

BRIDGING THE GAP

By Richard Florida and Tracy Gordon

Regions and cities in the United States and around the world are developing new tools and strategies for linking the environment to economic development. For much of the past, it was assumed that environmental progress and economic development were at odds. The environment was viewed as a source of raw materials and energy and a place to dispose of industrial wastes. Often, it was thought that environmental progress generated costs which came at the expense of wealth generation, industrial expansion, and jobs.

But, today, the environment is increasingly seen as a key element of economic development. Innovative cities and regions are forging new strategies for integrating environmental assets into their economic development agendas by targeting environmental technology firms, supporting efforts to implement advanced pollution prevention technology in industry, positioning firms to tap into rapidly growing green markets, and improving their quality of life through investments in their environmental amenities or natural capital. Across the world, many regions have sought to unify their economic development, social, and environmental agendas under the rubric, "sustainable development."

To both help motivate and monitor their ongoing efforts, regions are developing new measures, indicators and benchmarking systems—referred to as environmental/sustainability indicators—to chart their progress toward joint economic, social, and environmental goals. Regions across the United States have aggressively sought to develop these environmental performance/sustainability indicator (ESI) proj-

ects. ("ESI project" refers to the process of developing environmental/sustainability indicators.) These ESI projects are a veritable growth industry. We identified more than 150 ESI projects across the United States in the course of our research.

This article reports the findings of our study on the role of regional ESI projects in the context of broader environmental and economic development. Our study focussed on the following questions:

- What are leading regions doing to integrate their environmental and economic development agendas?
- What is the state-of-the-art in regional environmental/sustainability indicators?
- Who is behind these efforts?
- What sorts of resources are required?
- What are regions trying to measure and why?
- How do these ESI projects fit into larger environmental and regional economic development strategies?
- What can we learn?

To shed light on these questions, our study examined the goals and indicator efforts of 35 larger city and regional ESI projects and conducted focussed case studies of six "leading edge" efforts. We identified ESI projects by contacting national organizations, through bibliographic and internet searches, and a snowball sample developed through ongoing contacts with representatives of regional ESI projects. A "snowball sample" is a sample that is compiled by building contacts one after another through the recommendations of earlier contacts.

We examined how regional ESI projects fit into the broader context of regional development and environmental agendas. These case study regions were identified through a combination of environmental leadership, quality and reputation of the indicator project, and economic and demographic characteristics and included:

- Chattanooga, Tennessee: a nationally recognized environmental region;
- Sierra Nevada, California: which developed an innovative system for environmental performance indicators based on "natural capital";
- Three older industrial regions: Detroit, Cleveland and St. Louis; and

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Economic Development and Environmental Sustainability, Developing Indicators That Work

Regions and cities in the United States and around the world are developing new tools and strategies for linking the environment to economic development. Many have sought to unify their economic development, social, and environmental agendas under the rubric, "sustainable development." To both help motivate and monitor their ongoing efforts, regions are developing new measures, indicators and benchmarking systems—referred to as environmental/sustainability indicators—to chart their progress toward joint economic, social, and environmental goals. This article reports the findings of a study on the role of domestic regional environmental/sustainability indicator (ESI) projects in the context of broader environmental and economic development.

- Phoenix, Arizona: which developed an innovative indicator project focussed on quality of life to deal with problems of growth management and environmental problems associated with significant increases and rapid economic development.

Based upon our assessment we offer the following six key conclusions:

- There is little apparent consistency in the focus of ESI projects or in types of indicators that are employed. Hundreds of individual indicators were identified in just the 35 leading environmental indicator projects. Indicator projects make little effort to generate measures which are useful for either historical time series analysis or inter-regional benchmarking comparisons.
- The most successful regional efforts are those which embed ESI projects within broader strategies for economic and environmental revitalization. Taken alone, indicators play at best a limited role in placing environmental considerations on the agenda of regional policy makers and economic developers.
- Regions should focus their efforts on a smaller number of key value-added indicators.
- Community participation is a critical dimension of an effective regional effort. To be successful, regions must cultivate participation, support and buy-in from key community stakeholder groups and from residents in general.
- Indicators must be tied to broad regional development and environmental visions and goals. ESI projects frequently are seen as an end-in-themselves, operating as isolated special interest projects outside the framework of regional economic development agendas.
- Indicators are technical tools and should be used as such. Indicators cannot substitute for a well-defined regional vision and strategy.

The State of ESI Efforts

Regions across the United States have aggressively sought to develop environmental/sustainability indicators. Such indicator projects are a growth industry. More than 150 indicator projects were identified across the United States, 35 of which were notable projects in large regions. Table 1 provides a listing of sample indicators from the ESI efforts.

There was little apparent consistency in the focus of ESI projects or in types of indicators that are employed. Indicator projects made seemingly little effort to develop standard or consistent measures that are comparable to other regions or on a historical basis. A particular problem was the use of one-of-a-kind indicators. Many regions developed localized indicators of importance to the local community, for example, salmon runs in Washington, or number of community gardens. While such indicators provide some useful information on regional conditions for a given point in time, they do not enable systematic and valid comparisons across regions or on the basis of historical time series. However, one benefit of using such indicators is that they tend to relate more to the

Table 1: Sample Indicators From ESI Projects

- Air Quality: number of days the PSI is in the unhealthful range; average annual level of PM-10 (man-made suspended particles)
- Death by disease
- Income: per capita income
- Innovation: patents awarded per one million residents
- Labor force participation rate
- Environmental disparity
- Health disparity
- Conservation: land area under conservation; conservation spending per capita; public expenditures on parks and open space
- Density: persons per square mile
- Business practices: companies with ISO 14000 certification
- Per capita: resource use (electricity, gas, and water)
- Property values: change in residential property values by neighborhood
- Public participation: percent registered voters: voter participation
- Social capital: participation in civic groups and associations
- Land contamination: pounds of toxic chemicals released in the ground per capita; National priorities list sites per 1,000 sq. miles
- Infant mortality rate
- Water Quality: % of pollutants removed from wastewater
- R&D expenditure per capita
- Unemployment rate
- Value-added: annual value of shipments per manufacturing employee
- Income disparity
- Poverty rate
- Natural capital: investments in natural resource conservation
- Open space: open space per capita
- Park capacity: total metro park acres per 1,000 population; park to land availability ratio
- Env. business practices: companies with pollution prevention/environmental management systems
- Recycling: percent of consumption which is recycled
- Sprawl: change in regional household density
- Population change: by demographic group; racial/ethnic group; due to in- and out-migration; births and deaths

(Source: various indicator projects, including Cleveland's "Rating the Region" report)

(Note: Data for many of these indicators are available in "Rating the Region." [1997])

specific concerns of citizens and thus engage the citizenry more effectively.

Indicator projects in the six benchmark regions were among the most advanced and innovative in the nation. These projects provide useful lessons and examples for the development of technical indicator efforts. Sierra Nevada, for example, developed an innovative framework for environmental/sustainability indicators [See Box 1: Investing in Natural Capital]. Most regional indicator projects compiled simple lists of indicators, providing little in the way of a framework or system for understanding the role or significance of various indicators. The Sierra Nevada "Wealth Index" provides a useful framework for understanding indicators and their interrelationships, categorizing indicators into various forms of capital: financial capital, social capital, and natural capital. This provides a mechanism for seeing environmental assets as a form of capital to be invested in, for connecting environmental assets and investments to broader regional growth strategies, and a language for communicating the importance of environmental issues to regional business leaders.

Projects in two regions—Cleveland and St. Louis—integrated environmental/sustainability indicators with broader regional benchmarking efforts designed to compare regional economic performance to the performance of other regions. The Cleveland report, entitled *Rating the Region*, compared

Box 1: Investing in Natural Capital: Sierra Nevada, California

The Sierra Nevada region is noted for its innovative approach to environmental revitalization and for its innovative use of indicators. The region's development strategy emphasizes environmental amenities and preservation of natural resources. And, it has developed an indicators system which supports and leverages these efforts. Its indicator effort emphasizes investment in natural capital as a key asset for the future.

The Sierra Nevada region spans 400 miles of unbroken mountain range and is comprised of 21 counties along eastern California and part of Nevada. It benefits from extensive natural resources that are major tourist destinations. Sierra Nevada is a fast growth region, its population has almost tripled during the last 25 years, and is projected to continue growing at a faster rate than California.

The Sierra Nevada's economic development strategy is based upon natural amenities and a quality of life that can attract a highly mobile workforce which can live virtually anywhere. The strategy views environmental assets as an economic development tool that can be used to lure high-technology, high-value-added businesses and quality knowledge workers.

The region's strategy explicitly identifies the environment as a source of capital to be invested in—natural capital. The region has identified a concept that views wealth generation coming not only from the accumulation of monetary capital, but other types of capital as well, specifically social and natural or environmental capital.

The Sierra Nevada Business Council has developed its innovative Wealth Index to track progress along these various forms of capital, noting that neglect of social capital, such as a failure to provide first-rate education or to reduce poverty, means many fewer opportunities for businesses and residents to use financial assets. Deteriorating natural assets, such as polluted streams, degraded forests, or lost farmlands, reduce property values, drive away new businesses, and undermine the quality of life for current residents. (Sierra Nevada Wealth Index, 1997)

Leading this strategy is the Sierra Nevada Business Council (SBC). Founded in 1994, in response to the destruction of environmental amenities as a result of rapid population growth, the Business Council is an association of over 450 large and small member businesses focusing on the economic and environmental health of region. The Council conducts research, policy analysis, public education, and leadership development activities.

In September 1995, the Sierra Nevada Business Council engaged a survey research firm to conduct both a 1,000 person voter survey and a companion survey of member businesses for their priorities and concerns for regional development. The majority (82 percent) of member businesses identified quality of life (including access to wildlands and natural beauty of the landscape) as one of the most significant reasons for locating in the region.

The results of these surveys formed the basis for the "Sierra Nevada Wealth Index," a system of 42 indicators of social, natural and financial capital. Next, the region embarked upon a review of the general plans of six counties based upon the wealth index, including a review of best practices around the nation. This led to a planning document called, "Planning for Prosperity: Building Successful Communities in the Sierra Nevada" which defined the agenda for regional planning and growth in the region. The Business Council is currently producing on a new document, "Investing for Prosperity" to guide major regional investment decisions, as well as revising and updating the Wealth Index.

The process is already producing results. The region is experiencing an in-migration of Silicon Valley high-tech companies largely due to the quality of life factors required to attract highly mobile knowledge workers.

the performance of the Cleveland MSA to that of some 13 other MSAs on environmental and land use issues as well as economic, demographic and quality of life factors. The Cleveland report included key measures of environmental performance (e.g. air and water quality and of land-use patterns (e.g. sprawl related density) in its economic benchmark report.

Phoenix developed an innovative system to identify "perceptual" indicators to compare the region's performance in terms of available benchmarking statistics to citizens' perceptions of key issues. This helped identify issues that were of greatest importance to Phoenix residents. In many cases, there were differences between what residents perceived and the reality reflected in regional statistics.

Benchmark regions noted a wide range of technical issues in indicator identification, development and analysis. Key issues revolved around the unavailability of key data and a lack of available research and documentation on reliable indicators. Virtually every benchmark region indicated that data gathering was time consuming and expensive. They also noted a lack of expertise to engage in indicator development and construction. The Sierra Nevada project explicitly noted problems in data gathering and data assembly: "We gathered data from multiple counties; data is collected with different boundaries" (Sierra Nevada Wealth Index). Other regions noted the utility of providing competent technical staff and outside consultants to support community groups in identifying and developing indicators.

Indicators and Regional Strategy

We now turn to the role of ESI projects in broader regional environmental and economic development strategies. Two recent studies provide useful overviews of the issues and activities of regional environmental/ sustainability efforts.

A study by the U.S. Office of the International Council for Local Environmental Initiatives identified 22 communities as "sustainability pioneers", including Chattanooga, Tennessee. The study identified four dimensions for a sustainability pioneer (see, Urban Quality Indicators, Spring 1998):

- substantial involvement by local government,
- significant community participation and stakeholder involvement,
- a comprehensive and integrated approach to environmental, economic and social issues, and
- a long-term program for sustainability, including specific goals, implementation measures, monitoring and evaluation (e.g., audits, indicators, targets).

A 1998 study by Redefining Progress, a San Francisco based organization specializing in environmental/sustainability indicators, surveyed some 150 community indicator projects in the United States (Besleme, 1998) and came to the following key conclusions:

- A wide range of stakeholders were involved with indicator projects, including government agencies (72 percent of projects), academic institutions (62 percent), businesses or business groups (62 percent), private citizens

(58 percent), environmental groups (50 percent), social service agencies (46 percent), foundations (30 percent), youth (18 percent), and other groups (16 percent).

- Projects varied in terms of the scale and extent of their coverage, with a relatively even breakdown of projects by city (33 percent), county (25 percent), region (24 percent), or state (22 percent), and a smaller percentage of projects operating at the neighborhood level (8 percent).
- Roughly half (49 percent) of all projects were initiated by non-governmental organizations, with another 35 percent initiated by local governments.
- Funding came from several sources: primarily by government agencies (66 percent), followed by foundations (34 percent), with a relatively small amount of funding coming from volunteers (5 percent).
- Projects were concerned with four primary issues: quality of life (41 percent), and sustainability (37 percent), followed by community health (10 percent), and benchmarking of service delivery (12 percent).
- The primary objectives were to improve public information and knowledge of issues (64 percent), inform policy decisions (61 percent), and evaluate government performance (32 percent).
- Dissemination took place through various mechanisms: published reports (46 percent), local newspaper coverage (40 percent), participation in conferences (30 percent), internet sites (34 percent), informational forums (26 percent), and broadcast media (25 percent).

Our benchmarking analysis identified two critical dimensions of regional ESI projects:

- developing close ties to regional leadership and economic development agendas, and
- developing mechanisms to ensure extensive and effective community participation.

The following sections discuss these dimensions in greater detail.

Establishing Ties to Regional Agendas and Leadership

The most successful regions made efforts to integrate ESI projects with key regional economic development agendas and to build enduring ties to business and political leadership.

ESI projects in the benchmark regions were designed for various ends. Frequently, ESIs began as community organizing or community awareness efforts. In these cases, ESIs were divorced from broader regional development and/or environmental agendas. In extreme cases, indicator projects operated as isolated "special interest" projects outside the framework of regional economic development agendas.

Effective ESI projects quickly matured into efforts aimed at addressing broad regional issues such as economic development, regional competitiveness and quality-of-life (i.e. sustainable development campaigns). In these cases, organizations associated with ESI projects and environmental issues made explicit efforts to integrate indicator efforts into broader regional development and environmental strategies. Chat-

tanooga, for example, made environmental revitalization and sustainability the centerpiece of its regional economic strategy, developing an indicator project later to assess progress toward regional goals [See Box 1 (cont.): The Sierra Nevada "Wealth Index"]. Sierra Nevada developed its innovative Wealth Index expressly in light of, and to further, clearly defined regional development goals.

Effective ESI projects also developed close ties to regional business and political leadership. In both Chattanooga and Sierra Nevada, leading business organizations, including the Chambers of Commerce were involved in, and continue to work closely with, the indicator project and with organizations spearheading environmental/ sustainability efforts.

In Detroit, key leadership was brought into the ESI process. The vehicle for doing this was participation in a

Box 1 (Cont.): The Sierra Nevada "Wealth Index"

WHAT IS WEALTH

"Wealth is not just monetary worth but the different types of capital that, taken together, make up the real riches of a region... To understand the economy of the Sierra Nevada, it is important to understand and assess three types of wealth: 1) social or human capital; 2) natural or natural resource capital; and 3) financial capital. Each must be conserved and increased if the Sierra Nevada economy is to be prosperous, stable and sustainable."

"Each form of capital supports the economy; the diminishment of any one will tend to devalue each of the others. Neglect of social capital, such as a failure to provide first-rate education or to reduce poverty, means many fewer opportunities for businesses and residents to use financial assets. Deteriorating natural assets... reduce property values, drive away new businesses, and undermine the quality of life for current residents. Low financial capital... leads to social instability and a vulnerability to economic cycles."

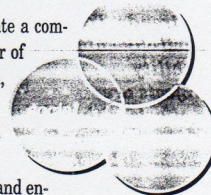
"By understanding and tracking all three forms of capital—social, natural, and financial—the Sierra Nevada Wealth Index presents a more integrated, accurate, and useful portrait of our region's economy."

HOW TO USE THE SIERRA NEVADA WEALTH INDEX

"The Sierra Nevada Wealth Index gives public servants and private citizens throughout the region a powerful tool for decision making. The Capital Investment Diagram pictured below demonstrates the relationship between social, natural, and financial capital. While some public and private investment decisions increase only one form of capital, and actually diminish the other forms of capital, decision-makers can gain the most benefit by making investments that increase or conserve at least two forms of capital while not diminishing the third."

"For example: if a business owner decides to locate a commercial building on an underutilized lot at the center of town, instead of on agricultural lands outside of town, he or she:

- builds financial capital by reducing public and private service costs;
- builds social capital by reducing commute times and enhancing the social vitality of the community; and maintains natural capital by not reducing the size and productivity of the working agricultural landscape."



Regions should integrate ESI projects with other, ongoing regional efforts to benchmark economic and demographic trends. Too frequently environmental and sustainability indicator projects are stand-alone efforts with little influence on regional economic benchmarking.

summit meeting for ESIs with the President's Council on Sustainable Development (PCSD) in May 1999, which placed environmental and sustainability issues on the agenda of leading business and political groups. Initially, the ESI project—the Sustainable Renaissance Project—grew up on its own. Even during its earliest phases, however, ties to leading political and business organizations were sought. Representatives from the Chamber of Commerce and governmental groups were invited to meetings and both formal and informal lines of communication were established. Later, the organization of leading CEOs, "Detroit Renaissance"—and key corporations such as General Motors—were involved in the planning effort for the national summit.

In order for ESI projects to be useful, they must eventually effect changes in policies and practices of agencies, institutions, and individuals. While most ESI efforts were able to spark discussions, few were actually able to effect changes in policies and practices. Two projects, however, stand out on this dimension.

The Sierra Nevada project had a significant impact on land use policies. The project identified 10 guiding land-use principles from the community responses. It then published a guidebook, "Planning for Prosperity," comparing these principles to the general plans of six counties. One county is already revising its plan and another is establishing a campaign for preservation of open space [See Box 1: Investing in Natural Capital].

Chattanooga developed its ESI project specifically to track progress toward well-defined environmental and economic development goals [see Box: Sustainability as Economic Strategy]. The region established its ESI program only after these goals were well-established, and utilizes indicators to track and monitor progress toward regional objectives.

Community Involvement and Participation

A second, equally critical issue, revolved around ensuring effective and enduring community involvement and participation. A key issue for all of the benchmark regions was developing mechanisms to obtain a balance between involving regional leadership and ensuring that community groups are both involved and have a stake in the process. The ESIs found that obtaining buy-in from the community was essential to the long-run success of indicator efforts.

St. Louis embarked upon its project in 1992 by administering a survey to 600 adults and 2200 students from urban, suburban and rural areas to obtain a wide variety of perspectives. Detroit employed a matrix organizational structure to involve representatives of community groups and organizations in its committee process.

Chattanooga established its "Vision 2000" process involving some 1,700 citizens. The process identified 40 goals, outlining a so-called "Commitment Portfolio" for the region. The goals stressed economic revitalization through environmental progress and sustainability—to rebuild the Chattanooga economy around environmental renewal and envi-

ronmental industry while improving the quality of life for residents. Ten years later, 85 percent of "Vision 2000's" 40 goals were accomplished, with a reported 2,000 projects, generating 1,381 permanent jobs, 7,300 temporary construction jobs, and \$793 million in new investment predominantly from the private sector. In 1993, the city revisited this agenda with a "Re Vision 2000" process in which 3,000 people participated to develop a renewed vision for economic development, employment, education and the environment.

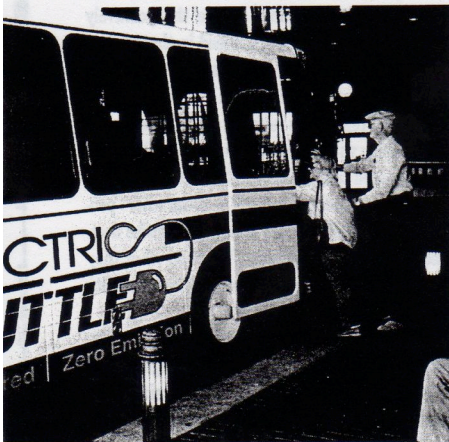
In 1996, an even broader community planning process, "Futurescape" was launched. The process revolved around a "visual preference survey" that was conducted through the use of a video tape to elicit community perceptions about land use development in and around Chattanooga. The process involved more than 100 community meetings. Further, the video aired on the local cable channel and was made available for rent at video stores. More than 2,500 citizens viewed the tape and rated various types of development. The results of the survey indicated that residents valued the natural environment, pedestrian-friendly streets, public transit, and interesting architecture, and these values were then incorporated into long-range plans and regulations designed to reflect resident preferences. As a result of these efforts, Chattanooga now enjoys a "public process culture" that positively influences the way matters are addressed in that region.

Phoenix developed its ESI project in part to measure citizen perceptions of the region's position on key issues. For example, the regional report lists resident perceptions of population growth along with the actual statistics on change in population compared to nine MSAs. This enabled a fact-based discussion to ensue, particularly in areas where perceptions differ from reality. Since most people make decisions, especially migration decisions, based on what they perceive to be true, discovering a difference between reality and perception was valuable information.

Benchmark regions used a variety of strategies to disseminate their results. Virtually all benchmark regions published reports. Some regions developed booklet size newspaper inserts or published reports in newspaper format. Others created internet sites to post information and updates. Still others developed innovative mechanisms for making information both more user friendly and more widely available. The St. Louis project developed a partnership with a local business journal to cover a new indicator every week. Also, another ESI project developed an "adopt an indicator" program to encourage community involvement. The adoption packet includes suggestions that the business community, nonprofits and individuals can take to help meet the goals set by the community for each indicator. For example, an individual adopting the "Open Space indicator" can donate land or money for that purpose, plant a tree, or any one of a list of other activities (Urban Quality Indicators, Summer 1997).

Conclusions and Recommendations

This article has examined regional ESI projects, focussing on the ways that these ESI projects fit into broader regional



The Tennessee Aquarium (top) in Chattanooga was built on industrial wasteland by the Tennessee River. The facility is dedicated to the understanding, conservation and enjoyment of rivers. It generated more than \$133 million in spending its first year. With 15 electric buses, Chattanooga boasts the largest fleet of these vehicles in the U.S. The environmentally friendly mode of transportation has become a model for electric buses; hundreds of representatives from around the world have visited the city to study its electric transit project.

environmental and economic development strategies. Our main findings can be summarized in terms of five key points.

- ESI projects differ dramatically across regions in terms of their leadership, organizational structure, and processes, as well as in the categories and types of indicators that are developed.
- There is little apparent consistency in the focus of ESI projects or in types of indicators that are employed.

Box 2: Sustainability as Economic Strategy: Chattanooga

Chattanooga, Tennessee, has made environmental performance and sustainability the centerpiece of its regional strategy and is frequently referred to as The Sustainable City. It is often said that the region's economic development agenda IS sustainability.

The city was named tenth most "enlightened" city for being a "sustainable blue collar town," (Urban Quality Indicators, Summer 1997), and was highlighted as one of the best places to live by Partners for Livable Places in 1986 and 1994. Once a dirty city with miles of contaminated riverfront, the region has sought to eliminate pollution and redevelop its riverfront as a recreation area, including the world's largest freshwater aquarium. The public transit system utilizes electric buses to reduce air pollution and congestion. Plus, the buses are produced locally, opening up export markets for regional businesses and creating jobs.

The region is building a high-speed rail corridor to downtown Atlanta, which will result in a 45 minute commute. Coupled with improvements in the local environment and quality of life, this will spur further revitalization in the emerging "Chatlanta" metropolitan corridor.

Chattanooga does not see indicators as an end-in-themselves. Rather the region has developed indicators in line with, and as a complement to, the broader regional development agenda. Chattanooga began with a process for developing a vision and strategy for its regional development based around the environment, environmental technology and industry, quality of life and sustainable development. It then developed indicators to track and monitor progress toward those goals.

The region has undertaken several indicator projects. The first by the River Valley Partners emphasized economic vitality. A second project, "Life in Hamilton County" focused on quality of life and was accomplished by the Metro Council, (an economic development organization). A third indicator project is now being undertaken by the Chattanooga Institute for Sustainability, which is housed under the same umbrella as the Chattanooga Chamber of Commerce. This project is a broad effort involving local agencies and a Federal Government Environmental team that is working on a "southern assessment" of the natural resources in the Southern Appalachian region.

Chattanooga also emphasizes community involvement and participation. The region has developed various mechanisms, including its Futurescape visioning process involving the use of videos to elicit citizen preferences for land use, and to encourage participation. There is a minimum of between two and five public forums on any emerging regional issues. The region has invested heavily in community participation to cultivate both understanding and buy-in by local citizens. Doing so has required considerable resources, including the use of trained facilitators to manage the community involvement process. Citizens involved in the various public processes over the last decade have taken those skills back to their own boardrooms, committees and meetings. According to the leaders of Chattanooga's effort, a new culture of public involvement has emerged to give continued life to the region's efforts at using the environment as a mechanism for achieving both competitive advantage and an improved quality of life.

Hundreds of individual indicators were identified in just the 35 leading environmental indicator projects. Indicator projects make little effort to generate measures which are useful for either historical time series analysis or inter-regional benchmarking comparisons.

- ESI projects were designed for various ends. In many regions, indicators were used as tools for community organizing or community awareness. In such circumstances, ESI projects were typically divorced from broader regional development and/or environmental agendas. A smaller number of regions have made explicit efforts to integrate ESI efforts into broader regional development and environmental strategies.
- Taken alone, indicators play at best a limited role in placing environmental considerations on the agenda of regional policy makers and economic developers.
- The most successful regional efforts are those which embed ESI projects within broader strategies for economic and environmental revitalization. Chattanooga,

Linking the Environment to the New Economy: Sustainable Pittsburgh

Sustainable Pittsburgh is a recent effort to broaden the economic development strategy in the greater Pittsburgh region to include environmental and community issues. For the past two decades, the greater Pittsburgh has been trying to navigate the transition from the "old" heavy manufacturing economy to a "new economy" based around high technology, knowledge-based industries. The region has long been a national leader in downtown revitalization, dubbed the "Renaissance," spearheaded by the Allegheny Conference on Community Development in the 1950s and 1960s. The Renaissance was at its core an initiative to clean up the city and make it a more attractive place for executive and management talent, and included sweeping smoke control and flood control measures, along with its well-known downtown revitalization effort.

In the mid-1980s, the region developed a technology-based economic development strategy to support the transfer of technology from its major research universities—Carnegie Mellon University and the University of Pittsburgh. These efforts have led to the emergence of a growing network of regional venture capital and entrepreneurial, high-tech firms. During the 1990s, a series of efforts were initiated to craft a new vision for the region and broaden its base of leadership support, notably the creation of the Working Together Consortium—a broad based group of leaders from the business, technology, financial, civic, political, labor and academic communities. All the while, the region continued to work on environmental remediation and cleanup efforts, including the development of a major high-technology office complex on old brownfield sites bordering the Monongahela River. Still, a schism of sorts existed between the region's economic de-

velopment efforts and its environmental strategy.

Sustainable Pittsburgh was created in the mid-1990s as a mechanism for linking the region's evolving economic, environmental and community development strategies in a more holistic and integrated vision of the region's future. Sustainable Pittsburgh was established as part of the Pittsburgh Technology Council, a 1,700-member business organization of entrepreneurial high-tech companies, with financial backing from the Heinz Endowments. The effort is committed to embedding environmental and community development issues into the region's evolving economic development strategy and to creating a more inclusive and participatory leadership structure that can harness the collective energy of broad segments of the population.

Sustainable Pittsburgh hosted a visit by the President's Council on Sustainable Development in September 1998 and launched a major community goals and indicators' effort in early 1999. As part of this effort, Sustainable Pittsburgh organized 250 community leaders to identify and measure key goals and indicators for the region's long term prosperity and quality of life. Outside consultants and graduate students from Carnegie Mellon University and the region's other universities provided technical assistance in the development of economic, environmental, and community indicators. Sustainable Pittsburgh is now working with regional and national organizations to link ecological and economic development issues, help firms make the shift to advanced environmental manufacturing practices, promote smart growth, and develop natural and recreational amenities which can make the region more attractive to knowledge workers.

Indicators are technical tools and should be used as such. Indicators cannot substitute for a well-defined regional vision and strategy; they are technical "measurement" tools best suited for monitoring and evaluating performance toward clearly defined goals.

Tennessee, for example made environmental revitalization and sustainability the centerpiece of its regional economic strategy; indicators are used to assess progress toward regional goals. Sierra Nevada developed an innovative indicator system that is linked directly to regional development goals. It does so by evaluating the region's ability to effectively utilize its various sources of capital, from financial and human capital to social and natural capital. Phoenix developed a set of perceptual indicators to identify issues of importance to citizens and voters.

Based on these findings, we offer five key recommendations to regions that are currently engaged in, or considering, indicator projects.

- Regions should focus their efforts on a smaller number of key value-added indicators. Indicator efforts are currently too broad and unfocused. The number of indicators can and should be reduced. Specifically, regions are advised to focus attention on a more limited number of indicators that measure key trends. Indicator projects can also benefit from combining statistics comparing

regional performance with measures of citizens' perceptions on key issues. Greater effort should be placed into developing environmental and sustainability performance indicators that are comparative and available on time series data.

- Regions should integrate ESI projects with other, ongoing regional efforts to benchmark economic and demographic trends. Too frequently environmental and sustainability indicator projects are stand-alone efforts with little influence on regional economic benchmarking. This limits their utility and effectiveness in influencing regional programs and policies. Getting just a few value-added environmental indicators on the agenda of regional economic benchmarking and competitiveness efforts is likely to be of greater value than developing list of hundreds of specialized sustainability measures which stand outside the regional development agenda.
- Indicators must be tied to broad regional development and environmental visions and goals. ESI projects frequently are seen as an end-in-themselves, operating as isolated special interest projects outside the framework



The Three Rivers Rowing Association in Pittsburgh is located on Washington's Landing, an island in the Allegheny River. A brownfield redevelopment site, the island now boasts trails, tennis courts and expensive homes.

of regional economic development agendas. To be effective indicator efforts must be tied to the regional vision and strategies, integrated with key regional organizations, and used to objectively track regional progress toward those goals. Indicator projects must be seamlessly integrated into broader regional environmental and economic development goals.

- **Community participation** is a critical dimension of an effective regional effort. To be successful, regions must cultivate participation, support and buy-in from key community stakeholder groups and from residents in general. ESI projects require sufficient commitment of resources in the form of time, people and money. Indicators should reflect the needs and concerns of the community and its residents. To do so, indicator projects should include indicators of resident perceptions and priorities.
- **Indicators are technical tools** and should be used as such. Indicators cannot substitute for a well-defined regional vision and strategy; they are technical "measurement" tools best suited for monitoring and evaluating performance toward clearly defined goals. Regional organizations should concentrate their efforts on developing and establishing consensus around these broad visions and goals. They should be provided with competent technical support to develop measurements and continuously track performance toward those goals.

We applaud the trend toward developing systematic indicators and measurements for assessing regional progress toward environmental and economic goals. These efforts are in sync with the trend in leading edge organizations across the world to develop systematic goals and objectives, and to track and measure progress toward those goals. They are also an essential piece of the broader movement to improve the efficiency and effectiveness of government and public policy. We hope our modest effort contributes to a better understanding of these significant projects, spurs additional research on these issues, and can eventually help inform more successful strategies for generating regional economic and ecological vitality.

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