The information that indicators can help produce as a result of programs in the implementation stage does aid in further policy formulation(Beratan et al., 2004: 185). Policy formulation should make indicators more defined(Beratan et al., 2004: 185). This results in open communication pathways amongst stakeholders, cities, and citizens involved in the sustainable development programs(Beratan et al., 2004: 185). An important objective of indicator programs is to form and solidify communication links among agencies, individuals, and organizations with overlapping interests and responsibilities(Beratan et al.,

2004: 185). Participation by all stakeholders involved including the public supports the essential need for the lines of communication to remain open to discuss the importance of indicators when forming policies for programs (Beratan et al., 2004: 185).

Sustainable development programs benefit from stakeholders' participation, but equally as important is the influence of indicators on sustainability goals, identifying program targets, and as assessment tools(Shields et al., 2002: 150). Effective indicators also aid in converting data into meaningful and relevant info thus reducing vague or complex data to allow for rational decisions to be made(Shields et al., 2002: 152~153). Furthermore, broad scale indicators will assist all stakeholders involved in facilitating monitoring, reporting, and policy development(Shields et al., 2002: 154). Overall, the significance of indicators serves three distinct purposes for the sustainable development programs cities put into action after forming policies. These two purposes are measures of progress towards sustainability, and learning about our environment, economy, and society as three interconnected areas(Shields et al., 2002: 158). Lastly, the third purpose of indicators is to ensure both governments and citizens the opportunity to engage in a discussion about the meaning of sustainability in developing common objectives(Shields et al., 2002: 158).

This third purpose of indicators shares a significant connection with social capital because of the interaction between governments

and citizens. As discussed earlier citizens form networks, norms, and trust to fulfill their potential to make a difference in society. Helliwell and Putnam(1995: 297) divide social capital into three distinctive measures known as civic community, institutional performance, and citizen satisfaction. Civic community consists of citizens being informed of current events and political issues, the availability of associations related to the city, and exercising their right to vote(Helliwell and Putnam, 1995: 297). The five cities' indicators above represent civic community and institutional performance because citizens can join groups such as the task forces in Denver.

Another example is allowing citizens to vote on issues in civic forums as part of the Seattle program. Institutional performance indicator is composed of twelve aspects dealing with the comparative performance of regional governments(Helliwell and Putnam, 1995: 297). The most important aspects include timely budgets, legislative innovation, and bureaucratic responsiveness(Helliwell and Putnam, 1995: 297). Assuming that the cities have incorporated timely budgets, and created necessary legislation for their programs to function then the cities may have responded to the need for sustainability. The five cities' program indicators show the cities' interest in serving the needs of the citizens thus ensuring the third measure of Helliwell and Putnam's social capital, citizen satisfaction(Helliwell and Putnam, 1995: 297). The authors propose that the three measures share a causal relationship

with increased citizen satisfaction due to higher levels of civic community and institutional performance(Helliwell and Putnam, 1995: 297).

V. Conclusion and Further Discussion

The indicators discussed in the preceding paragraphs prove that sustainable development and the three measures are areas that cities should be considered strongly. The major implication derived from assessing each city's program indicators are that each city is invested heavily in sustainable development for the benefit of citizens. The five cities' programs that were analyzed and compared produce both different and similar indicators. Each program strives for the continuation of sustainable development by measuring and monitoring these indicators. The programs emphasize this continuation by the methods employed such as the visioning process in Seattle. The civic engagement method used by the Jacksonville program is another example.

Civic engagement is very much evident within each city's sustainable development program. As mentioned above the Seattle program incorporated the visioning process that represents the direct citizen involvement theoretical framework. The citizens' desire to be more immersed in their city's affairs is commendable. Their influence has contributed to the indicators used by the program Towards a Sustainable Seattle. This very same program in the Pacific Northwest is also an example of how the sustainability models with correspon-

ding goals framework is applicable. This program has seven goals that the city wishes to fulfill, and although the main focus of the goals is the environment other areas do benefit such as the economy, health, and resource conservation. These seven goals as discussed earlier in this paper do represent the sustainability models framework. The close connection between the social system goal and both the biological and economic systems' goals represents the framework.

First, the social system goal is represented by each city's invitation to citizens to get involved through civic forums and other mechanisms to influence the direction of the city. This goal also is linked to social capital because the citizens and city form a network to discuss the direction of sustainable development in the city. Citizens are encouraged to make informed decisions about resource use and management. Second, the Seattle program demonstrates a combination of the economic and biological systems' goals because of the interaction between the economy and environment as wanted by the city. Seattle desires to enhance and protect the region's land and bodies of water for future generations. Seattle also uses the natural resources the region produces efficiently thus symbolizing the biological systems' goal. The connection to the economic systems' goal is through the decision to use resources efficiently. This should induce equity in distribution and social welfare by not wasting goods and services.

The other cities, however, have programs that are not as applicable to the sustainability models with corresponding goals framework. The programs in Jacksonville, Cleveland, Denver, and Santa Monica all involve the strategic planning for sustainability framework. The Quality of Life program in Jacksonville has recognizable divisions as analyzed earlier with the human and physical environments. EcoCity Cleveland has a more definable strategic approach with detailed divisions such as: ecological design, smart growth, transportation choices, the bioregion, and health & home practices. The consolidated city-county government within Denver helped push the following initiatives: Greenprint Denver, Justice Center LEED certifications, Metro Vision 2020, Public Works, Healthy People 2010, Transit Station Planning, Blueprint 2002 goals, and Stewardship Programs. The Denver Comprehensive Plan 2000 also allowed for 250 volunteers to participate in eleven task forces to help further the progress of Denver's indicators and initiatives. Finally, the Santa Monica program has incorporated their 66 goals and indicators into eight strategies for city planning and policies that promote sustainability(see Table 3). The city websites for these four cities provide a wealth of information that encourages citizen participation and forming partnerships with both the private and public sectors. Civic engagement is encouraging citizens to become sustainers because citizen can united together around indicators.

Both the UN Agenda 21 and recent literature on sustainability have noted the importance of

Table 3. Civic Engagement and Theoretical Framework in Five Cities

City	Civic Engagement	Theoretical Framework
Seattle	Dept. of Planning and Development's 7 goals(resembles biological, social systems' goals)﹔Visioning process with civic forum	- Sustainability Model with Corresponding Goals - Direct Citizen Involvement
Jacksonville	JCCI﹔Studies such as the Quality Life Progress Report 2007 involve volunteers and other workers	- Strategic Planning - Direct Citizen Involvement
Cleveland	EcoVillages, BLUE Project﹔Ecological Design, the Bioregion, Smart Growth, Transportation Choices & Goals, Health & Home Practices	- Strategic Planning - Direct Citizen Involvement
Denver	Metro Vision 2020, Blueprint Goals 2002, Greenprint Denver, Justice Center LEED Certifications, Mean Streets to Main Streets	- Strategic Planning - Direct Citizen Involvement
Santa Monica	Sustainable Santa Monica﹔Eight strategies for sixty sixindicators	- Strategic Planning

citizen involvement(Geczi, 2007: 379). Certain groups should be more represented (women, youth, and indigenous people) to help further public policy through environmental protection and sound economic decisions(Geczi, 2007: 379). However, there are many challenges because of market inequality and economic stratification for citizen involvement to be a factor in sustainability(Geczi, 2007: 380). These challenges are disseminating relevant information via the Internet or other communication tools, the complexity of sustainability issues, and how public structures or groups can get involved(Geczi, 2007: 380). Deliberation in which policies can be agreed upon for the common good rather than listening to private or individual interests may help(Geczi, 2007: 381). Deliberation, however, will only be feasible if the set of participants included are diverse meaning that citizens are not excluded because of their race, class, gender, etc.(Geczi, 2007: 382). Public involvement in sustainability,

therefore, may be limited to housing, municipal growth, national security, and other public issues in democratic countries(Geczi, 2007: 383).

Therefore, only when national emergencies are prevalent will citizens exert their influence over economic production and resource allocation (Geczi, 2007: 383). This public involvement dilemma has continued because businesses are in control of job production and most economic processes(Geczi, 2007: 383). The government will motivate the private sector to continue working, but because citizens are not aware of this motivation they blame the government for unemployment, depression, inflation, and other economic problems(Geczi, 2007: 383). Public involvement may also be scarce concerning economic production and resource policies. This may be due to the following: the private sector has better access to the government; more resources such as time, wealth, raw materials, and energy; and the ability to dismiss

both corporate accountability and income distribution inequality.

Although this public involvement dilemma is still ongoing there is hope that civic engagement can be the difference. National and research methodologies four years ago, according to Blair(2004: 130), about citizen participation in strategic planning for local development is primarily focused on certain strategies. These strategies are business retention, assisting existing business, and manufacturing & industrial development(Blair, 2004: 130). Second, communities focus on small business growth, aiding service-related business, and facilitating the growth of new entrepreneurs and business(Blair, 2004: 130). Third, communities stress the enhancement or modification of existing facilities and structures(Blair, 2004: 131). Finally, citizens' participation is focused on increasing organizational and leadership development and community marketing(Blair, 2004: 131). Citizens' participation is also focused on the expansion of resources, and both improving and sustaining local community support and attitudes that are beneficial(Blair, 2004: 131). Furthermore, some local governments that have addressed sustainability have formed initiatives(Willis, 2006: 10). These initiatives have incorporated a partnership between citizens and communities by creating long-term visions and action plans to affect sustainable outcomes now and in the future(Willis, 2006: 10).

The partnership between citizens and their communities to form plans for favorable sustainable outcomes is the essence of civic engagement for sustainability. The common link amongst the sustainability definitions is people. This link allows the present generation to fulfill all human needs within moderation while co-existing with the natural world to attain balance thus allowing future generations to live comfortably. The present generation may attempt to pursue that balance through civic engagement. The theoretical frameworks such as sustainability models with corresponding goals, direct citizen involvement, and strategic planning for sustainability thus become important. Each of the five American cities have embraced sustainable development and the three frameworks are applicable to the programs and indicators the cities have formed and implemented. Social capital adds support to the frameworks that cities can use to implement sustainability programs. People, businesses, governments, and other entities forming networks, norms, and trust relationships are essential to society.

These networks, norms, and trust relationships are essential to citizen involvement in sustainable development consisting of indicators within the cities. Social capital can play as a base for citizen participation, and in the same time, citizen participation in indicators can increase social capital. The importance of indicators to sustainable development is substantial because of their influence in policy formulation. Indicators also act as a stimulus for discussion, and as measurements of progress once they are implemented. Furthermore,

discussing and implementing indicators should encourage all stakeholders involved in sustainable development programs to realize and work towards understanding the significant meaning of sustainability. Citizens, the government, and other stakeholders will be able to comprehend more information about the interactions between sustainability and the environment, economy, and society.

This comprehension is fueled by social capital because of the formation of structures, norms, and networks. Thus, measuring social capital in the form of trust between individuals and groups who have formed networks leads to a greater potential to accomplish objectives and goals. If sustainable development within cities is similar to building a house then the importance of indicators would be the foundation, civic engagement would be the walls, and the blueprints would most certainly be social capital. The world should understand that progress has been made by each city with civic engagement. The balance between humans and the natural world through sustainability is still desired and that citizens can help by making a difference through their involvement. There are many other papers and studies that have furthered the progress of sustainability, but this paper stresses the importance of indicators and civic engagement as essential to sustainable development programs.

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