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Sustainable Local Communities and Global Environmental Change

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세계의 환경변화와 지속가능한 지역공동체

Abstract : This articles explores the issues of sustainability in the context of urban communities in the United States. After an overview of the history on the concept of sustainable development it present a series of examples of how local communities and neighborhoods can implement programs that increase their sustainability. These case studies range from activities of homeowners, through local government and metro area planning activities.

Finally information on investment in residential properties in the City of St Paul is used as a measure of residential confidence in the sustainability of the neighborhoods.

Key Words : Urban, Sustainability, North America, Development, Environmentalism

요약 : 1987년 UN산하의 Bruntland commission이라고 칭하는 환경과 개발위원회가 구성된 이래, 환경적 관심과 경제적 관심은 현재의 세계를 변화시키고 있는 상호 보완적인 힘으로 피악되어 왔다. 세대간의 자원이용과 환경 변화의 형평성을 기하여야 한다는 점과 개인의 이익추구가 단기적 시각에서 이루어기 때문에 미래 세대의 수요를 반영하지 못하고 있다는 점에서 '환경과 개발위원회'는 자원배분에 대한 근본적인 변화를 유도하기 위해 "지속가능한 개발"의 개념을 제시하였다.

1992년의 'Earth Summit'에서는 환경과 경제와의 상호연결성을 강조하고 지속 가능한 개발의 개념을 정의하면서 정태적인 평형점이 아닌, 자원의 개발, 투자 유치, 과학기술의 발달 및 제도적 변화에서 현재 뿐 이니라 미래의 지속적 요구에 부응하는 변화의 과정으로서 파악하였다. 미국에서 지속가능한 공동체와 도시의 지속가능한 개발은 여러 논의를 거치면서 다양하게 정의되었지만. 지속가능성을 위한 공통적 속성은 다음의 4가지로 정리 할 수있다. 첫째, 경제적 성장의 수혜와 분배에서의 형평성이 요구된다 형평성이란 모든사람이 동일한 자원을 가져야 한다는 것이 아니라 사회의 극빈층과 가장 부유한층의 격차를 최소화 하는 관점에서 이해하여야 한다 두 번째 지속가능한 공동체의 구성요소는 모든 사람이 인간의 기초수요의 사회정의, 인권을 누릴 수 있어야 한다. 셋째는 공동체가 경제적으로 자립할 수 있어야 한다는 것이다. 넷째는 환경 피괴를 방지하야 한다는 것이다 이것은 인간이 환경에 미치는 영향력을 정확히 측정할 수 있는 수단을 요구하며 미국의 경우 '지역사회의 생태적 효과(communities ecological footprint)'로 측정되고 있다. 즉 지속가능성의 원칙은 정치적, 사회적, 경제적 환경적 측면으로 요약된다. 본 논문은 지리학자들이 지속가능한 지역사회를 발전시키기 위해 수행한 지역공동체에 대한 연구 사례를 제시하였다

주요어 도시, 지속성, 북미, 개발, 환경결정론

Over a decade ago in 1987, the World Commission on Environment and Development established by the United Nations and commonly referred to as the Bruntland Commission after its Chair, Gro Bruntland of Norway, articulated the belief that environmental concerns and economic concerns can and must be mutually supportive. The Commission pointed out many interdependent forces that shape our world. It specifically mentioned the interlocked nature of the world economy and ecology, the need for *intergenerational equity* with respect to the use of resources and environmental modifications, and the fact that most private and public decisions do not reflect a

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concern for future generations. Basically, we think and act for the short term. Thus, this Commission launched the group of ideas we know as *sustainable development*[1].

At the Earth Summit in 1992, the link between the environment and economics was emphasized and the concept of sustainable development was defined as a process of change in which the exploitation of resources, the direction of investments, the orientation of technology development and institutional change are made consistent with the future as well as present needs. Sustainable development was not to be thought of as a constant state of harmony, akin the ancient notion of a Garden of Eden found in Judaic, Christian and Islamic cultures, but a sequence of changes.

Sustainable communities or urban sustainability is a concept that has provoked a host of symposiums and discussion groups in the United States. Although there are many definitions of the term in current use by geographers, urban planners and those studying the formation of government policy, all people seem to agree that to be sustainable or for a community to survive indefinitely, it must have four things. First, there must be equity in the distribution of the benefits of economic growth. It is important to note here that in this context equity or an equitable distribution does not mean everyone gets an equal share. It does mean however, that there are not gigantic differences between the rich and the rest of the population. The second factor sustainable communities have is all people have access to basic human needs, social justice and human rights. Third, the community must be able to maintain itself economically and it can not depend upon transfer of wealth from other places or from future generations. Fourth, it must not degrade the environment. In order to live, people consume what Earth offers. Therefore, although each one of us has an impact on the environment and our combined impact is greater than the sum of our individual needs, we do not have a problem if we do not take more from the environment than Earth has to offer. We must develop accurate measures of our individual and community impact. These four aspects or principles of sustainability can be summarized as political, social, economic, and environmental.

The sustainability movement has the potential to unite the environmental movement, economic development organizations, and social justice pressure groups in ways long advocated but never realized. The so called "Green Parties" of Europe are one of the primary political forces associated with sustainability. It is important to distinguish between the interest many geographers have in studying global change and the sustainability movement. Sustainability involves human systems of political, economic and social justice. Members of communities create these systems for themselves. Therefore, when one becomes involved in the study of sustainability, the geographer must be prepared to get involved in local politics. One can not make a detached study of the sustainability of his or her community in the way one can study an environmental degradation in another part of the world. There are no others to blame if one's home community is not sustainable.

Needless to say, a concept as broad as sustainability has invited much discussion and criticism. Most commentators find it too general and difficult to apply worldwide. The concept of intergenerational responsibility is also vague. Does it mean around five generations or indefinitely? There is also skepticism about the assumed interrelationship between a healthy economy and a healthy environment. Nonetheless, at the core of this concept lie the ideas of mutual respect and stewardship that resonate with our common sense. The general concept can be used to develop a template that, when applied to local or regional activities, provides an effective guide to sustainable

living. The elements of this template have been summarized as: 1) respect and care for the community of life; 2) improving the quality of human life; 3) conserving Earth's vitality and diversity; 4) minimizing the depletion of nonrenewable resources; 5) keeping within Earth' s carrying capacity; 6) changing personal attitudes and practices; 7) enabling communities to care for their own environments; 8) providing national frameworks for integrating development and conservation, and 9) creating a global alliance for global sustainability

It is possible to identify several broad categories of human activity that de-stabilize urban communities. The first is the impact of industrial development with its associated hazardous wastes. There are about 1169 sites that are on the so-called "super fund list" in the Untied States. These are places which have major concentrations of hazardous wastes and must be cleaned up.

Industrial decline also causes changes that destroy a community's sustainability. The resultant out migration of population when jobs disappear is well documented. Another concern is the abandonment of industrial sites while elsewhere other land is being developed for new industries. There is clearly a need to recycle the devastated industrial sites to conserve the land resource and enable people to support the communities of the so-called rust belt in the United States and Canada.

In addition to the impacts of industrialization on sustainability, mode of transportation has a huge impact on the long-term viabilities of communities. Transportation is a prime consumer of energy, most of which is derived from petroleum, a nonrenewable resource. Its rapid rate of consumption is related to the high per capita use of automobiles. The issue of sustainability is not the absolute supply of petroleum in the world, but rather the political instability of the areas where the largest oil reserves are located. The availability of oil is not guaranteed, as the post Cold War geopolitics continue to unfold. The second issue resulting from the high rate of automobiles per capita is the pollution caused by the emissions of the internal combustion engine.

The transportation system in North America is intended to maintain accessibility to employment, shopping, schools and entertainment, but it uses the mode that is the least conducive to sustainable communities At present, the North American public prefers privacy, convenience and comfort that is available with the automobile. However, many observers argue that the taxes paid on gasoline and road use do not reflect the aggregate costs of the pollution and infrastructure associated with extensive use of cars. A 1991 study in Canada indicated that if gasoline taxes were used to pay for the cost of the system, the price at the pump would be about $22.70 a gallon rather than the $1.50 then paid. Other developed countries pay much higher gasoline taxes and demand cars to be more fuel efficient[2]. The voters in the United States have not understood the real cost of our system and will not support more realistic taxes. They prefer short term comfort to long term sustainability.

Because democracy makes changing behavior via taxation extremely difficult, a great deal of effort is devoted to the development of alternative motor vehicle power systems. The most common of these are battery or fuel cell powered. California is leading the effort to produce alternative fuels and has established a law that will require 10 percent of all new cars sold in the state to be at the zero emission level by the year 2005. This will undoubtedly create a vast change in the impact of automobiles on North America. The Californians are enforcing this change because of the terrible smog produced by the combination of high exhaust emissions and high levels of solar energy which has interfered with the short-term comfort of the Californians. But we can not wait until everyone's short-term comfort level is destroyed before we act.

1. Examples of the move toward sustainability

It is important to examine what sorts of results the sustainability movement has had and how those experiences have worked their way into geography and geographic instruction. The conversion of gasoline powered automobiles to electricity will not address the issue of urban sprawl. The deconcentrated, low-density nature of urban areas provides a social environment that works against sustainability. In the suburbs developed during the streetcar era from the 1880 and 1990, the average building lot was 3000 square feet. In the auto suburbs of the 1920s, it was 5,000 square feet. In the 1950s, the average middle class subdivision had lots between 4000 and 8000 square feet. The expansion of building lots over the past century has produced a landscape that is very expensive to operate. The irony of this situation is that taxes on the low density and the expensive to maintain portions of the metro area are most often lower that those in the higher density older sections of the city. The modern polycentric city has resulted from a distorted pricing system. The price of using the urban fringe has been set too low.

The design solution to this is called re-compacting. However, there are so many political barriers to the idea that no one really dares advocate it. Instead we discuss the so- called "new urbanism" which advocates building on the urban fringe in ways that produce a more compact type of community, and where possible, increasing the density of suburbs[3].

In recent years there has been much improvement in some aspects of the urban environment because we have moved toward cleaner industrial activities. Scrubbers have been placed on smokestacks, pollution-control equipment has been mandated for all cars, waste disposal sites have become more regulated, and environmental monitoring has been improved.

However, the road to sustainable living in North America will be bumpy and filled with many twists and turns, because the urban form is now virtually dependent upon motor vehicles and high use of energy. Furthermore, the miles driven per person continues to increase. The situation is going from bad to worse.

If sustainable urban development is to occur in the United States, an integrated set of pricing and planning policies directed toward the promotion of urban re-compaction must replace the conglomeration of policies that foster continuing deconcentration

2. Achieving these new policies will not be easy

Experience of the past half century shows that the environmentalists' views can not be forced on the general population of North America. It is also difficult to persuade the population of the validity of the environmentalists views about the changing global environment. Because the levels of geographical literacy are so low that the population does not accept the assertion that their behavior affects the global environment. If the new policies toward pricing are going to come into being, they will have to come as a result in changes in other behaviors and as a result of a change in the way North Americans perceive or understand their urban homes. In short, politics will not achieve our goal. Only education has a chance to succeed in developing a new appreciation for sustainable communities. Geographers must step forward and assume a major role in the education process.

The sage advise " think globally, act locally" fits the professional life of geographers perfectly. We more than any other group of academics are accustomed to think and work at various scales. The leaders of the Korean Geographical Society are examples of such scholars. Your colleagues have

produced excellent studies of city structure, urban dynamics, the national finance structure and flows of capital, international trade and numerous studies of environmental issues at all scales from local to global.

Therefore, it comes as no surprise to see that geographers are taking positions on such global issues as the increases in CO^2 and other greenhouse gases, the deforestation of the tropics, over-fishing of the seas, exhaustion of the fossil fuel reserves, decertification and many other issues. Nor is it surprising to see that some geographers, but not as many as I would like, have become involved in the debate over the definition and creation of sustainable communities.

For me, the most significant part of the phrase, "think globally, act locally" is the word "act." The advice is not just to research and publish in academic journals or turn your findings over to a government agency. It admonishes us to do something ourselves. We must take responsibility for the world around us, by starting with the local areas - our home. If geographers do not take responsibility, how can we expect other people to care about the physical environment and communities? In addition, we must educate our fellow citizens about the way their activities affect the home area before they can think about he their impact on global systems. In this essay I would like to discuss a few cases that illustrate the efforts people are making to cope with the great issues of our time.

These examples of efforts to create sustainable communities are all drawn from the Twin Cities of St. Paul and Minneapolis, the primate city of Minnesota, North and Dakota and eastern Montana. Its population is 2.5 million and has a very low population density. In fact it is the lowest of the largest 25 metro areas in the United States. Although the sprawl of Southern California, Phoenix and Florida is given more media coverage, the Twin Cites has been characterized by a relentless expansion since it was first formed. Some of this expansion can be attributed to the fact that at first there were two independent cities that grew together. Secondly, the nearby agricultural landscape and forested wild lands to the north has allowed the population to maintain a self image of a suburban and outdoor based lifestyle. In 1953 the country' s first enclosed shopping mall, Southdale, was finished and in 1965 a plan was adopted that promoted a multiple centered Metro area. Now the Twin Cities is home to the Mall of America, reputedly the largest shopping mall in the United States(*Illustration #1*).

As the metro area expanded ever outward following state highways and then freeways, large areas of agriculture land were converted to housing. Marshes and wetlands were drained and the natural vegetation altered. Gradually a reaction developed to the sprawl, and the regional planning agency was pressured by groups such as the Land Stewardship Council to adopt a Metropolitan

Illustration #1

Mall of America, Bloomington, Minnesota. This mall in the inner suburbs of the Twin Cities was built on the site of an abandoned sports stadium. is reputed to be the largest enclosed shopping mall in the United States. In addition to shops it includes an amusement park, movie theaters, an area for public performances, bars, and restaurants. It epitomizes the trend toward development of integrated shopping and recreation facilities along freeways. It is located within two miles of the airport. Large numbers of travelers shop in the mall.

Urban Services Area(MUSA) with a line or limit. Inside this line sewers are provided by the government. Outside the line residents must provide on-site disposal of all wastes, and no sewers are provided. This is designed to be a constraint on urban expansion, because on-site waste disposal requires a large lot and thus land developers are not able to create profitable densities of development. The idea is based on the Green Belt Plan, but lacks the power of the Green Belt concept. No land is set aside to be preserved. Growth is not prevented; it is only slowed. The MUSA line has clearly slowed development and rationalized the expansion of the sewer lines. Thus one of the major issues of urban expansion has been addressed. The built up area is now not taxed heavily to supply urban services to an ever expanding set of fringe communities. However, the MUSA line is not seen as an absolute limit to urban expansion. Under Green Belt Planning, new towns or satellite communities are designed to receive future population growth and economic development. Under the MUSA line, the goal is to force or encourage higher density development in the built up areas; sort of a reconcentration. But expansion is not stopped - just *slowed* expansion at every low densities continues. However, the process that locates the MUSA line is political. This means that land developers, builders, realtors and others who live on the urban fringe can plead with the Metropolitan Council to expand the line. At present these pleas receive a favorable hearing because the members of the Metro Council are appointed by the State Governor and are not elected by the people. If the Governor is pro-growth he appointed commissioners that are inclined to react favorably to the developers.

An additional problem with the MUSA line is that it allows local governments to tax farm land inside the line as if it were urban. That is the farm land is assessed for tax purposes as if it were going to be developed. This practice dramatically increases real estate taxes on farms and forces farmers to develop their land. So we are not really seeing a reconcentration of people in older areas but rather a filling in of all the land within the MUSA line. The developers are buying farm land outside of the MUSA line in anticipation of further expansion. Clearly this attempt to develop a sustainable community by regulation has not been entirely successful.

The imperfections of the MUSA line have prompted us to attempt another solution to urban sprawl: the decision to build no new freeways. This plan could have greater effect because the urban fringe will not be made more accessible. This plan was the result of a twofold campaign. First, the sustainability pressure groups continually complained about sprawl and the fact that the built up area was subsidizing the ever outward expansions of high income areas. Secondly, the Minnesota Highway department reported that the funds available for road construction in the foreseeable future were not sufficient to adequately maintain the existing network of roads and bridges and certainly could not be expected to extend the freeway system. This is a harsh reality check. We can not really afford sprawl.

The decision to stop building new freeways has the potential to change the behavior of Twin City drivers. As can be seen from the maps showing the growth of the Twin Cities Urbanized Area, the freeways have both facilitated and focused growth. The system is now at its capacity. At present, the greatest congestion on the freeway system is in the suburbs. In theory we could expect people' s attitudes toward commuting to change if they realize the current delays will only be getting longer in the future. Perhaps people will form car pools or move closer to their work so as to reduce their commute. In addition plans, are being developed for the building of an important light rail transit route linking the Mall of America, the airport, the university and downtown Minneapolis.

Those of us who are optimistic think these are all steps toward increasing the sustainability of the Twin Cities. The pessimists present a counter-argument based on the supposition that drivers will cling to their cars and force the development of new roads. Another possibility is that sprawl will increase because more employers will build plants and offices on the urban-rural fringe to escape the congestion in the second- and third-tier suburbs. Thus we can report only tentative conclusions on the developments within the transportation system.

In a similar fashion, the power utility has launched a major conservation program among its customers so it will not have to build a new power plant. The environmental impact of coal burning plants is quite significant and the procedure of getting the necessary permits is long and costly. The managers of the utility have determined it will be more profitable to maintain the present demand, and to develop new sources of alternative power from wind generators and biomass plants. They will continue to buy energy from Canadian Hyropower plants. At present these alternative energy sources are not cost- effective but may become more practical as time passes. In the meantime, energy conservation has taken major steps. I serve as the President of Minnesota Landmark, a non-profit corporation that manages building that houses several different arts and cultural organizations(*Illustration #2*). We have an art museum, a keyboard instrument museum, a theater, small performance rooms and several offices. During the past year we conducted an energy audit of the building and determined the energy use of each light bulb, fan, motor, compressor, and office machine. With that information we were able to develop a plan to replace high energy-using products with those that would save energy and money. The savings are tremendous even though we only made changes that would pay for themselves in less than five years. Clearly we determined to save energy when we realized we could save significant amounts of money.

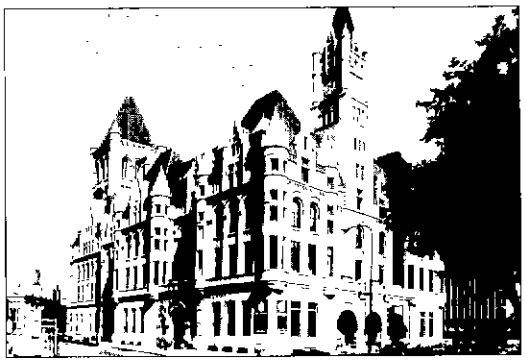

Illustration #2

Landmark Center, St Paul, Minnesota. This century old building was built as a combination Courthouse, Post Office, and office building for the Federal Government. Abandoned and then restored in the 1970s and 1980s it now houses several museums, theaters, and offices for arts organizations. Its beautifully restored courtrooms and the large cortile are the scene of hundreds of special events each year. Recent energy audits and updates have made this old building more energy efficient demonstrating the possibility of uniting economic and ecologic concerns

In situations where resource use does not have an obvious cost associated with it, the impacts of audits are less dramatic. In these cases we must appeal to the non-monetary side of people and speak to their ideals. This is hard to do in a capitalistic state(*Illustration #3*) Here you see an example of a small scale attempt to provide feedback on behavior that is not conducive to sustainable communities. The printing reads, "Don't Pollute, Drains Directly into the River". Thus the sign is an attempt to get people to stop pouring household chemicals and automotive fluids into the storm drains by reminding them of the destination of the sewers. I do not know how much effect this signage program has on human behavior, but it is an example of the sort of education that is needed in North America. Our population must be made aware of the impact of its

Illustration #3

Stenciled warning about the direct connection between storm drains in the street and the Mississippi River. This is an example of keeping citizens informed of the impact of their activities on the environment

Illustration #4

Compost pile in Minneapolis, Minnesota. These people are collecting composted lawn and garden materials for use as soil fertilizers. The community composting program is an example of how small efforts can have a direct impact on the sustainability of communities.

activities.

Households and individuals can engage in other sorts of activities that will promote sustainability. These are local and small-scale activities, but when added together they have a great impact. They are certainly not new ideas, but they have been dramatically promoted in recent years. They are bike lanes, recycling and community composting. All three are examples of how local political pressure brought about a change in the way the local government operates the city.

Recycling is a behavior that was ineffective until a local market was developed for the paper, glass and aluminum. The potential users of the material could not start up without a reliable supply. Therefore, the citizens forced the city to begin a program of curbside pick up of recyclable materials. This service was subsidized by the local government because of the problems associated with landfills. Landfills were filling up and alternative sites were not obvious. By reducing the trash stream with recycling, the life expectancy of the landfills was extended and the cost of trash hauling reduced. Although recycling is voluntary, essentially all households engage in it.

Community composting is a similar venture (*Illustration #4*). The Minnesota Pollution Control Agency banned the burning of yard and garden waste in the 1970s because of deleterious effect of levels of pollution caused by the incomplete combustion in the bonfires. The householders could either pay to have the leaves put in a landfill or compost them on their property. The prospect of mountains of leaves filling up landfills appealed to no one. Therefore the county created several compost sites. Citizens must haul the yard waste to the sites, however. They are also encouraged to haul the compost back to their gardens during the growing season. This system seems to work quite well.

Bike lanes are a new feature in the Twin Cities. For decades bicycles have been considered toys for children or a recreational devices. They were not considered significant elements of traffic. Enthusiasts lobbied the Public Works Department to make commuting by bike safer by creating special lanes for bike riders. After years of hesitation and limited experimentation, the traffic managers have become convinced that the bike rider is an important segment of the population. The bike lanes have achieved two goals. First, they have reduced the energy consumption during the commute.

Second, and perhaps more importantly, they have reduced the energy consumed in recreation. Instead of driving to a park or lake shore, more and more people are taking their bikes for ride. This is not only healthy for them, it also enables them to get to know their communities better.

These three behaviors are examples of simplifying lifestyles and are certainly not grandiose or activities that are unique or even possessing high visibility. Nearly any unit of government or community can engage in them. That is exactly what makes them so interesting to me. If communities are to be sustained we all must continue to do the countless little things that improve the environment and our social structures. If we do not do the easy things, how can we expect to accomplish the larger task and higher goals?

We are also trying to accomplish something a little more grandiose in St. Paul. We are going to reestablish a wetland. The city government acting at the request of the local community, has determined to purchase and tear down a shopping center, dig up the parking lot and recreate a lake that was drained by real estate developers a century ago. This is not how things are supposed to work in North American cities. Open land is supposed to be developed and all parcels are expected to be converted to their highest and best use. Best use is always defined in terms of the land use that yields the greatest rent (*Illustration #5*).

How could this happen? The residents of this part of the city have determined to do everything in their power to make their community sustainable. This dramatic landscape revision could only happen because of the concern of the local neighborhood and the responsiveness of the central government. Will it work? Can a community lose its business center and be sustainable? It is way to early to know for sure. In this case, the recreation of wet land was the best alternative to a problem. The apartments around the center were problems and the shopping center was losing money. The usual developer' s response would be to put more development in the space and increase the density. The locals determined that such a policy would diminish the sustainability, and so we have this grand experiment.

Illustration #5

Wet land restoration project St. Paul, Minnesota. Here we see the excavation for the bed of the restored Lake Ames. This site was a marsh until it was dramed, filled, and paved over for a shopping center. Local residents developed a creative reuse for the site after the shopping center failed. This is an example of more dramatic efforts to create sustainable communities that are maintainmg the local ecology

For my final example I would like to draw your attention to a set of communities to the north of downtown Minneapolis. These are separate political units that were developed as suburbs during the middle of the century. They are now called inner-ring suburbs. The communities are interesting because they are now have much in common with the older city neighborhoods and of course they are in competition with newer communities developed on the city edge. What will become of these places? Can they be made sustainable? A project based at the Center for the Design of the American Urban Landscape at the University of Minnesota has begun to examine these communities. There are major forces working to diminish their viability. Foremost among these forces are the highway builders, who wish to maximize the flow of traffic on the right of ways

through the communities. The need for road upgrades is driven by the increasing flow of commuters from the new developments on the city fringe. These are not new freeways, but upgraded county highways. As they are widened, new types of commercial building are erected. These buildings are called job boxes because they are usually large simple structures that are designed without much regard for the community surrounding them. The job boxes attract large numbers of people who need space to park their cars and so the job boxes are always surrounded by paved space for vehicles. This sort of landscape precludes the development of traditional streets or pedestrian landscapes. Not only are these spaces unattractive, but they also use considerable amounts of energy. It will be possible to redesign these communities, but they must work together. Here we see ideas for alternative development that brought about a more human scale landscape and sustainable development (*Illustration #6*)

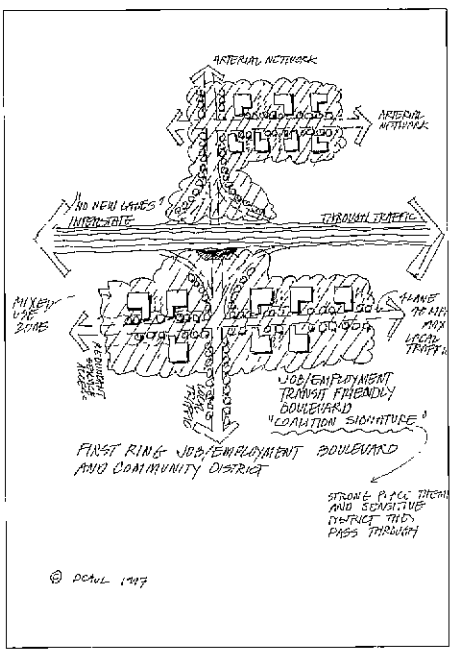

Illustration #6

This example of how a suburban commercial area could be redeveloped was prepared by the Design Center for the American Urban Landscape, the University of Minnesota. It provides an alternative to the standard freeway interchange development patterns

Let us turn from these initiatives to look at the harsh economic issues of sustainability and examine the task ahead. The issue of sustainability is most dramatic when we look at the communities in the center of the metropolitan region(*Illustration #7*). This is a map showing change in the value of residential housing units in St. Paul. This is drawn with ArcView and shows the location of approximately 64,000 buildings. The data was prepared by the County Assessor who is responsible for determining the value of all real estate so the taxes on the properties can be determined. We can see while some parts of the city have increased in value quite dramatically, others are experiencing marked decline. Can a part of a city be successful when others are not? (*Illustration #8*) We have also mapped investment in property. Homeowners must get a building permit before they can make any visible changes to the building(painting is excluded). Our research team recorded the permits issued in two separate years and combined them to get an idea of the pattern of investment. Our thinking is obvious. If a community is going to be sustained it must receive a continuous flow of investment for both maintenance and improvement. But what causes investment in parts of the city and not in others? Why do some places lose value while other gain value? We are attempting to describe the factors that will encourage investment, and those that have a negative impact.

In conclusion, I have tried to indicate how global change and the quest for sustainable communities are issues that invite inquiry by geographers. The saying "think globally, act locally" epitomizes the issues. We must continue to conduct research and ponder issues at the global scale, but we must also work diligently to make the

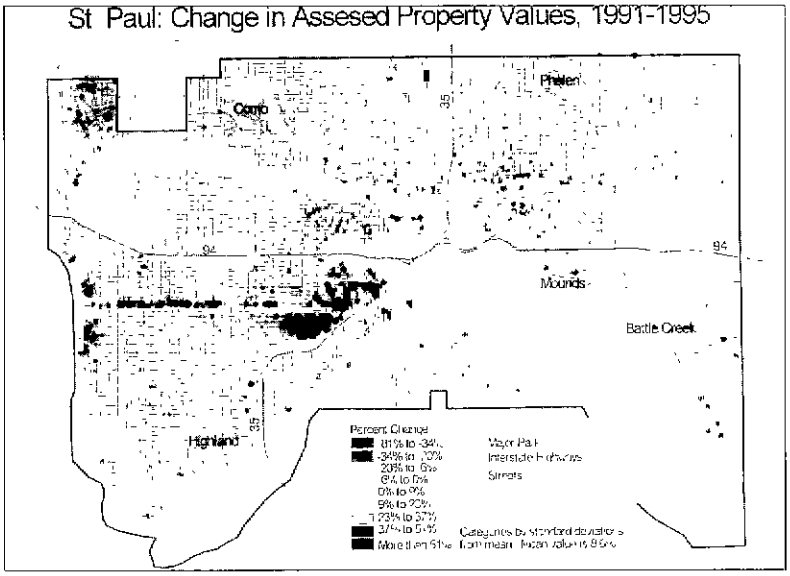

Illustration #7

Change in assessed property values in St. Paul, Minnesota, map by Claudia Fonkert Macalester College. This map illustrates the geography of change in real estate value The darkest areas have the greatest increases. this is one measure of sustainability. It shows that some parts of the city are losing value and therefore not sustainable. It raises the question about long term sustainability of the entire city.

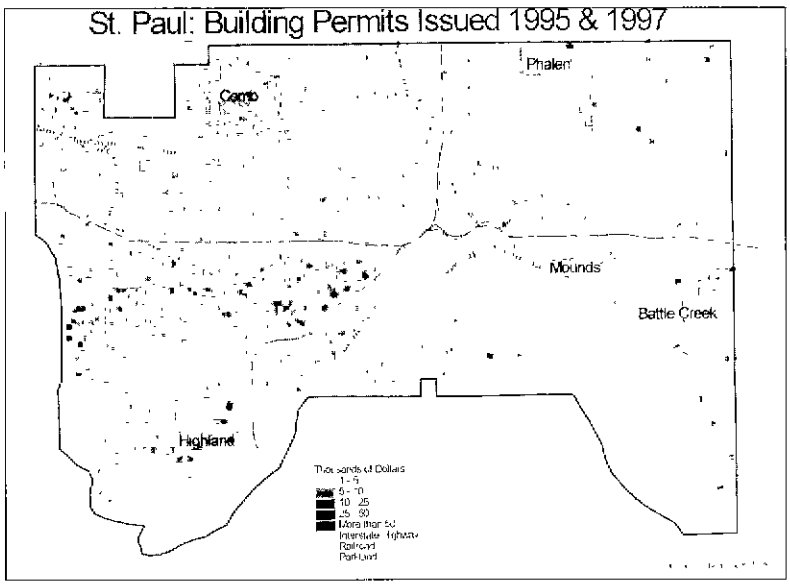

Illustration #8

Building permits issued in St. Paul, Minnesota, map by Claudia Fonkert, Macalester College. This map shows the geography of citizen investment in home maintenance and building. The pattern is another reflection of the sustainability of communities within the city

communities in which we live more sustainable. No one will ask the geographer's questions for us. No one will search for the spatial patterns and location factors if we do not. Geographers can not create sustainable communities by themselves, but our contribution is an essential ingredient of the formula for success.

Notes

1) UNCEP, 1992, "Our Common Future Reconvened" London UK. UN Commission on Environment & Development.
2) The State of Canada's Environment. Ottowa Ministry of the Environ. 1991, p. 121.
3) Calthorpe, Peter. *The Next Metropolis: Ecology, Community, and the American Dream.* New York. Princeton Architectural Press, 1993.