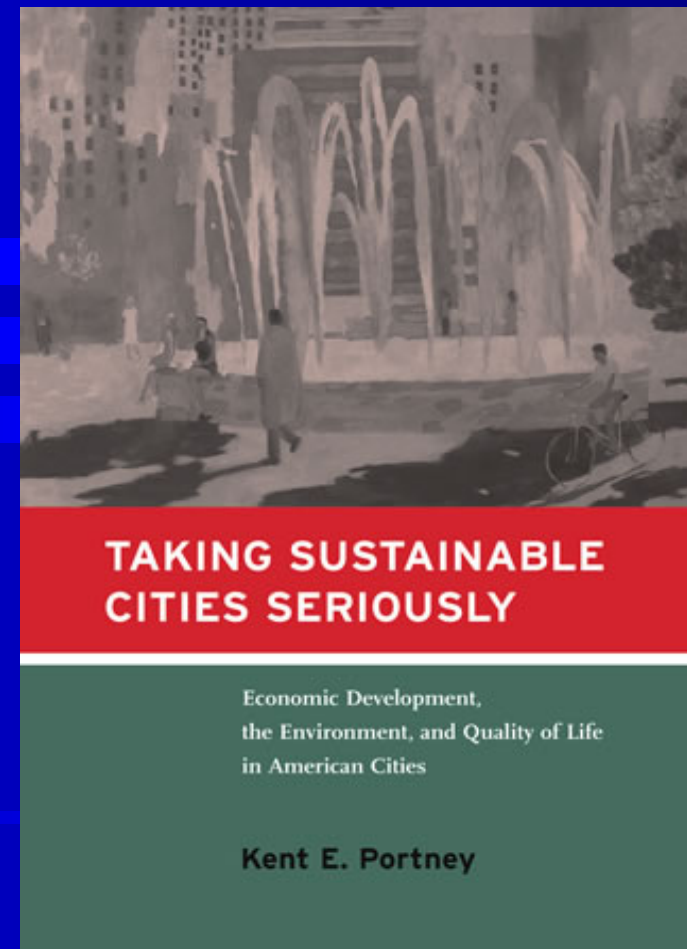


**Taking  
Sustainable  
Cities Seriously:  
*How Cities Choose  
their Paths Towards  
Sustainability***



***Kent E. Portney, Tufts University***

**Prepared for Presentation to the  
Grand Valley State University/Annis Water Resources Institute  
Muskegon, Michigan, May 9, 2006**



# The Cities and Programs Studied

Chattanooga, TN  
Jacksonville, FL  
Orlando, FL  
Tampa, FL

Sustainable Chattanooga  
Jacksonville Indicators Project, Jacksonville Community Council  
Sustainable Communities  
The Tampa/Hillsborough County Sustainable Communities  
Demonstration Project

Seattle, WA  
Olympia, WA  
Portland, OR  
Milwaukee, WI  
Santa Monica, CA  
San Francisco, CA  
San Jose, CA

Sustainable Seattle/The Comprehensive Plan  
Sustainable City Indicators/Sustainable Community Roundtable  
The Comprehensive Plan  
Campaign for Sustainable Milwaukee  
Santa Monica Sustainable City Program  
The Sustainability Plan  
Sustainable City Program (Sustainable City Major Strategy –  
San Jose 2020)

Santa Barbara, CA  
Austin, TX

The South Coast Community Indicators Project  
Sustainable Communities Initiative and Sustainability Indicators  
Project of Hayes, Travis, and Williamson Counties

Indianapolis, IN  
Boulder, CO  
Cambridge, MA  
Boston, MA  
Brookline, MA  
Scottsdale, AZ  
Phoenix, AZ  
Tucson, AZ

IndyEcology  
The Sustainability Program  
Sustainable Cambridge, Cambridge Civic Forum  
Sustainable Boston Initiative  
Comprehensive Plan  
Scottsdale Seeks Sustainability  
Comprehensive Plan, Environmental Element  
The Livable Tucson Vision Program

# More Cities and Programs

<b>Cleveland, OH</b>	<b>Sustainable Cleveland Partnership, EcoCity Cleveland</b>
<b>New Haven, CT</b>	<b>Vision for a Greater New Haven</b>
<b>Albuquerque</b>	<b>Comprehensive Plan, Sustainable Albuquerque Progress Report, The Green Alliance, Albuquerque's Environmental Story</b>
<b>Anchorage</b>	<b>Anchorage 2020 Comprehensive Plan; Healthy Anchorage Indicators Project</b>
<b>Atlanta</b>	<b>Comprehensive Development Plan</b>
<b>Baltimore</b>	<b>Plan Baltimore</b>
<b>Buffalo</b>	<b>The Comprehensive Plan; Green Gold Initiative</b>
<b>Chicago</b>	<b>Chicago Area Central Plan</b>
<b>Denver</b>	<b>Denver Comprehensive Plan 2000</b>
<b>Kansas City</b>	<b>Metro Kansas City Outlook; The Environmental Management System</b>
<b>Grand Rapids</b>	<b>The Grand Rapids Master Plan 2002</b>
<b>Lansing/E. Lansing</b>	<b>Urban Options – Sustainable Lansing</b>
<b>Los Angeles</b>	<b>The General Plan</b>
<b>Minneapolis</b>	<b>The Sustainability Plan</b>
<b>New York</b>	<b>Consolidated Plan 2002; Social and Environmental Indicators Project; Sustainable New York City</b>
<b>Pittsburgh</b>	<b>Sustainable Pittsburgh</b>
<b>Sacramento</b>	<b>Sacramento General Plan</b>
<b>San Diego</b>	<b>Sustainable Communities Program; City of Villages General Plan</b>
<b>St. Louis</b>	<b>Sustainable Neighborhood Program</b>
<b>Washington, D.C.</b>	<b>The Comprehensive Plan; Sustainable Washington Alliance</b>

# The Elements of Taking Sustainable Cities Seriously

## **Sustainable Indicators Project**

- 1. Indicators project active in last five years**
- 2. Indicators progress report in last five years**
- 3. Does indicators project include “action plan” of policies/programs?**

## **"Smart Growth" Activities**

- 4. Eco-industrial park development**
- 5. Cluster or targeted economic development**
- 6. Eco-village project or program**
- 7. Brownfield redevelopment (project or pilot project)**

## **Land Use Planning Programs, Policies, and Zoning**

**8. Zoning used to delineate environmentally sensitive growth areas**

**9. Comprehensive land use plan that includes environmental issues**

**10. Tax incentives for environmentally friendly development**

## **Transportation Planning Programs and Policies**

**11. Operation of public transit (buses and/or trains)**

**12. Limits on downtown parking spaces**

**13. Car pool lanes (diamond or HOV lanes)**

**14. Alternatively fueled city vehicle program**

**15. Bicycle ridership program**

## **Pollution Prevention and Reduction Efforts**

**16. Household solid waste recycling**

**17. Industrial recycling**

**18. Hazardous waste recycling**

**19. Air pollution reduction program (i.e. VOC reduction)**

**20. Recycled product purchasing by city government**

**21. Superfund site remediation**

**22. Asbestos abatement program**

**23. Lead paint abatement program**

## **Energy and Resource Conservation/Efficiency Initiatives**

**24. Green building program**

**25. Renewable energy use by city government**

**26. Energy conservation effort (other than Green building program)**

**27. Alternative energy offered to consumers (solar, wind, biogas, etc.)**

**28. Water conservation program**

## **Organization/Administration/Management/Coordination/Governance**

**29. Single government/nonprofit agency responsible for implementing sustainability**

**30. Part of a citywide comprehensive plan**

**31. Involvement of city/county/metropolitan council**

**32. Involvement of mayor or chief executive officer**

**33. Involvement of the business community (e.g. Chamber of Commerce)**

**34. General public involvement in sustainable cities initiative (public hearings, "visioning" process, neighborhood groups or associations, etc.)**

# **Top Twenty-Four Cities' Scores on the "Taking Sustainable Cities Seriously" Index**

<b>Seattle</b>	<b>30</b>
<b>Denver</b>	<b>29</b>
<b>Albuquerque</b>	<b>27</b>
<b>Los Angeles</b>	<b>27</b>
<b>Minneapolis</b>	<b>27</b>
<b>Boulder</b>	<b>26</b>
<b>San Jose</b>	<b>26</b>
<b>Scottsdale</b>	<b>26</b>
<b>Chicago</b>	<b>26</b>
<b>Portland</b>	<b>25</b>
<b>Santa Monica</b>	<b>25</b>
<b>San Diego</b>	<b>25</b>

<b>San Francisco</b>	<b>23</b>
<b>Kansas City</b>	<b>22</b>
<b>New York City</b>	<b>22</b>
<b>Sacramento</b>	<b>21</b>
<b>Tampa</b>	<b>19</b>
<b>Chattanooga</b>	<b>18</b>
<b>Tucson</b>	<b>18</b>
<b>Anchorage</b>	<b>18</b>
<b>Washington DC</b>	<b>18</b>
<b>Grand Rapids</b>	<b>17</b>
<b>Austin</b>	<b>17</b>
<b>Baltimore</b>	<b>17</b>

## **Bottom Cities' Scores on the "Taking Sustainable Cities Seriously" Index**

<b>Buffalo</b>	<b>17</b>
<b>Cambridge</b>	<b>15</b>
<b>Jacksonville</b>	<b>15</b>
<b>Phoenix</b>	<b>15</b>
<b>Boston</b>	<b>14</b>
<b>Brookline (MA)</b>	<b>14</b>
<b>Cleveland</b>	<b>14</b>
<b>Atlanta</b>	<b>14</b>
<b>Pittsburgh</b>	<b>14</b>

<b>St. Louis</b>	<b>12</b>
<b>Orlando</b>	<b>11</b>
<b>Santa Barbara</b>	<b>10</b>
<b>Milwaukee</b>	<b>9</b>
<b>Indianapolis</b>	<b>9</b>
<b>New Haven</b>	<b>8</b>
<b>Olympia</b>	<b>8</b>
<b>Lansing/East Lansing</b>	<b>7</b>

# Correlations Between the Index of Taking Sustainability Seriously and Demographic Characteristics in Forty-One Cities

Independent Variable	Correlation Coefficient	Significance
Total Population, 2000	.238	.13
Total Population, 1990	.233	.14
Total Population, 1980	.220	.17
Population Change %, 1980 to 1990	.181	.25
Population Change %, 1980 to 2000	.215	.18
Total Land Area (square miles)	.078	.63
Population Density (Population per sq mile)	.147	.36

# Correlations Between the Index of Taking Sustainability Seriously and Local Resource Characteristics in Forty-One Cities

Independent Variable	Correlation Coefficient	Significance
<b>Median Family Income, 1990</b>	.184	.25
<b>Poverty Rate, 1990</b>	-.158	.32
<b>Average Unemployment Rate, 1994-99</b>	.032	.84
<b>Median House Value, 1990</b>	.234	.14
<b>Total City Government Spending, 1997-98</b>	.129	.42
<b>Per Capita Government Spending, 1997-98</b>	.026	.87

# Correlations Between the Index of Taking Sustainability Seriously and Population and Employment Characteristics in Forty-One Cities

<b>Independent Variable</b>	<b>Correlation Coefficient</b>	<b>Significance</b>
<b>Percent African American, 2000</b>	<b>-.355</b>	<b>.02</b>
<b>Percent African American, 1990</b>	<b>-.294</b>	<b>.06</b>
<b>Percent Hispanic, 2000</b>	<b>.289</b>	<b>.07</b>
<b>Percent Hispanic, 1990</b>	<b>.325</b>	<b>.04</b>
<b>Percent Under 18 Years Old, 1990</b>	<b>-.242</b>	<b>.13</b>
<b>Percent Over 65 Years Old, 1990</b>	<b>-.199</b>	<b>.21</b>
<b>Median Age of the Population, 1990</b>	<b>.419</b>	<b>.00</b>
<b>Percent High School Graduates , 1990</b>	<b>.263</b>	<b>.09</b>
<b>Percent Employed in Manufacturing, 2000</b>	<b>-.014</b>	<b>.93</b>
<b>Percent Employed in Service Sector, 2000</b>	<b>-.354</b>	<b>.02</b>

## Correlations Between the Index of Taking Sustainability Seriously and Measures of Environmental Predisposition in Forty-One Cities

Independent Variable	Correlation Coefficient	Significance
Percent Driving Alone to Work, 1990	-.024	.88
Percent Commuters Using Public Trans '90	.059	.71
Days PSI 51+ in 1994	.373	.02
Average PSI during 1994	.395	.01
Total Government Spending on Environment, 1997-98	.249	.12
Per Capita Spending on Environment, 1997	.304	.05
Location on the West Coast (CA, OR, WA)	.261	.10
Avg % Democratic Pres Vote, 1996-00 +	.022	.91
Percent Christian church membership	-.457	.00

+ Based on data for 26 of 41 cities

# OLS Regression Results Showing Correlates of the Taking Sustainability Seriously Index

	$\beta$	SE $\beta$	b	T	Significance
<b>Percent African American, 2000</b>	<b>-.30</b>	<b>.080</b>	<b>-.085</b>	<b>-.376</b>	<b>.709</b>
<b>Median Age, 1990</b>	<b>.576</b>	<b>.401</b>	<b>.205</b>	<b>1.430</b>	<b>.160</b>
<b>Percent Hispanic, 1990</b>	<b>.19</b>	<b>.090</b>	<b>.306</b>	<b>2.059</b>	<b>.048</b>
<b>Percent Employed in Service Sector, 2000</b>	<b>-1.166</b>	<b>.426</b>	<b>-.525</b>	<b>-2.730</b>	<b>.010</b>
<b>Poverty Rate, 1990</b>	<b>.532</b>	<b>.250</b>	<b>.478</b>	<b>2.132</b>	<b>.041</b>
<b>Percent Christian Population, 2004</b>	<b>-.701</b>	<b>.354</b>	<b>-.315</b>	<b>-1.981</b>	<b>.057</b>
<b>Constant</b>	<b>55.85</b>	<b>30.80</b>	<b>----</b>	<b>1.810</b>	<b>.079</b>

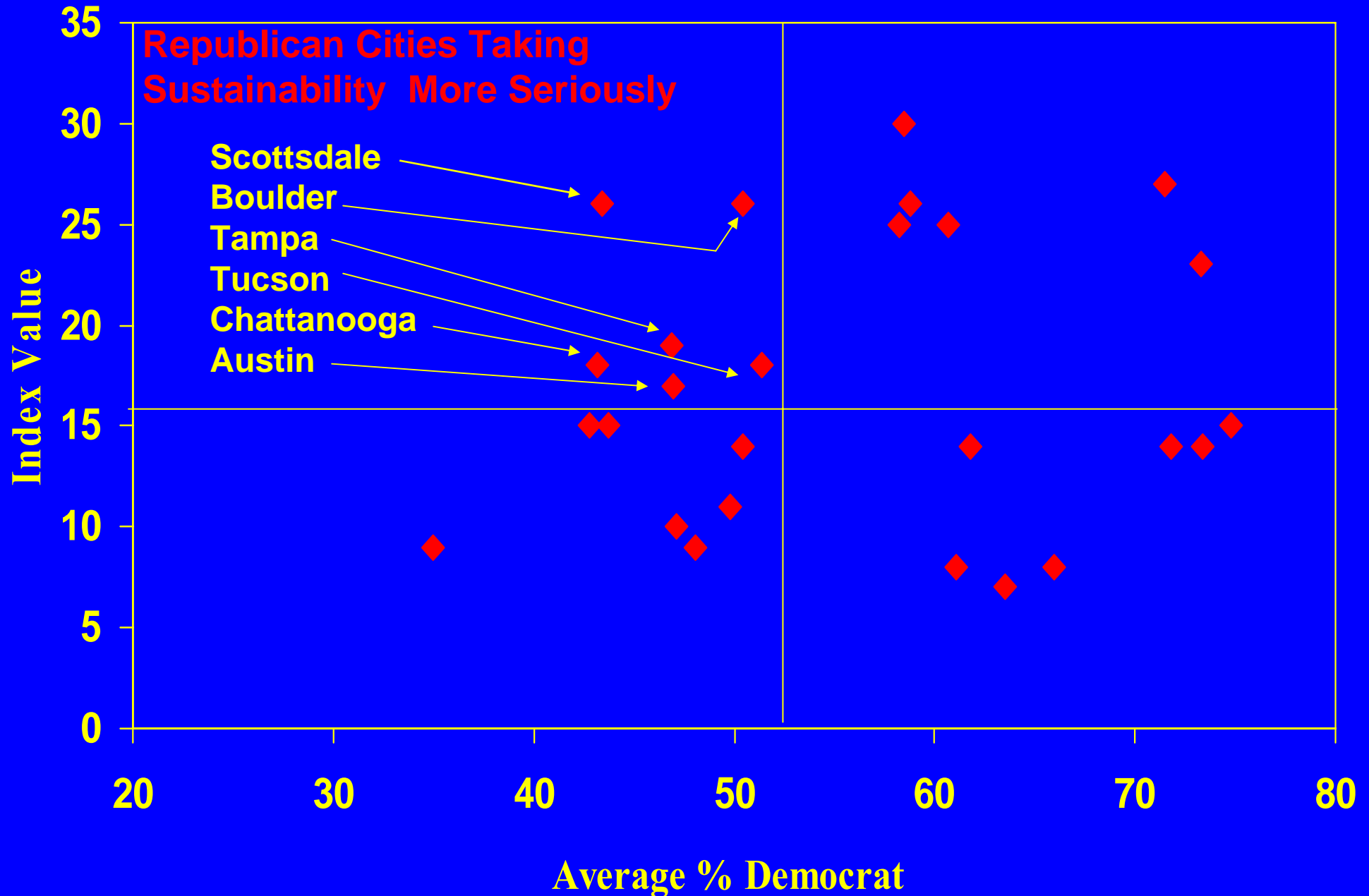
Multiple R      .705      R Square      .498      Adjusted R Square      .403

### Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	6	793.3	132.2
Residual	32	801.0	25.0

F = 5.3      Significance of F = .00

# Plot of Average % Democratic Vote and the Index of Sustainability



# Where Does the Research Go From Here?

- **More cities adopt sustainability programs each year – expand the database**
  - Oakland, Cincinnati, Columbus, and others
- **Better theoretical explanations**
- **Broader array of comparison cities**
- **More elements of what it means to take sustainability seriously – including:**
  - Open space programs
  - Pesticide reduction programs
  - Environmental and social justice components

# A Research Agenda

- **Analysis of the “economics” of sustainability**
  - What are the costs of the programs? (Green Building)
  - How much revenue do cities spend and save?
  - What does the pursuit of sustainability do to growth, especially personal income growth?
  - What do cities give up (opportunity costs)?
- **Analysis of the “benefits” of sustainability programs**
  - How much does the environment actually improve?
  - How much more “livable” do people think the city is?

# The Benefits Side

- **What do all these programs and policies accomplish in terms of tangible results?**
  - **Does the “ecological footprint” of the city get smaller over time?**
  - **Does the quality of the environment improve over time?**
    - **Water quality?**
    - **Air quality?**
    - **Flows of toxic materials and wastes?**
    - **Ecological diversity?**
    - **Residents’ perceptions of livability?**

# Results?

- **Does environmental and social inequity decline?**
- **Is there an aggregate improvement in energy usage? Energy efficiency? P/C electric usage? P/C gasoline consumed?**
- **Is there aggregate improvement in other natural resource usage?**
- **Is there improvement in public health?**

# Questions for Grand Rapids

- **Can sustainability be defined in a way that both improves the bio-physical environment and promotes economic growth at the same time?**
- **In what ways is the business community willing and able to partner with the City to set and accomplish results consistent with this goal?**

# Questions for Grand Rapids

- **What kinds of partnerships make the most sense?**
- **Can the city learn from the experiences of local business and industry?**
- **Can the City's expertise in assessing programs and policies inform the sustainability-related decisions made by the local business community?**